

THE BOY WHO HARNESSSED THE WIND BOOK CLUB

Afterschool Literacy + STEAM — Facilitator Director's Guide

10 Sessions | 60 Minutes | Mixed Grades 6–8 | Written for OST Staff

About This Program

The Windmill Club is a 10-session afterschool Literacy + STEAM program built around *The Boy Who Harnessed the Wind* by William Kamkwamba and Bryan Mealer. Each 60-minute session is organized into five blocks: a community-building Arrival Ritual, a game-based Word Play vocabulary block, a student-led Story Circle discussion, a hands-on 25-minute STEAM Lab, and a Shoutout & Send-Off closing. The program is designed for mixed grades 6–8 and written specifically for Out-of-School Time (OST) staff. Every lesson includes word-for-word facilitator scripts, student choice menus, movement cues, and plain-language educator notes.

What educators can expect: Each session requires 10–15 minutes of prep time before students arrive. All materials are low-cost or free, with no-print alternatives provided throughout. Two program-wide rituals, the Windmill Award and the Wonder Wall build community across all 10 sessions. A full Vocabulary Appendix contains scripted word cards for all 50 vocabulary words, organized by session.

What students can expect: Students will read a memoir about a 14-year-old boy in Malawi who taught himself physics from a library book and built a windmill from scrap during a famine. They'll explore static electricity, build windmill blades, map crisis systems, wire parallel circuits, investigate wind energy, and design their own community inventions. By Session 10, they'll have 50 new vocabulary words, a working windmill model, and a firsthand understanding of the engineering design process.

The 10 Sessions

#	Session Title	STEAM Lab	Reading
1	When Magic Ruled the World	Scrap Lab Brainstorm	Prologue + Ch. 1
2	A Thing Called Science	Static Electricity Lab	Ch. 2–3
3	The Famine Begins	Problem-Solving Design Cycle	Ch. 4–5
4	The Darkest Days	Wind Energy Investigation	Ch. 6–8
5	The Library & the Dream	Improvise It! — First Blade Design	Ch. 9
6	Harvest Time & the Scrapyard	Build a Windmill — Day 1 (Blade Testing)	Ch. 10
7	The Windmill Comes to Life	Introduction to Circuits	Ch. 11
8	Bigger and Brighter	Series vs. Parallel Circuit Lab	Ch. 12
9	The World Discovers Wimbe	Build a Windmill — Day 2 (Tower + Final Test)	Ch. 13–14
10	Celebration Studio	Design Showcase	Ch. 15 + Epilogue

Program Goals & Student Objectives

By the end of the 10-session program, students will have worked toward the following goals across three areas. These are the outcomes that shape every session — they are not assessed with a grade, but they are visible in what students say, make, and do.

 LITERACY

 STEAM

 CHARACTER & SOCIAL

- Engage with a full-length memoir through sustained reading and discussion across 10 sessions - Acquire and use 50 academic vocabulary words with an understanding of etymology, connotation, and context - Cite textual evidence to support claims in student-led discussion - Analyze character motivation, author's craft, and theme in a nonfiction text - Build fluency and confidence speaking about ideas in front of peers	- Apply the engineering design process: identify, constrain, brainstorm, prototype, test, iterate - Explore physics concepts: static electricity, wind energy, circuit design - Collect, represent, and interpret data to make evidence-based arguments - Understand energy conversion: mechanical → electrical - Connect STEAM thinking to ethical questions — equity, access, and community	- Build trust and belonging within a mixed-grade peer group over time - Practice perspective-taking, active listening, and constructive disagreement - Develop self-awareness through reflection on growth, risk, and identity - Recognize personal strengths and the value of different ways of thinking and learning - Experience a learning environment built on choice, respect, and genuine curiosity
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How Each Session Works

Each session of the Windmill Windmill Club follows the following structure. You can modify the times to meet your programs needs. In the “Pre-Reading” section there are also recommendations for how to run this program with different structures.

 ARRIVAL RITUAL 5 min	 WORD PLAY 10 min	 STORY CIRCLE 15 min	 STEAM LAB 25 min	 SHOUTOUT 5 min
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 More Movement & Games Every session includes at least two movement moments — physical debate positions, walk-the-room activities, standing to bid or answer, circle formats. Students should be out of their seats for at least 15 of the 60 minutes. <i>Look for the  marker throughout this guide.</i>	 More Student Choice Every block has a Student Choice moment — students vote on the format before you start. This is not just engagement: it's ownership. When students decide how the room runs, they're more invested in what happens. <i>Look for the  marker throughout this guide.</i>	 Less Writing, More Making No worksheets. No individual written responses during sessions. The STEAM Lab is 25 minutes of building, testing, and presenting. Story Circle is talking, debating, and moving — not writing answers. Vocabulary is games and drama, not fill-in-the-blank. <i>The making IS the learning.</i>
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 The Windmill Award One student earns it each session — for the most memorable moment of the day. They hold it until next time, then pass it to someone else. It's a week-to-week story of highlights. <i>How to award it: 'Who had the moment today?' Let the group nominate. You make the final call if needed.</i>	 The Wonder Wall One section of the room is reserved for student work. Never take it down during the program. By Session 10, students walk in and see 10 weeks of their own thinking on the wall. <i>What goes up: invention sketches, Wimbe maps, wind data charts, circuit diagrams, blade prototypes, vocabulary categories, invention showcases.</i>
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Nebraska ELA Standards Alignment

This program is aligned to three Nebraska College and Career Ready English Language Arts Standards. All three standards span grades 6, 7, and 8 and are addressed across every session of the program.

Standard	Description & Program Connection
LA.6–8.RP.1 Reading Prose & Poetry	Cite textual evidence to support analysis of what a literary text says explicitly and inferentially. Program connection: Addressed in every Story Circle. Students cite specific chapters and scenes to support their discussion positions. Because this is a memoir, discussions also explore how William's real-world perspective shapes what he chooses to describe and how. The nonfiction frame adds a layer of author's craft analysis not available in fiction. <i>Primary sessions: 1–10 (all Story Circles) Strongest emphasis: Sessions 3, 5, 7, 9, 10</i>
LA.6–8.V.1 Vocabulary Acquisition & Use	Integrate grade-level academic vocabulary for a variety of tasks and purposes, using context clues, Greek and Latin affixes and roots, and reference materials. Program connection: The primary focus of every Word Play block. 50 Tier 2 and Tier 3 words are taught across 10 sessions using the 4-Step Routine (Say It → Define It → Connect It → Use It). The program also incorporates Chichewa vocabulary (sing'anga, misala, maize, magetsi a mphepo) to honor the cultural context of William's story. All 50 words are available with scripted instruction in the Vocabulary Appendix. <i>Primary sessions: 1–10 (all Word Play blocks) Vocabulary Appendix: pages at the back of this guide</i>
LA.6–8.SL.2 Speaking & Listening	Present claims and findings in a focused, coherent manner using relevant descriptions, facts, and details; convey a perspective with clear reasoning and evidence. Program connection: Addressed in every Story Circle (students defend discussion positions with textual evidence) and in every STEAM Lab presentation phase. The physical debate format (stand left/right), gallery walk sharing, and invention showcase in Session 10 require students to present evidence-based claims to an audience. <i>Primary sessions: 3, 5, 6, 7, 9, 10 Daily application: all Story Circle and STEAM Lab present/share phases</i>

About Pre-Reading — How the Book Works in This Program

The Windmill Club is designed as a book club program. The lessons are created with the expectation that students read the assigned chapters before each session and arrive ready to discuss them. This protocol can be modified to meet your needs. The following is an overview of different recommendations for how to structure this.

The Standard Expectation: Students Pre-Read

Reading assignments by session:

Session 1 — Prologue + Chapter 1
Session 2 — Chapters 2–3
Session 3 — Chapters 4–5
Session 4 — Chapters 6–8
Session 5 — Chapter 9
Session 6 — Chapter 10
Session 7 — Chapter 11
Session 8 — Chapter 12
Session 9 — Chapters 13–14
Session 10 — Chapter 15 + Epilogue

What to tell students and families: "This is a book club, not a classroom. Reading the chapters before you come is how you show up prepared to contribute. If you don't finish, come anyway. But the discussions will be richer and more fun if everyone has read."

Time Extension Option: Read Chapters Together in Session

If your program cannot support independent pre-reading, due to access to books, student schedules, or program structure, you can extend the Story Circle block and read the chapters together as a group at the start of each session.

How to run shared reading in session: Arrive with a copy of the book. Read the assigned chapters aloud yourself to the group, or use a paired reading format where students take turns reading one page each. Paired reading emphasizes reading fluency and collaboration vs independent reading.

- Move at a steady pace. Don't stop to discuss while reading, save all discussion for after.
- After reading, continue with the Story Circle discussion as written.

Divide the Lessons: Reading Day and STEAM Day

If your student group meets multiple times per week, you can structure the program to have a reading and book discussion day and then a STEAM day.

Potential Structure:

Day 1: Read the assigned chapters aloud yourself to the group, or use a paired reading format where students take turns reading one page each. After reading, continue with the Story Circle discussion as written.

Day 2: Complete STEAM Lab

Supply List

All materials across the full 10-session program. Most items are reusable. Free alternatives are noted, you can run every session without a printer and without spending more than ~\$15 total.

Day	Materials needed	Free / cheaper alternative
1	World map poster, sticky notes, markers, chart paper for Wonder Wall, junk bags per group (rubber bands, cardboard scraps, bottle caps, straws, popsicle sticks, tape, foil, paper clips), blue + yellow dot stickers	<i>Draw a world map on large paper. Junk bags from recycling and dollar store. Dot stickers = torn sticky-note squares.</i>
2	3 balloons per group, wool piece or hair, tissue paper torn small, puffed rice cereal, plastic comb or ruler, access to running water faucet, paper + pencils	<i>All station materials under \$3 total. No comb: use any plastic ruler.</i>
3	Large paper (1 per group), markers in multiple colors, rulers, sticky notes (2 colors)	<i>Any paper taped together works. Two sticky note colors: draw different shapes on regular notes instead.</i>
4	Paper strips 2cm x 20cm (5 per student), string or yarn, rulers, tape, large paper chart, fan or open window, pencils	<i>No fan: open a window or use a piece of cardboard. Pre-cut strips before session.</i>
5	Cardboard scraps, straws or pencils, tape, scissors, rulers, paper for sketching, index cards, fan or air source	<i>Cardboard from cereal boxes. No fan: wave folded cardboard consistently. Total cost ~\$0.</i>
6	Cardstock or cereal box cardboard, wooden dowels or pencils, fan, tape + scissors, metric ruler, string + small paper cups, Session 5 blades (stored)	<i>No dowels: pencils work. Store Session 5 blades in labeled bags.</i>
7	Cardstock (additional sheets), 9V batteries (1 per group), alligator clip wires (4 per group), LED lights (1 per group), index cards, pencils	<i>No alligator clips: strip bare wire ends and twist to LED legs. Batteries ~\$2 each, reusable.</i>
8	9V batteries (1 per group), alligator clip wires (7+ per group), LED lights (2+ per group), index cards, pencils, cardboard strips	<i>Same batteries as Session 7 (reuse). Extra wire scraps from Session 7.</i>

9	Session 6 windmills (stored), cardboard tubes or wooden skewers (2 per group), tape, fan, string + paper cups, metric rulers, scissors, pennies or small weights	<i>No cardboard tubes: roll and tape a piece of cardboard. No pennies: use paper clips as weights.</i>
10	Session 1 invention sketches (from Wonder Wall), junk bags (same as Session 1), markers for labeling	<i>Pull Session 1 sketches 24 hrs before. If not findable: students redraw from memory (2 min). Just as valid.</i>

  **ALWAYS-ON SUPPLIES** (keep these in the room every session): Markers, pencils, blank paper, sticky notes, tape, a ball of yarn, the Wonder Wall section of the room. Everything else is session-specific and listed above.

Director's Staff Preparation Checklist

Use this checklist to prepare your frontline staff before the program begins and before each session. Staff do not need to be certified teachers — but they do need to be prepared. Fifteen minutes of preparation makes the difference between a session that works and one that doesn't.

BEFORE THE PROGRAM BEGINS — Director tasks

☐	Obtain copies of <i>The Boy Who Harnessed the Wind</i> by William Kamkwamba and Bryan Mealer (one copy for read-aloud; additional copies recommended for students to read independently).
☐	Read the full Guide to Lessons document yourself before sharing it with staff. You cannot prepare staff for something you haven't read.
☐	Share the Guide to Lessons with all frontline staff at least one week before Session 1. Ask them to read the Program Goals, Emerging/Advanced overview, Vocabulary Routine section, and Hosting a Story Circle section.
☐	Read the book yourself, or read session-by-session summaries from the Educator's Guide, so you can answer staff questions about the plot.
☐	Brief staff on content notes: Session 3 (famine begins) and Session 4 (loss of Khamba, peak famine) may be difficult for some students. Advance notice is better than in-the-moment reaction.
☐	Identify which students are likely to need Emerging support and which are likely to need Advanced challenge. Brief your staff before Session 1 so they're watching for the right signals.
☐	Confirm your Wonder Wall space — a wall section that stays up all 10 sessions. Brief staff not to take it down.
☐	Gather always-on supplies: markers, pencils, blank paper, sticky notes, tape, a ball of yarn. Keep these in the room for every session.
☐	Review the Master Supply List and source session-specific materials at least 3 days before each session.
☐	Communicate the pre-reading expectation to students and families before Session 1 (see 'About Pre-Reading' section).
☐	Confirm that junk bag materials are gathered and ready for Session 1 — these return in Session 10.

BEFORE EACH SESSION — Staff tasks (15 min of prep)

☐	Read that session's plan in the Guide to Lessons all the way through — not just the STEAM activity. Read every block.
☐	Read the 5 vocabulary words for the session. Say each one aloud and read its student-friendly definition. (Full scripted cards are in the Vocabulary Appendix.)
☐	Practice the Opening Script for Word Play aloud — at least once, to yourself. Scripted language sounds different out loud than it reads on a page.
☐	Prepare materials from the session's Materials box. Set them out before students arrive.
☐	Read the Pre-Session Setup checklist and complete each item.
☐	Read the STEAM Lab 'If Students Get Stuck' box so you know the most likely sticking point and what to say before students get there.
☐	Identify which Story Circle questions you'll use as backups if the chosen question doesn't land. Have 2 follow-ups ready.

☐	Check that the Wonder Wall space is clear and ready for new additions from this session.
☐	Sessions 4, 6, and 9 require retrieving stored student materials (paper strips/blades/windmills). Confirm these are accessible before students arrive.

AFTER THE PROGRAM — Director debrief tasks

☐	Photograph the Wonder Wall in full before taking anything down.
☐	Collect any student artifacts designated for portfolio documentation (see Recommended Documentation section).
☐	Ask staff: which sessions had the strongest engagement? Which stalled? Note this for program planning.
☐	Document which NE ELA standards were addressed for grant reporting (see Standards Alignment section).
☐	Retrieve and store Session 1 invention sketches if not already pulled for Session 10.

Learner Modifications: Emerging & Advanced

Every Word Play block in this program includes Emerging and Advanced modifications. These are not labels to assign to students — they are tools for facilitators to use in the moment. The same student may need Emerging support on a difficult vocabulary word and Advanced challenge on a discussion question. Watch for signals, not categories.

 EMERGING	 ADVANCED
Who this is for: A student who is just beginning to access the content — they may struggle with a word's pronunciation, need more time to formulate a response, rely on their peers' answers before contributing, or disengage when the pace moves too fast. What you'll see: Silence or one-word answers during Connect It. Waiting to copy what others say. Difficulty completing a Use It sentence independently. Looking around the room instead of at the word card. What to do: Slow down. Break the word into syllables and have them repeat. Give a sentence starter: 'This word makes me think of ___ because ___.' Pair them with a stronger speaker for the Use It step. Accept partial answers and build on them: 'You've got the idea — let me sharpen it.' Director's note: Brief staff on which students are likely to need Emerging support before Session 1. Don't wait until a student shuts down to intervene — proactive pairing is more effective than reactive rescue.	Who this is for: A student who grasps the word quickly and is ready to push further — they can define it without the card, make connections without prompting, and use it in a complex sentence without hesitation. They may grow restless if kept at the basic level. What you'll see: Fast, confident answers. Jumping ahead to the next word. Making connections unprompted. Finishing sentences before others. Adding nuance or counterarguments to the discussion without being asked. What to do: Use the Advanced prompt from the session's Word Play block. Ask them to use two vocabulary words in one sentence. Ask them to explain what's WRONG with a simple definition. Give them the Connect It question for the next word while others are still finishing. Make their thinking visible to the group: 'Say that again so everyone can hear it.' Director's note: Advanced students can become disruptive when under-challenged. The Advanced modifications in each session are specifically designed to give them something harder to do within the same activity — not a different activity.

Vocabulary Instruction: A Guide for Facilitators

This program uses a 4-Step Vocabulary Routine in every session. You don't need to be a vocabulary expert to run it — but you do need to understand what each step is trying to accomplish and what good student participation looks like. This section is your orientation.

Step	What it's doing	What good looks like
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STEP 1 SAY IT	Building the phonological form of the word in students' memory. You can't own a word you can't say. Saying it aloud multiple times — at different volumes and with different expression — encodes it more deeply than reading it silently.	Every student says the word aloud. No one is just watching. If anyone is silent, prompt them specifically: 'Say it with us — [word].'
STEP 2 DEFINE IT	Giving students the meaning in plain language, connected to something familiar. This is NOT about memorizing a dictionary definition — it's about building a working understanding they can use in a sentence.	Students can restate the definition in their own words without looking at the card. If they can say it back differently, they understand it. If they recite the exact wording, they've memorized it but may not own it.
STEP 3 CONNECT IT	Linking the word to students' real lives, prior knowledge, or the text. This is the step that moves a word from 'I know what it means' to 'I can use this.' Connection is the most important step for long-term retention.	Students share connections that are personal and specific — not just 'it reminds me of school.' Disagreement between students about the connection is a positive sign: it means they're thinking, not just answering.
STEP 4 USE IT	Producing the word in an original sentence at the student's grade level. This is the step that confirms comprehension — a student who can use a word correctly in a new sentence has genuinely acquired it.	Sentences use the word in a way that demonstrates its meaning — not just 'I saw something dynamo.' Give feedback: 'Great — can you add WHY to make the sentence stronger?'

Common facilitator mistakes in Word Play	What strong vocabulary facilitation looks like
✗ Giving students the definition before Say It — skip the pronunciation step and students miss the phonological encoding	✓ You say the word first with clear pronunciation, then invite the group to repeat — you model, they follow
✗ Accepting 'I don't know' and moving on — try a sentence starter or pair the student first	✓ You restate the definition in your own words immediately after reading it from the card
✗ Spending more than 2 minutes on one word — keep the pace up; depth comes from the whole routine, not one step	✓ You give 5 full seconds of wait time after the Connect It question before calling on anyone
✗ Skipping Use It because you're short on time — this is the most important step; protect it	✓ When a student's sentence is close but not quite right, you say 'You've got the idea — let me add one thing' rather than 'That's wrong'
✗ Correcting sentences in a way that shuts students down — build on their answer, don't replace it	✓ You write student-generated sentences on the board — making their language visible signals that it matters

Hosting a Story Circle: A Guide for Facilitators

The Story Circle is the discussion block at the heart of every session. Its goal is student-led conversation about the book, not a quiz, not a summary, not a teacher lecture. Your job as the facilitator is to ask the question and then get out of the way. This section tells you how.

The core rule: you should be talking less than 20% of the time.

If you find yourself explaining the book, summarizing the plot, or filling silences with your own opinions — you've shifted from facilitating to teaching. That's not the goal. Explain the question. Ask the question. Wait. Listen. Ask a follow-up. That's the whole job.

How to ask a question well

How to handle silence

How to deepen a response

Read the question aloud clearly and completely, don't paraphrase it on the fly.	Count to 10 in your head before doing anything. Silence feels longer to you than to students.	After a student responds, resist the urge to immediately evaluate it ('Great point!'). Instead, direct it back: 'Does anyone agree or disagree with that?'
Then be quiet. Don't add caveats, hints, or pre-answers. Ask it and wait.	If no one speaks by 10: try a lower-stakes entry. 'Let's start smaller, can anyone give me one word that connects to this question?'	Build on what they said: 'You said William had no choice. Where in the text do we see that, can someone find an example?'
If students look confused: 'Let me say that another way.' Rephrase once, simply. Then wait again.	If still nothing: ask for a show of hands or thumbs, then ask one person who responded to say more.	Create productive disagreement: 'That's one perspective — who sees it differently?'
The questions in the lesson are designed to be genuinely debatable, there is no single right answer. Say so: 'There's no right answer here. I want to hear what YOU think.'	Never answer the question yourself. If you answer it, students learn they can wait you out. Say: 'I want YOUR thinking on this — not mine.'	When a student goes quiet after one sentence: 'Say more about that. What makes you think so?'

Questions that shut discussion down	Questions that open discussion up
✗ "Did you like this part of the book?" — yes/no, no depth	✓ "What is William actually afraid of in this scene — and how do you know?"
✗ "What happened in this chapter?" — summary, not analysis	✓ "Is what William's father does a betrayal or a survival decision? Make the case."
✗ "Who can tell me what scarce means?" — recall, not thinking	✓ "Where does William get it wrong — and why does that matter?"
✗ "Does everyone agree?" — invites passive agreement, not debate	✓ "Who sees this differently? What evidence do you have?"
✗ "What do you think the author meant?" — too abstract without scaffolding	✓ "What would YOU have done — and what would it have cost you?"



Remember: The Story Circle questions in each session are already designed to be genuinely debatable — no yes/no answers, no single right response. Your job is to ask the question clearly and then create the conditions for students to think out loud. A discussion where students disagree respectfully is better than one where everyone agrees quickly.

What to Say If...OST Staff Cheat Sheet

The situation	Say this
A student won't participate	"No pressure — you can just watch this round. Jump in whenever you're ready." Then check in quietly after the activity.
Discussion goes completely silent	"Okay — new rule. You have to disagree with the last thing someone said. Anyone want to try?" Structured disagreement breaks silence faster than open questions.
A student dominates every discussion	"Awesome — let's hear from someone we haven't heard from yet." Or: "Hold that thought — [name], what do you think?"
You don't know the answer to a question	"Great question. I don't actually know. Who wants to find out?" Model curiosity, not expertise.
The STEAM activity isn't working	"Okay — something's not going right. What do you think is wrong? Let's figure it out." Troubleshooting IS the STEAM learning.
Students say the book is boring	"What WOULD be interesting about William's situation? What would you change?" Don't defend the book — redirect to what students care about.
Two students clash	Pause the group. "We can disagree about ideas — that's what this program is for. Let's try that again with a different approach." Then move forward.
A student shares something heavy	Thank them for sharing. Don't move on too fast. Say: "That took courage to say." Check in with them privately after the session if needed.

Grant & Reporting Data

This unit supports the following reporting categories for 21st CCLC and similar OST grant programs. Use this section when completing program quality reports, grant narratives, or funder check-ins.

Reporting Category	How This Program Qualifies
21st CCLC Program Quality — Literacy Enrichment	10-session literacy program aligned to Nebraska ELA Standards (grades 6, 7, 8) across literary text comprehension (LA.6–8.RP.1), academic vocabulary acquisition (LA.6–8.V.1), and speaking & listening (LA.6–8.SL.2). All sessions are standards-referenced and designed for mixed-grade OST settings.
STEAM Integration	Every session includes a 25-minute STEAM Lab connecting science, technology, engineering, and mathematics to the anchor text. Labs include: engineering design thinking (Session 1), static electricity/physics (Session 2), systems mapping + design cycle (Session 3), wind energy measurement + applied math (Session 4), aerodynamics + blade design (Session 5), engineering iteration + data analysis (Session 6), circuit design + physics (Sessions 7–8), windmill engineering + percent change math (Session 9), and invention showcase (Session 10).
School-Day Alignment	Science of Reading vocabulary instruction mirrors the Nebraska Science of Reading framework for grades 6–8. The 4-Step Vocabulary Routine (Say It → Define It → Connect It → Use It) aligns to Tier 2 and Tier 3 word instruction at each grade level. Story Circle discussions reinforce textual evidence and literary analysis skills taught during the school day. This program reinforces, not replaces, school-day instruction.
Differentiated Instruction	All 10 sessions include Emerging and Advanced modifications within the Word Play block. Vocabulary Use It prompts are differentiated by grade level (6th, 7th, 8th) with distinct sentence-level tasks. STEAM Labs include open-ended design challenges that allow students to engage at multiple levels of complexity within the same activity.
Attendance & Engagement Documentation	10-session program with structured arrival rituals, two program-wide engagement rituals (Windmill Award, Wonder Wall), and session-by-session STEAM artifacts for portfolio documentation. Student-produced artifacts are available from every session.

Recommended Documentation

If your program collects student impact data for grant reporting or program evaluation, the following are recommended per session and across the full program.

When	What to Collect
Every Session	Photograph completed STEAM Lab artifacts and Wonder Wall additions. Photograph the Wonder Wall (Session 1 and Session 10) to document growth across the program.
Session 1 (Baseline)	Store Session 1 invention sketches on the Wonder Wall. Photograph them before posting so you have a baseline if they are removed.
Sessions 5 & 6	Collect blade design sketches and wind test data charts as engineering portfolio artifacts — both require students to use data and evidence to make a design decision.
Session 9	Photograph team windmill final test results (rotation count, maximum load lifted, percent improvement calculations). These make strong portfolio artifacts showing scientific measurement and engineering iteration.
Session 10 (Culmination)	Photograph the final invention showcase alongside the original Session 1 sketches. Capture the group photo. The side-by-side comparison of Session 1 → Session 10 thinking is the program's most powerful documentation.

FOR SCHOOL-BASED LEADERSHIP

The Windmill Club — Grades 6–8 Literacy + STEAM Program

A program share-out for principals, superintendents, and school-based partners

About This Program

The Windmill Club is a 10-session afterschool Literacy + STEAM program built around *The Boy Who Harnessed the Wind* by William Kamkwamba and Bryan Mealer. Each 60-minute session combines academic vocabulary instruction, student-led book discussion, and a 25-minute hands-on STEAM Lab. The program runs for 10 weeks and is designed specifically for out-of-school time settings with non-certified OST staff as facilitators.

Designed for mixed grades 6–8 • 10 Sessions, 60 Minutes Each • Written for OST Staff

Program Outline

Session	Literacy + Vocabulary Focus	STEAM Lab + Skills
1 — When Magic Ruled the World	Discussion: setting, cultural context, curiosity; 5 vocabulary words (scarce, perseverance, superstition, maize, sing'anga)	Scrap Lab Brainstorm — engineering design thinking, community problem identification
2 — A Thing Called Science	Academic vocabulary; etymology; 5 words (resilience, curiosity, innovation, tuberculosis, transistor)	Static Electricity Lab — physics of charge, attraction, and electron transfer
3 — The Famine Begins	Story Circle: scarcity, systems, community; 5 vocabulary words (scarcity, anguish, subsistence, famine, deforestation)	Problem-Solving Design Cycle — systems mapping, constraints, assets, brainstorming
4 — The Darkest Days	Textual evidence; 5 vocabulary words; discussion of survival and grief	Wind Energy Investigation — measurement, data collection, applied math (swept area)
5 — The Library & the Dream	Student-led discussion; 5 words (reclaimed, stimulated, dynamo, rotor, improvise)	Improvise It! First Blade Design — aerodynamics, prototype engineering
6 — Harvest Time & the Scrapyard	Textual evidence; 5 vocabulary words (laden, significant, resemble, welded, booted)	Build a Windmill Day 1 — blade testing, data analysis, engineering iteration
7 — The Windmill Comes to Life	5 vocabulary words (assembling, cumbersome, prototype, voltage, transformer); definition drama	Introduction to Circuits — series circuits, LED wiring, circuit troubleshooting
8 — Bigger and Brighter	5 vocabulary words (diode, nonconductive, ferocious, circuit breaker, reliable); word auction	Series vs. Parallel Circuit Lab — circuit design, safety engineering, applied physics
9 — The World Discovers Wimbe	Textual evidence: advocacy; 5 words (transmitter, innovation, eloquent, flocked, advocate)	Build a Windmill Day 2 — tower design, final test, percent improvement calculation
10 — Celebration Studio	Full memoir arc reflection; vocabulary synthesis; 5 words (ingenuity, momentum, culmination, magetsi a mphepo, transformation)	Design Showcase — engineering design, invention presentation, full program synthesis

Alignment to School-Day Standards

Nebraska ELA Standard	How This Program Addresses It
LA.6–8.RP.1 Reading Prose & Poetry	Students cite textual evidence across all 10 Story Circle discussions to support analysis of character motivation, theme, and author's craft in a full-length memoir. Strongest emphasis in Sessions 3, 5, 7, 9, and 10.
LA.6–8.V.1 Vocabulary Acquisition & Use	50 Tier 2 and Tier 3 academic vocabulary words taught across all 10 sessions using a 4-Step Routine (Say It → Define It → Connect It → Use It). Includes Chichewa cultural vocabulary. Mirrors the Nebraska Science of Reading framework for grades 6–8.
LA.6–8.SL.2 Speaking & Listening	Students present evidence-based claims in every Story Circle and STEAM Lab. Structured speaking formats (physical debate, gallery walk, invention showcase) practiced in Sessions 3, 5, 6, 9, and 10.

Grant & Reporting Category Alignment

21st CCLC Program Quality: Literacy Enrichment	10-session literacy program aligned to Nebraska ELA Standards (grades 6, 7, and 8) across literary text comprehension (LA.6–8.RP.1), academic vocabulary acquisition (LA.6–8.V.1), and speaking & listening (LA.6–8.SL.2). All sessions are standards-referenced and designed for mixed-grade OST settings.
STEAM Integration	Every session includes a 25-minute STEAM Lab connecting science, technology, engineering, and mathematics to the anchor text. Labs span: engineering design (S1), static electricity (S2), systems mapping (S3), wind energy + applied math (S4), aerodynamics + blade design (S5), engineering iteration + data analysis (S6), circuit design (S7–8), windmill engineering + percent change (S9), and invention showcase (S10).
School-Day Alignment	Science of Reading vocabulary instruction mirrors the Nebraska SOR framework for grades 6–8. The 4-Step Vocabulary Routine aligns to Tier 2 and Tier 3 word instruction at each grade level. Story Circle discussions reinforce textual evidence and literary analysis skills taught during the school day. This program reinforces, not replaces, school-day instruction.
Differentiated Instruction	All 10 sessions include Emerging and Advanced modifications within the Word Play block. STEAM Labs include open-ended design challenges that allow students to engage at multiple levels of complexity within the same activity.
Attendance & Engagement Documentation	10-session program with structured arrival rituals, two program-wide engagement trackers (Windmill Award, Wonder Wall), and student-produced STEAM artifacts available for portfolio documentation from every session.

Impact & Outcomes: What to Look For

 Literacy Outcomes	 STEAM Outcomes	 Character & Behavioral Outcomes
- Students read and discussed a full memoir across 10 weeks - Acquired and used 50 grade-level academic vocabulary words - Practiced citing textual evidence in every discussion - Analyzed character, theme, and author's craft in a nonfiction text	- Applied the engineering design process across 10 labs - Built and tested windmill blade and tower prototypes - Explored physics, circuit design, aerodynamics, and wind energy - Calculated percent improvement using real lab data	- Built trust and belonging in a mixed-grade peer group - Practiced perspective-taking, active listening, and constructive disagreement - Experienced a learning environment built on choice, respect, and genuine curiosity

Additional Notes

Use this space to share student artifact photos, attendance data, or other program highlights relevant to your school partner.

THE BOY WHO HARNESSSED THE WIND

Family Night Guide

 **TIME: 3 Hours**

 **WHO: Students + Families**

 **GRADES: 6 – 8 (Mixed)**

 **FORMAT: Movie + STEAM Challenge**

About This Event

The Windmill Club Family Night is a celebration and a hands-on experience. Students have spent 10 sessions reading *The Boy Who Harnessed the Wind*, exploring engineering, energy, and resilience through William Kamkwamba's true story. Tonight, families watch the Netflix film adaptation together, discuss what they saw, and take on a real engineering challenge inspired by William's journey.

The evening runs 3 hours and is structured in three parts: a Movie Screening where families watch the full film (1 hr 53 min), a Movie Debrief and STEAM Build Challenge where families work together on an engineering problem inspired by William's scrapyard, and a Story Share where students connect William's journey to their own lives.

GOALS FOR TONIGHT

Students will...	Families will...
• Share and explain their learning to family members • Connect William's story to real-world engineering and science • Work collaboratively on a STEAM challenge • Practice explaining their thinking out loud	• Watch the film adaptation of the book that their student has been reading • Learn about wind energy, engineering design, and perseverance alongside their student • Participate in a hands-on build challenge • Walk away with something their student made

SUPPLY LIST

Movie Screening	STEAM Build Challenge	Story Share + Closing
• Access to Netflix (or downloaded film) + screen/projector • Printed movie discussion question cards (1 per family) • Sticky notes + markers for reactions • Popcorn or light snacks (optional — arrival or mid-film)	• Newspaper – 3 sheets per group • Index cards – 5 per group • Masking tape – 30cm per group (pre-cut) • 2 hardcover books or wooden blocks per table (bridge supports, 20cm apart) • 1 small paper cup per group • 20 – 30 pennies or paper clips per table (load weights) • Ruler • Paper + pencils for sketching and prediction	• Windmill Cards (template in Appendix) • Colored pencils or markers • Display space for finished cards • Optional: additional refreshments at close



Collect 2 – 3 work samples per student at the end of Session 9 or 10 if you plan a student work display near the entrance. Set everything up before families arrive. Students should walk in feeling proud of what they have accomplished.

ROOM SETUP

Zone 1 — Screening Area	Zone 2 — Build Tables (set up in advance)
• Arrange seating so all families can see the screen clearly • Place discussion question cards and sticky notes on seats before families arrive • Dim lights but keep a low light for note-taking • Test Netflix / streaming + projector before students arrive • Optional: small student work gallery near the entrance for arrival browsing	• Set up build tables at one side or rear of the room — families move here after the debrief • Each table seats one family group (student + 1 – 3 family members) • Pre-set bridge supports (2 books or blocks, exactly 20cm apart) at every table before families arrive • Pre-bag build materials — 1 bag per group, sealed until challenge begins • Place Windmill Cards and colored pencils at a Story Share area (chairs in a circle or at tables)

RUN OF SHOW — 3 HOURS

TIME	SEGMENT	WHAT HAPPENS
0:00 – 0:10	Arrival + Gallery	Families arrive and find seats. Students greet at the door. Optional student work gallery near the entrance. Light snacks available. Discussion question cards placed on seats in advance.
0:10 – 0:20	Opening Welcome	Staff introduces the program, William's story, and tonight's agenda.
0:20 – 2:19	Movie Screening	Watch The Boy Who Harnessed the Wind (1 hr 53 min).
2:19 – 2:34	Movie Debrief	Families post sticky note reactions. Whole-group discussion using provided questions. Staff closes with the transition script before moving to tables.
2:34 – 2:50	STEAM Build Challenge	Families move to build tables. Staff introduces the Scrapyrd Bridge Challenge. Groups plan and build for 10 minutes, then test. Staff leads a debrief connecting the challenge to William's story.
2:50 – 3:00	Story Share + Closing	Students complete Windmill Cards (5 min). 2 – 3 volunteers share. Staff closes with a brief reflection. Group photo optional.



PART 1 — WELCOME + MOVIE SCREENING (0:00 – 2:19)

Before Families Arrive

- Confirm screen and Netflix/streaming setup is working, test audio and picture quality.
- Place discussion question cards and sticky notes on every seat.
- If displaying student work, set up the gallery near the entrance so families can browse during arrival.

- Brief all staff on the run of show and their roles for each segment.
- Have a staff member stationed at the door from 0:00 to 0:15 to welcome families and direct them to seats.

Arrival + Gallery (0:00 – 0:10)

Families arrive and find their seats. Students serve as greeters. Light snacks are available. If a student work gallery is set up near the entrance, families can browse briefly before sitting. Discussion question cards are already on seats. families can begin reading them while they settle.

Opening Welcome (0:10 – 0:20)



"Welcome to the Windmill Club Family Night! We are so glad you're here.

For the last 10 sessions, your students have been reading The Boy Who Harnessed the Wind by William Kamkwamba and Bryan Mealer. They've been exploring engineering, wind energy, electricity, and some big questions about what it means to keep going when everything says stop.

Tonight we're going to watch the Netflix film adaptation of the book together. The film is about 2 hours long. As you watch, you'll have a card on your seat with some questions, you don't have to write anything, but they're there to help you watch actively.

After the film, we'll do a short discussion, a hands-on engineering challenge inspired by William's story, and a chance to hear from your student directly.

One thing to watch for tonight: how many times does someone tell William he can't do this? Count them. And then watch what he does.

Let's go to Malawi."

Movie Screening (0:20 – 2:19)

Play the Netflix film: The Boy Who Harnessed the Wind (2019, directed by Chiwetel Ejiofor)



MOVIE DEBRIEF (2:19 – 2:34)

After the film ends, give families 2 minutes to write one reaction to the movie on their sticky note, a word, a phrase, or a sentence, and post it on a visible wall or board near the screen. Then move into whole-group discussion.

Film Discussion Questions

Use only 2 – 3 of these. Let the room's energy guide which ones you choose. The goal is genuine reaction, not a debrief checklist.

For the whole group	Families ask their student
• What moment from the film hit you the hardest? Why? • How many times did someone tell William he couldn't do it? What did he do each time? • The film shows a true story. Knowing that, does it change how you feel watching it? • What does it mean to have a 'crazy' idea? Who decides?	• Which moment in the film matched what you imagined from the book? • What was different from the book? What did the film add or leave out? • Which STEAM lab from our sessions connects most to what you saw tonight? • If William could visit this program, what would you want to show him first? • What in William's story is also true about you?



"William Kamkwamba was 14 years old when he built his first windmill. He had been expelled from school. His family was surviving a famine. He had no electricity, no tools, and no teacher.

What he had was a library book, a junkyard, and a question he couldn't stop asking.

Your students have spent 10 sessions asking the same kind of questions, about wind, electricity, engineering, and what it means to keep building when nothing is working yet.

Now it's your turn to build something. Come find a table with your family."



PART 2 — STEAM BUILD CHALLENGE (2:34 – 2:50)

Why This Challenge?

In the film and the book, William scavenges a junkyard for every part he builds with — no instructions, no hardware store, just ingenuity and whatever was in front of him. The Scrapyard Bridge Challenge puts families in that exact position. The materials look like trash. The task looks impossible. And then someone figures out that rolled newspaper is surprisingly strong. The debrief connects that moment of discovery directly back to William's scrapyard.



STEAM BUILD CHALLENGE — Scrapyard Bridge ⌚ 16 min total

Materials: 3 sheets of newspaper, 5 index cards, 30cm of masking tape (pre-cut), 1 small paper cup, 20 – 30 pennies or paper clips (as weights), ruler

Setup: Each table has 2 hardcover books or wooden blocks placed exactly 20cm apart. These are the bridge supports, families cannot move them.

The Challenge: Build a bridge that spans the 20cm gap using only your newspaper, index cards, and tape. Then load it with pennies, one at a time. The family whose bridge holds the most weight wins.

Phase 1: Predict

Before opening your bag, write down your prediction: how many pennies do you think your bridge will hold? Commit to a number.

Phase 2: Plan

Sketch your bridge design on paper before touching materials. Talk it through: How will you make the newspaper strong enough? What shape holds weight?

Phase 3: Build

Open your bag and build. Staff circulate: "What did you figure out about the newspaper? Why did you choose that shape?"

Phase 4: Test

Place the paper cup on the center of your bridge. Add pennies one at a time. Count aloud. Stop when the bridge collapses or bends below the table surface. Record your number.

Debrief

Staff leads a brief whole-group debrief before moving to Story Share (see script below).

Facilitator Script — Launch



"Come find a table with your family. Each table has a bag of supplies and two books. Don't open the bag yet.

In the film, William doesn't go to a hardware store. He doesn't order parts online. He goes to a junkyard and looks at what's there — broken fan blades, old bicycle parts, scraps of metal — and asks: what could this become?

Tonight, you have a junkyard. It's made of newspaper, index cards, and tape.

Here is your challenge: Build a bridge that spans the gap between those two books using only what's in your bag. Then we're going to load it with pennies, one at a time, until it collapses.

Before you open your bag, write down your prediction: how many pennies do you think it will hold? Commit to a number.

Then spend 2 minutes planning — sketch something, talk it through. What do you know about shapes that hold weight?

Ready? Open your bags."

Facilitator Script — Debrief (3 minutes)



"Hands up — time. Let's hear some numbers. What did your bridge hold? [go around quickly]

Who beat their prediction? Who got crushed? [brief show of hands, laughs]

Now — what did you figure out? What made the difference between a bridge that held 3 pennies and one that held 20? [take 2 – 3 quick answers]

Here's what William understood that his community didn't — yet: the stuff in that junkyard wasn't garbage. It was potential. He looked at a broken bicycle and saw a dynamo. He looked at a tractor fan and saw windmill blades.

You looked at newspaper and figured out it could hold weight. That's the same move.

That's engineering. That's what your students have been doing for 10 sessions."



PART 3 — STORY SHARE + CLOSING (2:50 – 3:00)

Windmill Cards (5 minutes)

Hand out one Windmill Card to each student. (Template in Appendix, print on cardstock if possible.) Students fill in cards while families help clean up build materials.



"Before we wrap up, I want each student to complete their Windmill Card. This is yours to keep — and to share with your family tonight.

The card has three prompts. You have about 4 minutes. Decorate it however you want — it's yours."

Windmill Card Prompts

1. One thing I learned in the Windmill Club that I didn't know before:
2. One way William's story connects to my life:
3. Something I want my family to know about this program:

Closing Circle (5 minutes)

Invite 2 – 3 student volunteers to share one thing from their card. Then close with the reflection below. Keep it brief, families have been here 3 hours and the ending should feel light, not rushed.



"William Kamkwamba stood on a TED stage in 2007 and said seven words: 'I try, and I made it.'"

That's the whole story. You all showed that tonight. You watched. You built. You shared. Thank you for being part of this community, Windmill Students and Windmill Families."

STAFF PREP CHECKLIST

1 Week Before	Day Of
• Confirm Netflix access and projector/screen setup • Check that the film runtime is 1 hr 53 min on your platform — run times can vary slightly by region • Send invitations home to families (date, time, 3-hour length, what to expect) • Print and prep discussion question cards — 1 per family, both sides • Print Windmill Card template — 1 per student, cardstock preferred • Gather Scrapyard Bridge materials — newspaper, index cards, masking tape, pennies or paper clips; bag 1 set per family group • Source 2 hardcover books or wooden blocks per table (bridge supports) • Confirm number of attending families for seating and table setup • Optional: collect 2 – 3 student work samples from sessions 7 – 10 for the arrival gallery	• Test Netflix/streaming + projector before students arrive — confirm audio quality • Set chairs for screening; set build tables before arrival • Place bridge supports (books/blocks, 20cm apart) at every build table • Place pre-bagged build materials at each table — sealed until challenge begins • Place discussion cards and sticky notes on every seat • Place Windmill Cards and colored pencils in the Story Share area • Brief all staff on run of show and their roles • Designate one staff member as door greeter from 0:00 to 0:15 • Start the film on time at 0:20 — the downstream segments depend on it

APPENDIX

A. Movie Discussion Question Cards

Print double-sided on cardstock. One per family. Place on seats before families arrive.

FRONT — Watch For...	BACK — Family Discussion
As you watch the film, notice: • How many times does someone tell William he can't do this? • What does William do every time things go wrong? • Who helps William — and how do they help? • What does electricity mean to William's village?	After the film, talk with your student: • What surprised you most about the film? • What would you have done in William's position? • Has your family ever had to improvise with what you had? • What does perseverance look like in your own life? • What in William's story is also true about you?

B. Windmill Card Template

Print one per student on cardstock. Students complete during Part 3.

MY WINDMILL CARD	
Name: _____	
1. One thing I learned in the Windmill Club that I didn't know before:	
2. One way William's story connects to my life:	
3. Something I want my family to know about this program:	
Decorate the back — this card is yours to keep.	

C. Family Invitation Template Text

You're Invited to Windmill Club Family Night!

DATE: _____

TIME: _____ (Please arrive on time — we start the film promptly.)

LOCATION: _____

Your student has been part of The Windmill Club, an afterschool program built around *The Boy Who Harnessed the Wind* by William Kamkwamba and Bryan Mealer. For 10 sessions, they've been reading, building, experimenting, and discussing big ideas about engineering, energy, and what it means to never stop trying.

Tonight we'll:

- Watch the Netflix film adaptation of the book together
- Discuss the film as a community
- Work on a hands-on engineering challenge inspired by William's scrapyard
- Hear directly from your student about what they've learned

Light refreshments will be provided. All are welcome. Questions? Contact:

D. Optional Gallery Station Headers

If displaying student work near the entrance for arrival browsing (0:00 – 0:20), use these station labels.

Station 1: Who Is William?
William Kamkwamba is the real-world inventor behind tonight's film. He's a farmer's son who built a windmill from scrap during a famine to bring electricity to his village. Look for: How do students describe William? What makes his story universal?

Station 2: Wind Energy + Engineering

William taught himself about wind turbines from a library book. Students explored the same engineering principles — blade angle, swept area, energy transfer. Look for: student windmill designs, data charts, and engineering sketches.

Station 3: STEAM Labs

Students built windmill blades, wired circuits, and tested designs across 10 sessions. Ask your student: what surprised you most during the build?

Station 4: Word Wall

Students learned 50 vocabulary words from the book — from scarce and famine to dynamo and prototype. Ask your student to pick one word and use it in a sentence right now.

Station 5: Story Circle Highlights

Every session included a Story Circle, a discussion about the book and big ideas. Ask your student: which question stuck with them most?

LESSON 1

When Magic Ruled the World

Prologue + Chapter 1 | Pre-read at home

Theme: Setting, culture, curiosity — and questioning what we think we know

 ARRIVAL RITUAL 5 min	 WORD PLAY 10 min	 STORY CIRCLE 15 min	 STEAM LAB 25 min	 SHOUTOUT 5 min
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MATERIALS FOR THIS SESSION

- World map poster or large paper to draw one
- Sticky notes + markers
- Chart paper for Wonder Wall (stays up all 10 sessions)
- Junk bags per group: rubber bands, cardboard scraps, bottle caps, straws, popsicle sticks, tape, foil, paper clips
- Blue + yellow dot stickers for gallery walk vote

PRE-SESSION SETUP (10 minutes of prep before students arrive)

- ☐ Post or draw large world map, mark Malawi
- ☐ Make Wonder Wall: large paper labeled 'THINGS WILLIAM WOULD WONDER ABOUT' stays all 10 sessions
- ☐ Write 5 vocab words on board: scarce, perseverance, superstition, maize, sing'anga
- ☐ Write Big STEAM Question: "What could you build from junk to help your community?"
- ☐ Pre-bag junk materials (1 bag per group of 4–5)


ARRIVAL RITUAL
5 min

"Cross the Line"

Script: Students stand on one side of the room. Say: "I'm going to read some statements. If it's true for you, cross to the other side. No talking required."

- I have ever built something with my hands.
- I have ever had a plan someone thought was crazy.
- I have ever wanted something I couldn't have.
- I have ever learned something on my own (Ex: no teacher, no class).
- I have ever changed someone's mind.

Debrief: Our story teller and main character William would have crossed every one of these lines. His whole story starts with five yes answers.

Movement: Students physically cross the room, no desks, no writing, just bodies + decisions.

 **EDUCATOR NOTE:** If someone stands alone on a side, that's data, not a problem. Don't fill the silence. Let

them own it. You can ask students to share out about their experiences

► **Optional TED Talk** Optional: William's 2007 TED Talk (4 min) [youtube.com/watch?v=G8yKFVPOD6o](https://www.youtube.com/watch?v=G8yKFVPOD6o)
Play after arrival ritual before Word Play. Pause at 2 min: "What one word would you use to describe William right now?"


WORD PLAY

10 min

4-Step Routine | 5 words, ~2 min each

Format: Run student choice activity and then run the 4-Step Routine for each word.

What the room looks like: *Students are on their feet at different spots in the room, moving toward each posted word before it's defined. The room is noisy, students are saying words aloud together, debating pronunciations, reacting to unfamiliar words. There are no worksheets.*

 **STUDENT CHOICE — How do we reveal the words today?**

Let students vote with a show of hands or thumbs before you start:

Option 1: Walk & Peek - words posted around the room, students walk to each one first

Option 2: Card Flip - words face-down on the table, flip one at a time as a group

 **HOW THIS FORMAT WORKS — 4-Step Routine**

 **If students choose: Walk & Peek**

Write all 5 words on separate papers and tape them around the room. YOU SAY: "Before we define anything, walk and find all 5 words. Read each one aloud when you find it. 60 seconds, and go." Students move, find each word, say it aloud. No definition yet. Then call everyone back and run the 4-Step Routine for each word.

 **If students choose: Card Flip**

Write all 5 words on index cards face-down in a line. YOU SAY: "When I flip one, say it aloud together before we do anything else." When a card flips, everyone reads it aloud — the reveal builds suspense. Then run all 4 steps for that word before flipping the next.

 **SAY IT — DEFINE IT — CONNECT IT — USE IT** repeat for all 5 words

Session 1 words: *scarce, perseverance, superstition, maize, sing'anga*

STEP	YOU DO	STUDENTS DO
1 Say It ~20 sec	Show the word (write on board, hold up card, or reveal on wall). Say it once yourself, clearly. Then say: "Say it with me — [word]. Whisper it. Now full voice. One more time."	Repeat the word aloud three times, at different volumes or with different energy depending on your prompt. Everyone says it. No one sits this out.
2 Define It ~30 sec	Read the student-friendly definition aloud. Then immediately restate it in your own words or give a quick example. See the Vocabulary Appendix for the scripted definition for each word.	Listen. Some students will nod, look surprised, or react, that's the signal they're connecting. If a student says 'oh, like...' let them finish. That's the work.
3 Connect It ~45 sec	Ask the Connect It question (see Appendix). Give 5 full seconds of wait time before calling on anyone — silence here is thinking, not failure. Take 2–3 student responses.	Think of a real connection, to their own life, to something in the book, or to the world. Then share it aloud. Short answers are fine: one sentence is enough. No writing.

4 Use It ~25 sec	Give the Use It prompt (see Appendix — prompts are differentiated by grade 6/7/8). Call on one student per grade level, or open it to whoever raises their hand first.	Make a sentence using the word correctly. The sentence has to make sense — it can't just drop the word in randomly. Partners can help each other before sharing with the group.
 EMERGING — for students who need more support For any student who struggles to say a word: break it into syllables and clap as a group. SCARCE = 1 clap. Per-se-VER-ance = 4 claps. No one gets left behind on pronunciation.  ADVANCED — for students ready for more challenge After all 5 words: "Can anyone connect two of today's words in the same sentence?" Write the best one on the board. Example: 'Maize was so scarce that even the sing'anga couldn't explain it.'		
 EDUCATOR NOTE: You don't need to know every word before the session. Read the definition card with students, say 'Let me read this one with you.' Modeling that adults encounter unfamiliar words is useful for middle schoolers.		
 WHAT SUCCESS LOOKS LIKE: Word Play is working when: students say each word without being prompted, someone uses a vocab word in Story Circle without you suggesting it, students are disagreeing about Connect It answers, that debate means they're thinking.		
 STORY CIRCLE 15 min Student voices lead. You ask, they talk. Setup: Sit in a circle, not at tables. Read each question clearly, then be quiet. No right answer. A discussion where students disagree respectfully beats one where everyone agrees fast. Q1: "William says 'Before I discovered the miracles of science, I believed that magic ruled the world.' Think about something you used to believe that you later found out had a scientific explanation. What changed when you found out?" Q2: "William's village trusts the sing'anga to explain illness and bad luck. Is that different from trusting a doctor, a parent, or a coach to explain things you don't understand yet?"		
 STUDENT CHOICE — DISCUSSION — Pick a question <i>Let students vote with a show of hands or thumbs before you start:</i> Option 1: "Based on the prologue and Chapter 1, what do you think might happen in the book. How do you know? Make one prediction and use information from the prologue or Chapter 1 to explain why this is your prediction." Option 2: "The prologue describes the smell, sounds, and heat of Malawi in sensory details. Why do you think the author opens with setting instead of action? What does that choice do to the reader? Where is a place you could describe in great detail?"		
 MOVEMENT: If energy is low: 'Stand up if you think magic and science can coexist. Stay seated if you think one replaces the other.'		



STEAM LAB

25 min

"Scrap Lab Brainstorm"

Big Question: What could you build from junk to help your community?

The Challenge: Technology + Engineering: students practice design thinking, the same process engineers use before they ever pick up a tool.

BRAINSTORM: Recall how William decides he wants to build a windmill. Break students into small groups of 4-5 and say, "As a group, brainstorm at least 5 problems you would want to solve in your community?" After groups have brainstormed, ask groups to share out ideas. Focus on the problems, not the solutions yet.

IMAGINE: Groups of 4–5 get their junk bag. No building yet. Say: "William didn't have a hardware store. He had a junkyard. Look at what's in your bag, what problems do you want to solve? What would you build to solve the problem?" Students sketch 3 possible inventions and label the problem each one solves.

GALLERY SHARE: Groups post sketches on the wall. Gallery walk, students place: blue dot = most community impact, yellow dot = most creative.

KEEP IT: Students/Teachers keep their sketches and post to the Wonder Wall. They return to their best idea in Session 10. This is the brainstorming start.



STUDENT CHOICE IN THE LAB: Teams choose which problem to focus on — there's no required topic. The problem just has to be real.



EMERGING — for students who need more support

For groups who can't start: 'Forget the bag for a second. What's one problem in your school or neighborhood that drives you crazy?' Then: 'Is anything in this bag even remotely connected to that problem?' The connection doesn't have to be obvious. Encourage creativity.



ADVANCED — for students ready for more challenge

After sketching 3 ideas: 'Now make a version 2 of your best sketch, what if you had unlimited materials? What if you had zero materials? Does the core idea still work?'



IF STUDENTS GET STUCK

Likely sticking point: Groups keep saying "I don't know what to build" and the bag sits untouched.

Say this #1: *"Don't think about the bag yet. What's broken in your world right now — something small is fine."*

Say this #2: *"Now just pick one thing from the bag and tell me one thing it could possibly do. A bottle cap could be a wheel. A straw could carry water. One connection, go."*

Quick visual to draw on the board: Write on the board: PROBLEM → MATERIAL → FUNCTION. Example: People can't carry water far → tube/straw → pipe. You don't need a full invention. You need one connection.

If you haven't pre-made anything: *You don't need to pre-sort the junk bags. Randomness is the point, William didn't choose his junkyard parts either.*



WHAT SUCCESS LOOKS LIKE: Groups are arguing about which sketch is better, that debate is the engineering. At least one group makes a connection between a material and a real community problem that surprises you.



SHOUTOUT & SEND-OFF

5 min

Ritual: Lightning Round Shoutouts

What to say: "I'll start: I want to give a shoutout to ____ for _____. Now it's open — anyone can shout out anyone. You have 30 seconds. Go."

Energy Award: Award the student group whose scrap sketch showed the most creative thinking about a real community problem. Post sketches on Wonder Wall.

Preview: Next session: Chapters 2–3 — William loses someone important and discovers something that changes everything.

LESSON 2

A Thing Called Science

Chapters 2–3 | Ch. 2 read aloud in session; Ch. 3 pre-read

Theme: Loss, curiosity, and the moment a person decides to become a scientist

MATERIALS FOR THIS SESSION

- 3 balloons per group
- Wool piece or hair
- Tissue paper torn into small pieces
- Puffed rice cereal (small amount per station)
- Plastic comb or ruler
- Access to running water faucet for Station 2
- Paper + pencils for observations

PRE-SESSION SETUP (10 minutes of prep before students arrive)

- ☐ Set up 3 stations: S1 = balloon + wool + tissue bits; S2 = near faucet + comb; S3 = plate + puffed rice + balloon
- ☐ Write 5 vocab words on board: resilience, curiosity, innovation, tuberculosis, transistor
- ☐ Write Big STEAM Question: "How does electricity move, and can you feel it without touching it?"
- ☐ Bookmark Ch. 2 Uncle John scene for 3-minute in-session read aloud



ARRIVAL RITUAL

5 min

"Two Truths & a Science Fib"

Script: Write 3 science statements on a slip of paper. The sentences should be 2 true, 1 made up. Trade with a partner and try to spot the fib. See example sentences:

Lightning can strike the same place twice. (TRUE)

Humans use only 10% of their brain. (FIB)

Maize is one of the most widely grown crops in the world. (TRUE)

Debrief: *In the book, William thought science was a mystery, until he started asking questions. What's one thing YOU thought was true about the world that turned out to be a myth?*

Movement: *Partners move to find each other. Talking and reading happens standing or in pairs.*

 **EDUCATOR NOTE:** Science fibs work because everyone has them. If a student can't think of a fib, say: 'Pick something that SOUNDS true but isn't. Make me believe it.'



WORD PLAY

10 min

Word Auction | 5 words, ~2 min each

Format: Run step 1 and 2 of the the 4-Step Routine for each word, and then complete the student choice vote and word auction format before completing steps 3 and 4.

What the room looks like: Students are leaning forward with competitive energy. Fingers are raised or fists are out for Rock Paper Scissors. You're playing auctioneer — moving fast, calling bids, keeping it loud and quick. It should feel like a game show, not a lesson.

STUDENT CHOICE — What do we bid with today?

Let students vote with a show of hands or thumbs before you start:

Option 1: Finger Bid - everyone starts with 10 imaginary coins, bid with fingers 1–10

Option 2: Rock Paper Scissors - winner of each RPS round earns the bid

HOW THIS FORMAT WORKS — Word Auction

If students choose: Finger Bid

Tell students: "You have 10 imaginary coins, track on your fingers." Show a word + definition. YOU SAY: "Who thinks THIS word connects most to William's story so far? Bid — but first say one sentence explaining why." Highest finger-bid wins that word. Repeat for all 5.

If students choose: Rock Paper Scissors

Students play RPS in pairs. Winner earns the right to bid on that word, they must say one sentence explaining their connection. Losers can still offer connections after the winner speaks. Keeps everyone involved.

SAY IT — DEFINE IT — CONNECT IT — USE IT repeat for all 5 words

Session 2 words: *resilience, curiosity, innovation, tuberculosis, transistor*

STEP	YOU DO	STUDENTS DO
1 Say It ~20 sec	Show the word (write on board, hold up card, or reveal on wall). Say it once yourself, clearly. Then say: "Say it with me — [word]. Whisper it. Now full voice. One more time."	Repeat the word aloud three times — at different volumes or with different energy depending on your prompt. Everyone says it. No one sits this out.
2 Define It ~30 sec	Read the student-friendly definition aloud. Then immediately restate it in your own words or give a quick example. See the Vocabulary Appendix for the scripted definition for each word.	Listen. Some students will nod, look surprised, or react — that's the signal they're connecting. If a student says 'oh, like...' let them finish. That's the work.
RUN AUCTION	After Step 2 for each word: Say: "Who thinks THIS word connects most to Williams' story? Bid, but first give me one sentence explaining why." Students spend their bid from their ~10 coins. Once spent, those coins are gone. Students with no coins left cannot bid on remaining words.	All students show fingers simultaneously for their bid, no peeking at others first. The highest bid wins that word. If there is a tie: the two tied students play Rock Paper Scissors. Winner confirms their prediction sentence to claim the word. If a student is out of coins: they cannot bid but can still participate in all 4 steps.
3 Connect It ~45 sec	Ask the Connect It question (see Appendix). Give 5 full seconds of wait time before calling on anyone — silence here is thinking, not failure. Take 2–3 student responses.	Think of a real connection — to their own life, to something in the book, or to the world. Then share it aloud. Short answers are fine: one sentence is enough. No writing.
4	Give the Use It prompt (see Appendix —	Make a sentence using the word correctly. The sentence

Use It ~25 sec	prompts are differentiated by grade 6/7/8). Call on one student per grade level, or open it to whoever raises their hand first.	has to make sense — it can't just drop the word in randomly. Partners can help each other before sharing with the group.
 EMERGING — for students who need more support For students who struggle to bid: give them a sentence starter, 'This word connects to William because ____.' Even a partial sentence counts as a valid bid.  ADVANCED — for students ready for more challenge After all 5 words: 'Can anyone argue that ALL five of today's words describe William in Chapter 3? Make the case — one sentence per word.'		
 EDUCATOR NOTE: The auction IS Step 1 (Say It) + preview of Step 2 (Define It). After auctioning all 5, run Steps 3 and 4 for each word. The bidding creates investment so Connect It feels personal.		
 WHAT SUCCESS LOOKS LIKE: Students are arguing about which word matters most to William's story, that's the reading comprehension. The actual bidding process matters less than the students determining why the words are important. At least one student uses a vocab word naturally in Story Circle without being prompted.		
 STORY CIRCLE 15 min Setup: Sit in a circle, not at tables. Read each question clearly, then be quiet. No right answer. A discussion where students disagree respectfully beats one where everyone agrees fast. Q1: "In chapter 3, the adults are surprised that William and Geoffrey can fix radios because they are too young. Has anyone ever been told they were too young to do something? When are you too young to do something and when are you being judged? How do you know?" Q2: "William studies by himself with no internet and no teacher. What made him keep going when most people around him had stopped? When have you had to keep going?"		
 STUDENT CHOICE — DISCUSSION — Pick a question <i>Let students vote with a show of hands or thumbs before you start:</i> Option 1: "Uncle John dies from tuberculosis, a disease that is treatable in the U.S. but wasn't accessible in Malawi. Is that a tragedy, an injustice, or both? What's the difference?" Option 2: "In Chapter 2, William meets Khamba. He says to Socrates, "I'm no friend to a dog" but then starts hanging around with Khamba all the time. Can you be friends with an animal? Why or why not?"		
 EDUCATOR NOTE: If someone shares something about a real loss, sit with it. Don't rush. 'That matters. Thank you.' Then: 'William sat with his loss too, and then he met Khamba. What does that tell us about him?'		
➔ TRANSITION: <i>You just talked about curiosity as a survival tool. Now you're going to feel what William was reading about, electricity moving through objects without touching them directly.</i>		



STEAM LAB

25 min

"Static Electricity Lab"

Big Question: How does electricity move, and can you feel it without touching it?

The Challenge: Students explore static electricity, the same force William wants to understand. Background: when you rub a balloon on hair, electrons transfer. The charged balloon attracts neutral objects without any contact.

STATION 1 — Dancing Tissue: Rub balloon on hair for 10 seconds. Hold 2 inches above tissue bits. Hypothesis first: "I predict ____ will be attracted because ____" Then test. Record: which materials attract? Which don't?

STATION 2 — Bending Water: Turn on a thin stream of water. Rub a comb on your hair for 10-15 sec. Hold near the stream (don't touch). What happens? Draw what you observe. Static charge can bend water without contact.

STATION 3 — Cereal Detector: Pour puffed rice on a plate. Rub a balloon on your hair. Hold near the cereal. What happens? What changes if you rub longer? Record.

DEBRIEF "Electricity flows from high concentration to low, like water running downhill. Where did you see that in today's experiments?" Take 3 answers. Write the best on the Wonder Wall.



STUDENT CHOICE IN THE LAB: Teams choose which station to start at and set their own rotation order.



EMERGING — for students who need more support

For students who can't form a hypothesis: give them a sentence frame — 'I predict the tissue WILL / WON'T move because electricity ____.' The prediction doesn't have to be right. It just has to be a real guess.



ADVANCED — for students ready for more challenge

After all 3 stations: 'What variable would you change to make this experiment more precise? What would you need to control, and what can't you control?'



IF STUDENTS GET STUCK

Likely sticking point: The tissue or cereal isn't moving, student is rubbing but nothing is happening.

Say this #1: "Is the balloon making any crackling sound when you rub it? That's the sound of electrons moving. Try rubbing faster, more surface contact between the balloon and your hair."

Say this #2: "Is the air really humid today? Moisture makes static electricity harder to build up. Try rubbing longer — 20 full seconds — then hold the balloon closer to the material."

Quick visual to draw on the board: Draw on the board: BALLOON (+) ← → TISSUE (neutral). Label: rubbing moves electrons FROM hair TO balloon. Now the balloon has extra electrons and attracts the neutral tissue toward it.

If you haven't pre-made anything: You don't need to pre-test the stations. If a balloon loses its charge, just re-rub it. Charge dissipates — that's part of the science.



WHAT SUCCESS LOOKS LIKE: At least one group is genuinely surprised by the bending water station — that reaction means it's working. Students are comparing results between stations and asking 'why did yours work better?'



SHOUTOUT & SEND-OFF

Ritual: Sentence Starter

What to say: "Complete this sentence — out loud, no writing: 'Today I discovered that ____.'"

5 min

Energy Award: Energy Award for the student who made the most surprising observation during the static lab. Post experiment notes + hypothesis vs. result on Wonder Wall.

Preview: Content note for next session: Chapters 4–5 cover the start of the famine. Give a heads-up the it gets heavy.

LESSON 3

The Famine Begins

Chapters 4–5 | Pre-read at home

Theme: Scarcity, systems, and what happens when everything falls apart at once

MATERIALS FOR THIS SESSION

- Large paper or chart paper (1 per group)
- Markers in multiple colors
- Rulers
- Sticky notes (2 colors)
- Printed or hand-drawn simple Wimbe map template (see setup below)

PRE-SESSION SETUP (10 minutes of prep before students arrive)

- ☐ Draw a simple Wimbe map on chart paper: 5–6 location circles (village center, maize field, library, school, junkyard, water pump)
- ☐ Write 5 vocab words on board: scarcity, anguish, subsistence, famine, deforestation
- ☐ Write Big STEAM Question: "How do you map a crisis — and what does a map tell you that words can't?"
- ☐ Post 2 sticky note colors at each group station



ARRIVAL RITUAL

5 min

"Stand Up If You've Ever..."

Script: Stand up if it's true. Stay standing. Sit when it stops being true.

- Stand if you've ever not had something you needed, not wanted, needed.
- Stay standing if you've ever watched someone else have what you couldn't have.
- Stay standing if you've ever figured out a creative solution when you had nothing to work with.

Debrief: *This is William's story. Some of you just stood through all the statements. That matters.*

Movement: *Students stand and sit, no talking, just physical acknowledgment. The silence does the work.*



WORD PLAY

10 min

Word Sort | 5 words, ~2 min each

Format: Run the 4-Step Routine for each word. You can complete the word sort as a class before or after the 4-Step Routine.

What the room looks like: *Students are huddled in small groups, physically moving word cards into piles and arguing about which category they belong in. The room sounds like a low debate — you hear 'no, because' more than once. You're not at the front. You're circulating.*

STUDENT CHOICE — How do we sort today?

Let students vote with a show of hands or thumbs before you start:

Option 1: Team Sort Race — each team creates their own categories and sorts all 5 words, fastest defensible sort wins

Option 2: Whole Group Gallery — class sorts together on the board, debating each placement before moving on

HOW THIS FORMAT WORKS — Word Sort

If students choose: Team Sort Race

Each team gets 5 word cards (written on index cards or sticky notes). Say: "Create at least 2 categories, name them yourselves. Then sort all 5 words. You have 3 minutes." After time: each team reads their categories and defends one sorting decision that another team might disagree with.

If students choose: Whole Group Gallery

Write all 5 words on the board. Say: "Let's build categories together. What do some of these words have in common?" Students call out connections. Draw columns as categories emerge. Vote on disputed placements — majority rules but minority must explain.

SAY IT — DEFINE IT — CONNECT IT — USE IT repeat for all 5 words

Session 3 words: *scarcity, anguish, subsistence, famine, deforestation*

EMERGING — for students who need more support

For students who can't create categories: give them two starter options — 'causes problems' vs. 'describes feelings.' They can use these or replace them. The goal is sorting, not perfect categories.

ADVANCED — for students ready for more challenge

After sorting: 'Write one sentence that uses THREE of today's words correctly and shows how they're connected to each other in William's story.'

 **EDUCATOR NOTE:** There are no wrong categories. A student who sorts 'deforestation' under 'feelings' and can explain why has done more thinking than a student who sorted it 'correctly' without engaging.

 **WHAT SUCCESS LOOKS LIKE:** Teams are disagreeing about where a word belongs, that debate is the vocabulary instruction. At least one student creates a category name that surprises you.



STORY CIRCLE

15 min

Student voices lead. You ask — they talk.

Setup: Sit in a circle. Read each question clearly, then be quiet. No right answer. A discussion where students disagree respectfully beats one where everyone agrees fast.

Q1: "Chapter 4 shows how the price of fertilizer and government policy made the harvest worse. William is a kid with no power over any of that. What does it feel like to be affected by systems you can't control?"

Q2: "In the famine, "everyone learned the lesson of supply and demand" (pg 82). What is supply and demand? Give examples from the chapter. Can you think of examples of supply and demand in your life or in our world today?"

STUDENT CHOICE — DISCUSSION — Pick a question

Let students vote with a show of hands or thumbs before you start:

Option 1: "William's father decides to sell their food, it's risky but logical. Do you think he made the right call? Use specific evidence from the chapter to support your position."

Option 2: "A famine that kills people is happening while other countries have food to spare. Chapter 5 shows this directly. Do you think a famine is a natural disaster? Why or why not? Do human's have a responsibility to help other's why or why not?"



MOVEMENT: Allow students to move to different parts of the room to debate and discuss questions.



EDUCATOR NOTE: The famine chapters can land hard, and some students have food insecurity at home. Don't skip the content, but stay attentive. If a student goes quiet, check in privately after the session.

➔ **TRANSITION:** *You just talked about how a crisis can be mapped — cause by cause, decision by decision. Now you're going to do that literally. You're going to map the Wimbe crisis on paper.*



STEAM LAB

25 min

"Problem-Solving Design Cycle"

Big Question: How do you design a solution when you have almost nothing?

The Challenge: Engineering Design Process, students apply the same cycle William used: identify the problem, list constraints, brainstorm, prototype. This will also be used in the Session 8 Invention Pitch.

DEFINE THE PROBLEM: As a group, create a map of Wimbe. Think about locations, people, etc. Now: 'Circle the three biggest problems this community faces. Use evidence from the chapters.' No solutions yet, just show on the map who this impacts and where. Everyone's map can be different, but use the text to help create it.

CONSTRAINTS LIST: 'Now list what William doesn't have to solve these problems. For example, no electricity, no money, no tools, one library.' Constraints are posted beside each problem. You should list your own constraints you know.

ASSETS LIST: 'Now list what William does have to solve these problems. For example, dirt, school, junk, what else?' You should list your own ideas of assets.

BRAINSTORM: 'Given ONLY what William has, sketch one possible solution to one problem.' Ideas are the important part. Draw out an idea for a solution.

GALLERY + CONNECT: Post sketches. Gallery walk. Each group leaves a sticky note: "What's strong about this" and "What's the hardest part." After the gallery walk, move the sketches to the Wonder Wall.



STUDENT CHOICE IN THE LAB: Groups choose which of the three problems to solve. No two groups need to tackle the same one.



EMERGING — for students who need more support

For groups paralyzed by the constraints list: 'Forget what he doesn't have for a second. What does William have that nobody mentions? Curiosity. Time. A library. A junkyard. Start there.'



ADVANCED — for students ready for more challenge

After brainstorming: 'Scale it. If William had 10 volunteers and a small budget, how does your solution change?'

IF STUDENTS GET STUCK

Likely sticking point: Groups have circled problems but can't transition into solutions — the constraint list feels like a wall.

Say this #1: *"The constraint IS the design brief. Real engineers call this working with a "resource-constrained environment." William had this problem too.*

Say this #2: *"Pick the smallest version of a solution. Not the whole windmill, just the first blade. What's the smallest thing you could do with what's in the junkyard that moves toward solving this problem?"*

Quick visual to draw on the board: Write on board: PROBLEM → SMALLEST POSSIBLE STEP. Example: No clean water → Pipe = tube → Tube exists in junkyard as bicycle frame tubes. Draw the chain. The solution doesn't have to be complete, it has to have one step at a time.

If you haven't pre-made anything: *You don't need to pre-draw the Wimbe map precisely. A rough sketch with 5–6 labeled circles is enough. Students will add to it and create their own.*

 **WHAT SUCCESS LOOKS LIKE:** Groups are disagreeing about which problem to prioritize, that argument is systems thinking. At least one group connects their solution to a specific material from William's junkyard.



SHOUTOUT & SEND-OFF

5 min

Ritual: Shout Out a Connection

What to say: *"Complete this sentence: 'I want to shout out ____ because today they connected ____.' Could be two ideas, two people, two chapters, two anything, name what they linked together."*

Energy Award: Energy Award for the student who identified the most specific or surprising constraint or asset. Post problem maps on Wonder Wall.

Preview: Next session: Chapters 6–8. Content note: Chapter 7 includes the loss of Khamba (William's dog) and the height of the famine. Brief heads-up.

LESSON 4

The Darkest Days

Chapters 6–8 | Ch. 7 content note: includes loss of Khamba and peak famine

Theme: Survival, grief, and the twenty days that change everything

MATERIALS FOR THIS SESSION

- Strips of paper (2cm x 20cm) for wind testers (5 per student)
- String or yarn (2m per group)
- Rulers
- Tape
- Large paper for wind data chart
- Fan or open window access
- Pencils

PRE-SESSION SETUP (10 minutes of prep before students arrive)

- ☐ Pre-cut paper strips (2cm x 20cm)
- ☐ Set up 3 "wind zones" in the room: near fan/window, middle of room, far corner
- ☐ Write 5 vocab words on board: fragrant, meager, anguish, concealed, cholera
- ☐ Write Big STEAM Question: "How do engineers measure and compare wind energy?"
- ☐ Post large paper chart: 3 columns (Wind Zone / Strip Angle / What It Tells Us)



ARRIVAL RITUAL

5 min

"Would You Rather"

Script: Two choices, you have to pick one. No 'neither.' I'll go first.

- Would you rather: have one extraordinary skill OR be good at everything but not great at anything?
- Would you rather: know the answer OR know how to find any answer?
- Would you rather: build something no one has seen before OR improve something that already exists?

Debrief: *How do you think William would answer these? How do you know? What does that tell us about who he is?*

Movement: *Students physically move left or right for each choice*

 **EDUCATOR NOTE:** Chapter 7 has heavy content. This arrival ritual is intentionally lighter — let students laugh and be present before the discussion asks something harder of them.



WORD PLAY

Vocabulary Relay | 5 words, ~2 min each

10 min

Format: Run the 4-Step Routine for each word, and then the vocabulary relay. Students can choose how to run the relay before

What the room looks like: Teams are on the edge of their seats, one rep standing ready. When you call a word, the rep has 10 seconds. The room watches — it's quiet and competitive. After each answer, the group erupts with agreement or correction.

STUDENT CHOICE — How do teams compete today?

Let students vote with a show of hands or thumbs before you start:

Option 1: First to Stand — fastest correct answer wins the point, anyone can stand up

Option 2: Team Reps — one rep per team per word, teams rotate their spokesperson

HOW THIS FORMAT WORKS — Vocabulary Relay

If students choose: First to Stand

Write all 5 words on the board. Say: "I'll point to a word. First person standing with the correct definition AND a sentence wins the point." Students can stand from anywhere. You keep score. Move fast — 30 seconds max per word.

If students choose: Team Reps

Teams of 3–4. Each team sends a different rep for each word. Rep has 10 seconds to define the word correctly and use it in a sentence. Other teams can challenge — if the challenge is correct, the challenging team gets the point.

SAY IT — DEFINE IT — CONNECT IT — USE IT repeat for all 5 words

Session 4 words: *fragrant, meager, anguish, concealed, cholera*

EMERGING — for students who need more support

For teams who freeze during the relay: give a sentence starter on the board, '[Word] means something like ___, so you might use it when ___.' Having the frame reduces the pressure of recall under time.

ADVANCED — for students ready for more challenge

After the relay: 'Now connect these 5 words to each other. Write one sentence using fragrant, concealed, and cholera correctly, all in the same sentence.'



STORY CIRCLE

15 min

Student voices lead. You ask — they talk.

Setup: Sit in a circle — not at tables. Read each question clearly, then be quiet. No right answer. A discussion where students disagree respectfully beats one where everyone agrees fast.

Q1: In Chapter 6, William is not in proper uniform. Do you believe that William has proper shoes at home? Why or why not? What would you do in that situation?

Q2: Chapter 7 includes a content warning: William makes a heartbreaking decision about Khamba, his dog, because the family can no longer feed him. William says he had no choice. Do you agree?"

STUDENT CHOICE — DISCUSSION — Pick a question

Let students vote with a show of hands or thumbs before you start:

Option 1: "In these chapters, every character is experiencing physical, emotional, and mental hardship. Where do you think the capacity to keep going comes from? Is it character, desperation, or something else?"

Option 2: "Chapter 6 shows William's school conditions, leaking roofs, no resources, children too hungry to learn. Compare that to your own school. What does 'access to education' actually mean when you look at this chapter?"

 **EDUCATOR NOTE:** The Khamba question will land hard for some students, especially those who have pets or have experienced loss. If a student goes quiet or emotional, that's the discussion working. Don't rush it. 'That silence means this story is doing its job.'

➔ **TRANSITION:** *You just sat with the hardest chapters in the book. Now we move forward, because that's what William does. He doesn't stop. He goes to the library.*


STEAM LAB
25 min

"Wind Energy Investigation"

Big Question: How do engineers measure and compare wind energy?

The Challenge: Students investigate how wind speed and direction affect force, using the same principles William learned from his physics books. Engineers measure wind before building turbines, this is called a wind resource assessment.

WIND ZONE TEST: Groups hold paper strips horizontally at arm length in each of the 3 wind zones. Measure the angle the strip deflects (0° = no wind, 90° = strong wind). Record in a chart. Groups compare.

DATA ANALYSIS: "Which zone has the most consistent wind? Which is strongest but gusty? If William was choosing where to put his windmill, which zone would you recommend, and why? Back it with your data."

TURBINE MATH: William's windmill had 3 blades each about 1.2m long. Calculate the total blade span. Then calculate the 'swept area,' the circle the blades make (area = $\pi \times \text{radius}^2$). Larger swept area = more wind captured.

CONNECT (5 min): "Engineering isn't just building, it's choosing WHERE to build. What did your data tell you about where in THIS room a windmill would work best?"

 **STUDENT CHOICE IN THE LAB:** Teams choose which wind zone to test first and design their own recording table.

 EMERGING — for students who need more support

For students who struggle with the deflection angle measurement: 'Don't worry about exact degrees. Just describe what you see: the strip barely moved / moved a little / blew almost straight up. Then we'll convert.' Use qualitative first, quantitative after.

 ADVANCED — for students ready for more challenge

After the data analysis: 'Calculate which wind zone would generate the most electricity per day if the windmill ran for 8 hours. Use your swept area calculation and estimate an energy output using the formula: Power (W) = $0.5 \times \text{air density} \times \text{swept area} \times \text{wind speed}^3$.' (Simplify: assume air density = 1.2, wind speed in m/s.)

IF STUDENTS GET STUCK

Likely sticking point: Paper strips aren't deflecting consistently, different students get different readings in the same zone.

Say this #1: *"That inconsistency IS the data. Write it down. "Results varied between 20–45 degrees" is a real scientific observation. What does it tell you about this wind zone?"*

Say this #2: *"Try holding the strip the same way every time — same height, same arm extension. Control the variable you can control. Engineers call this "standardizing the test method."*

Quick visual to draw on the board: Draw on the board: a hand holding a horizontal strip, then arrows showing deflection at 0°, 45°, and 90°. Label: 0° = calm, 45° = moderate wind, 90° = strong wind. Consistency of hold matters more than precision of angle.

If you haven't pre-made anything: *No fan? Open a window or use a piece of cardboard as a manual fan. The investigation works with any consistent air movement source.*

 **WHAT SUCCESS LOOKS LIKE:** Groups are defending different wind zone recommendations using their data — and disagreeing. That argument is data literacy in action.



SHOUTOUT & SEND-OFF

5 min

Ritual: Written Appreciation

What to say: *"Write one appreciation for someone in this group, don't sign your name. I'll read them all aloud. You can claim yours if you want."*

Energy Award: Energy Award — student who gave the most specific data-backed argument for windmill placement. Post wind data charts on Wonder Wall.

Preview: Next session: Chapter 9, The Library. William's entire journey changes direction.

LESSON 5

The Library & the Dream

Chapter 9 | Pre-read at home

Theme: Knowledge as power — the moment a library book becomes a blueprint

MATERIALS FOR THIS SESSION

- Cardboard scraps
- Straws or pencils (for windmill hub mock-up)
- Tape
- Scissors
- Rulers
- Paper for sketching
- Index cards
- Fan or air blowing (Ex: Air conditioner)

PRE-SESSION SETUP (10 minutes of prep before students arrive)

- ☐ Write 5 vocab words on board: stimulated, reclaimed, dynamo, rotor, improvise
- ☐ Write Big STEAM Question: "Can you build a windmill blade that spins in the wind using only paper and tape?"
- ☐ Clear space for a fan test zone
- ☐ Pre-cut cardboard into 8cm x 3cm strips (3 per group)



ARRIVAL RITUAL

5 min

"Walk Like William"

Script: No talking, just walking. I'm going to describe a situation. Walk in a way that shows how William would feel in that moment.

- Walk like William when he first sees the windmill in the library book.
- Walk like William when people call him misala, meaning crazy.
- Walk like William when he has to leave school
- Walk like William the first morning his windmill lights a bulb.
- Walk like William when he gets to stand on a TED stage for the first time.

Debrief: You just told William's whole story with your body. What changed between those five walks?

Movement: Whole room becomes a stage, kinesthetic engagement, no chairs. Take it seriously. The physical embodiment is the work.

 **EDUCATOR NOTE:** Model the first one yourself. Students who are reluctant will follow when they see you commit to it. Middle schoolers will do it if they see it's genuinely being taken seriously.



WORD PLAY

10 min

4-Step Routine + Story Game | 5 words, ~2 min each

Format: 4-Step Routine + Story Game. Run the 4-Step Routine for each word, and then allow for story game time. For the story game, you can use the words from today's session or all of the sessions so far.

What the room looks like: *Students are moving through all 4 steps together, saying words aloud, debating connections, writing sentences. After all 5 words, students are creating and improvising a story together. The story can be funny, serious, or nonsensical. The goal is for students to be using the words correctly.*



STUDENT CHOICE — How do we run the 4-Step today?

Let students vote with a show of hands or thumbs before you start:

Option 1: Whole Group — everyone tells a story together with each student sharing a sentence that uses one of the vocabulary words

Option 2: Partner Pairs — pairs create a story by alternating who creates a line. After, they share the story with the class.



HOW THIS FORMAT WORKS — 4-Step Routine + Improve Challenge



If students choose: Whole Group

Run the standard 4-Step as a whole group. After, open the floor, and create a circle of the students. As you go around the circle, one student starts telling a story by giving the first sentence using a vocabulary word. Each student after builds on the story.



If students choose: Partner Pairs

After you say and define each word, give pairs a couple of minutes to go back and forth saying one line of a story that uses a vocabulary word. Pairs can write their story down and then share with the class.



SAY IT — DEFINE IT — CONNECT IT — USE IT repeat for all 5 words

Session 5 words: *reclaimed, stimulated, dynamo, rotor, improvise*



EMERGING — for students who need more support

For students who can't improvise a sentence: give them the sentence frame. "Once upon a time, _____" and then provide them guidance as you go. Decrease the number of vocabulary words and allow them to focus on 3 vs 5 in their story.



ADVANCED — for students ready for more challenge

Challenge the students to each create their own story using at least 15 vocabulary words you have learned so far.



WHAT SUCCESS LOOKS LIKE: Students are using vocabulary in sentences that are coherent and understood by other students. When a student doesn't use a word correctly, other students are correcting them and collaborating to create a sentence.



STORY CIRCLE

15 min

Student voices lead. You ask — they talk.

Setup: Sit in a circle, not at tables. Read each question clearly, then be quiet. No right answer. A discussion where students disagree respectfully beats one where everyone agrees fast.

Q1: "William walks into a library for the first time and finds a book that changes his life. Why is access to information like the internet, libraries, books important in the world? What

happens to people like William when it isn't accessible?"

Q2: "William can't afford a dynamo that costs money. He describes how he has to become creative and improvise with his machine. When have you had to figure something out without all the resources you needed?"

STUDENT CHOICE — DISCUSSION — Pick a question

Let students vote with a show of hands or thumbs before you start:

Option 1: "William discovers the dynamo, a device that converts spinning motion into electricity. He's never seen one, but he understands it from a book. Is that actually possible? Have you ever understood something deeply from reading alone and no hands-on experience?"

Option 2: "Chapter 9 is a pivot point in the book. Before it: survival. After it: invention. How do you know this is a pivot point for William? What makes a pivot point in a real person's life, is it an event, an idea, or a decision? When have you ever pivoted?"

 **EDUCATOR NOTE:** The library question can go deep or stay surface, follow the room. If students stay surface, say: "William would have been a farmer without this library. What does that mean for how we build libraries and who we let in?"

➔ **TRANSITION:** *William found his blueprint in a library. Now you're going to build the first piece of the same machine, a windmill blade. You're not following instructions. You're improvising. Just like he did.*



STEAM LAB

25 min

"Improvise It! — First Blade Design"

Big Question: Can you build a windmill blade that spins efficiently using only paper, cardboard, and tape?

The Challenge: Engineering Design Process - blade pitch angle is the key variable in wind turbine efficiency. Real turbines adjust their blade angle (called pitch control) based on wind speed. Students are discovering this constraint firsthand.

THE CHALLENGE: "You have paper, cardboard scraps, tape, and a straw for the hub. Build one blade that spins when you hold it in the fan airstream. No instructions. You figure it out." That's it. Start them.

BUILD: Walk around. Resist helping. Ask questions only: "What's the problem right now? What have you tried? What would change if you bent it differently?" If a blade falls off, say: "William ran into problems. What did he do? What do you do?"

TEST: Each group holds their blade hub in front of the fan for 10 seconds. Count rotations (partner counts). Record: blade angle → rotation count. Try a second blade angle if time allows.

REFLECT: "William called his first windmill a prototype. What does that mean? Was your blade a prototype or a final product? What would version 2 look like? What angle worked best, and why do you think that is?"

 **STUDENT CHOICE IN THE LAB:** Teams choose their own blade shape and angle, there's no required design. Document your choice before testing.

 **EMERGING — for students who need more support**

 **ADVANCED — for students ready for more**

For groups who build a flat blade and get no spin: 'A flat blade pushes air but doesn't capture it. Try tilting it, even 15 degrees. Think of a fan blade: it's never flat. What angle lets air push the blade around instead of through it?'

challenge

After testing: 'Calculate the theoretical swept area of your blade design if you had 3 identical blades mounted at equal intervals. Use: $A = \pi \times r^2$. Now estimate: if a 1m² swept area generates 0.5W of power in 5 m/s wind, what would your design generate?'

IF STUDENTS GET STUCK

Likely sticking point: The blade is built but just wobbles without spinning, it doesn't rotate.

Say this #1: *"The blade needs to be angled, not flat. Look at a real fan blade, it's twisted. Try bending one edge of the cardboard up slightly and the other edge down. Does that change what the air does to it?"*

Say this #2: *"The hub connection might be the problem. Is the blade attached securely but still free to spin? A blade that's glued flat can't rotate. Try attaching it with a loop of tape that acts as a bearing."*

Quick visual to draw on the board: Draw side view: FLAT blade = air pushes straight through = no spin. ANGLED blade = air pushes along the surface = rotation. Draw an arrow showing how angled surfaces redirect airflow into rotational force.

If you haven't pre-made anything: *No fan? Use a piece of cardboard as a manual fan, have a student wave it consistently. The test is less precise but still informative.*

 **WHAT SUCCESS LOOKS LIKE:** Different groups get different results from different blade angles — that variation is your teaching moment. Ask: 'Why did the 45° angle outperform the 30°?' Students who can articulate it understand aerodynamics.



SHOUTOUT & SEND-OFF

5 min

Ritual: Role Shoutout

What to say: *"Shout out a teammate by what they contributed — not who they are. 'I shout out ____ for being the person who ____ when ____.' The blank has to be a specific moment from today."*

Energy Award: Energy Award for the student whose blade design showed the clearest engineering reasoning. Store blades labeled with names, they come back.

Preview: Next session: Chapter 10: Harvest Time. William finally has what he needs. The junkyard opens up.

LESSON 6

Harvest Time & the Scrapyard

Chapter 10 | Pre-read at home

Theme: Resourcefulness, improvisation, and collecting what you need

MATERIALS FOR THIS SESSION

- Cardstock or cereal box cardboard (1 sheet per group)
- Wooden dowels or pencils (1 per group)
- Fan
- Tape + scissors
- Metric ruler
- String + small paper cups
- Student blades from Session 5 (stored)

PRE-SESSION SETUP (10 minutes of prep before students arrive)

- ☐ Retrieve Session 5 blades from storage
- ☐ Set fan up at one end of the room
- ☐ Write 5 vocab words on board: laden, significant, resemble, welded, booted
- ☐ Write Big STEAM Question: "How does blade angle affect how much wind energy your windmill captures?"
- ☐ Mark blade angle options on board: 30°, 45°, 60°



ARRIVAL RITUAL

5 min

"Stand, Sit, Walk"

Script: I'm going to read a series of statements. Stand if you agree, sit if you disagree, walk to the center if it depends.

- Building something by yourself with no instructions is better than following a blueprint
- If a plan fails partway through, the right move is to start over
- It is better to not start something unless you are 100% sure you can do it
- The people who doubt you most loudly are usually the most interested in what you're doing.

Debrief: How would William respond to each of these? Why do you think this?

Movement: Students are standing and moving for every statement — no chairs yet.



EDUCATOR NOTE: This arrival primes students for the Q2 discussion about permission vs. independence. Let the center-walkers be discussion leads during Story Circle.



Word Sort | 5 words, ~2 min each

WORD PLAY

10 min

Format: Word Sort — run the 4-Step Routine for each word. ~2 min per word.

What the room looks like: *Students are sorting word cards into categories they named themselves, debating placements. You hear 'laden belongs with emotion, not action' — that argument is the instruction.*

STUDENT CHOICE — How do we sort today?

Let students vote with a show of hands or thumbs before you start:

Option 1: Team Sort Race — each team creates categories and sorts all 5 words, fastest defensible sort wins

Option 2: Whole Group Gallery — class sorts together on the board, debating each placement

HOW THIS FORMAT WORKS — Word Sort

If students choose: Team Sort Race

Each team gets 5 word cards. Say: "Create at least 2 categories, name them yourselves. Sort all 5 words. 3 minutes." After: each team reads categories and defends one sorting decision another team might dispute. Add the word categories to the Wonder Wall.

If students choose: Whole Group Gallery

Write all 5 words on the board. Say: "What do some of these words have in common?" Students call out connections. Draw columns as categories emerge. Vote on disputed placements, majority rules but minority must explain. Add the word categories to the Wonder Wall.

SAY IT — DEFINE IT — CONNECT IT — USE IT repeat for all 5 words

Session 6 words: *laden, significant, resemble, welded, booted*

EMERGING — for students who need more support

For students who can't create categories: start with 'describes a physical thing' vs. 'describes a feeling or quality.' Simple concrete categories are fine.

ADVANCED — for students ready for more challenge

After sorting: 'Can you write one sentence that uses welded, laden, and improvise correctly — and makes it clear all three apply to William in Chapter 10?'

 **EDUCATOR NOTE:** The word 'welded' connects directly to the physical windmill parts William collects. When you define it, say: 'Point to a moment in Chapter 10 where something is welded or could be welded.' This is an example of text-to-word grounding.



STORY CIRCLE

15 min

Student voices lead. You ask — they talk.

Setup: Sit in a circle, not at tables. Read each question clearly, then be quiet. No right answer. A discussion where students disagree respectfully beats one where everyone agrees fast.

Q1: "Chapter 10 shows William going to the scrapyard every day instead of school. Is that a valid education, or is William making the best of a bad situation? Are those different things?"

Q2: "William collects different items to solve specific engineering problems. Find two specific items from Chapter 10 and explain what engineering problem each one solves."

STUDENT CHOICE DISCUSSION — Pick a question

Let students vote with a show of hands or thumbs before you start:

Option 1: "William's worst fear is ending up like his father. Is that fear a motivation or a burden? Can fear push you toward something good?"

Option 2: "At the end of the chapter, Gilbert helps William buy the dynamo. Why do you think Gilbert did this? Would you have done the same thing? What is Gilbert's motivation to help William?"

 **MOVEMENT:** After Q1: 'Stand if you think learning on your own counts as a valid education. Stay seated if you think a classroom is required. Walk to the middle if it depends on what you're learning.' Middle people must state their condition.

 **EDUCATOR NOTE:** Chapter 10 has a powerful emotional arc, William goes from feeling like a criminal hiding at school to feeling like an explorer in the scrapyard. If students are engaged, let them find that arc themselves. Don't name it for them.

→ **TRANSITION:** *William spent Chapter 10 collecting every part. Now you're going back to your Session 5 blade — to test whether your angle choice was right. The data is about to tell you something.*

**STEAM LAB**
25 min

"Build a Windmill — Day 1 (Blade Testing)"

Big Question: How does blade angle affect how much wind energy your windmill captures?

The Challenge: *Engineering Design, blade pitch angle is the key variable in wind turbine efficiency. Students use data from their Session 5 blade to improve their design. This mirrors William's Chapter 10 process: collect what you need, then test.*

RETRIEVE + REVIEW: Get your Session 5 blade. What angle did you choose? Record it. This is your version 1 data starting point.

SPIN TEST: Hold your Session 5 blade + straw hub in front of the fan. A partner watches and counts how many times the blade completes a full rotation in 10 seconds. Record the angle and rotation count. your hub in front of the fan. Count rotations in 10 seconds (partner counts). Attach a paper cup with string, does it lift? Record: angle → rotations → cup lifted? (Y/N)

LIFT TEST: Wrap a piece of string around the straw hub a few times. Hang a small paper cup from the end of the string. Hold the windmill in front of the fan again. As the hub spins, it should wind the string and slowly lift the cup. Record whether it lifts (Y/N).

REDESIGN: Based on your data: "What would you change?" Cut new blades from cardstock. Test a different angle, 30°, 45°, or 60°, whichever you haven't tried. Record results.

ASSEMBLE FULL WINDMILL INSTRUCTIONS: Here's how to build the full windmill:

Hub: Use a pencil or wooden dowel as your central axle. This is what spins and winds the string. If you used a straw in testing, upgrade to a pencil now — it's stronger.

Blades: Attach 3 blades to the pencil, spaced evenly around it (think 3 points of a triangle, 120° apart). Use tape to fix each blade at your best tested angle. All 3 blades should angle the same direction so they catch wind consistently.

String: Wrap a 40cm piece of string around the middle of the pencil 4–5 times. Tape the starting end so it doesn't slip. Let the tail hang down.

Cup: Tape or tie the paper cup to the end of the string.

Test it once: Hold the assembled windmill in front of the fan. Does it spin? Does the cup lift? If yes — it's ready to store.

Store carefully labeled with your name, this windmill returns in Session 9 for the final test.

 **STUDENT CHOICE IN THE LAB:** Teams choose their second blade angle, the only constraint is it must differ from the first test.

 EMERGING — for students who need more support

For groups whose blades don't spin: 'Before we change the design, let's diagnose. Is the blade attached so it can actually rotate? Is the hub frictionless? Start with the mechanical connection before changing the angle.'

 ADVANCED — for students ready for more challenge

After testing: 'Graph your results: x-axis = blade angle, y-axis = rotation count. Draw a curve connecting your two data points and predict where the optimal angle might be. What would you test next to confirm?'

 IF STUDENTS GET STUCK

Likely sticking point: The cup doesn't lift even when the windmill is spinning fast.

Say this #1: *"Is the string wrapped correctly? Spinning must tighten the string, not unwind it. Check which direction the hub spins and make sure the string wraps in that direction."*

Say this #2: *"Try a lighter load, cut the paper cup in half. Find the maximum weight your windmill can lift by adding small pieces of paper to the cup one at a time."*

Quick visual to draw on the board: Draw on board: HUB spinning → STRING wrapping → CUP rising. The direction of spin determines which way the string must wrap. If the string unwraps, the cup will never lift.

If you haven't pre-made anything: *No pencils for hubs? A straw works. No paper cups? Any small container that can hang from a string will do.*

 **WHAT SUCCESS LOOKS LIKE:** Students are comparing their two blade angle results and arguing about why one outperformed the other. That argument is the physics lesson.



SHOUTOUT & SEND-OFF

5 min

Ritual: One Word Send-Off

What to say: *"Go around the circle. One word that describes how you feel leaving today. I'll go first."*

Energy Award: Energy Award goes to the student whose blade design showed the clearest engineering reasoning, not just the highest spin count. Store windmills carefully, they return in Session 9.

Preview: Next session: Chapter 11, The Windmill Comes to Life. William puts it all together.

LESSON 7

The Windmill Comes to Life

Chapter 11 | Key passages read aloud in session

Theme: From blueprint to prototype — the build begins

MATERIALS FOR THIS SESSION

- Cardstock (additional sheets for groups who want to refine)
- 9V batteries (1 per group)
- Alligator clip wires (4 per group)
- LED lights (1 per group)
- Index cards
- Pencils

PRE-SESSION SETUP (10 minutes of prep before students arrive)

- ☐ Write 5 vocab words on board: assembling, cumbersome, prototype, voltage, transformer (Ch. 11: assembling pg 187, cumbersome pg 189 and 197, voltage pg 193, transformer pg 193)
- ☐ Write Big STEAM Question: "What does the windmill assembly process tell us about engineering?"
- ☐ Bookmark pp.187–195 for read-aloud during Story Circle
- ☐ Set out circuit materials at each station



ARRIVAL RITUAL

5 min

"Telephone Engineering"

Script: Line up in groups of 5. The last person gets a paper with a simple windmill sketch. They describe this picture using only words to the next person. This goes on until the first person in line draws what they heard.

- Compare the original sketch to what was drawn.
- What information was lost? What was preserved?

Debrief: *Engineers write specific drawings exactly because of what you just experienced. William had to figure this out from a book, no teacher, no blueprint, no one to ask.*

Movement: *Students line up and turn around so they can't see each other's faces. Descriptions pass down the line.*

 **EDUCATOR NOTE:** The point isn't accurate drawing, it's about how information changes through verbal transmission. Point this out after: 'This is why engineering drawings exist. Words aren't enough.'



WORD PLAY

Definition Drama | 5 words, ~2 min each

Format: Definition Drama — run the 4-Step Routine for each word and then have students complete the drama exercise for each word.

10 min

What the room looks like: Pairs are huddled planning their scene. The performing pair comes to the front. The class watches and calls out guesses. The room oscillates between performance and argument — 'No, that's not what cumbersome means!' That argument is the instruction.

 **SAY IT — DEFINE IT — CONNECT IT — USE IT** repeat for all 5 words

Session 7 words: assembling, cumbersome, prototype, voltage, transformer

 **STUDENT CHOICE — How do we perform today?**

Let students vote with a show of hands or thumbs before you start:

Option 1: Silent Scene — pairs act out the word with no words, group guesses the words

Option 2: One-Sentence Pitch — one person pitches the word in one sentence without saying it, this is like Catchphrase

 **HOW THIS FORMAT WORKS — Definition Drama**

 **If students choose: Silent Scene**

Run the 4-Step first. Then pairs get a secret word and 2 minutes to plan a silent scene demonstrating it. They perform with no words and no mouthing words. Group guesses. The pair confirms and explains how their scene showed the word.

 **If students choose: One-Sentence Pitch**

Run the 4-Step first. One person has 10 seconds to construct one sentence that gets someone else to say the target word — without using the word or any part of it. Group tries to guess the word from the sentence alone.

 **EMERGING — for students who need more support**

For students who freeze during the performance: let them work with a partner who leads the scene while they mirror or react. Being part of the scene counts as full participation.

 **ADVANCED — for students ready for more challenge**

After all 5 words: 'Can you explain why a transformer is necessary for William's windmill, using the word voltage in the same explanation? One paragraph, both words, must make technical sense.'

 **WHAT SUCCESS LOOKS LIKE:** The group catches at least one incorrect guess and the guesser has to explain why the scene pointed them to the wrong word. That correction is the vocabulary lesson.



STORY CIRCLE

15 min

Student voices lead. You ask — they talk.

Setup: Sit in a circle, not at tables. Read each question clearly, then be quiet. No right answer. A discussion where students disagree respectfully beats one where everyone agrees fast.

Q1: "Chapter 11 describes the windmill assembly step by step. William has to adjust as he builds to make sure the windmill works. How does he adjust? What do you think would have happened if he hadn't adjusted?"

Q2: "William assembles the windmill while his family and neighbors watch and doubt. Should he have asked for permission first, or was acting independently the right call? Who gets to decide what someone builds in their own yard?" You can also ask this question about William borrowing his father's radio.

STUDENT CHOICE DISCUSSION — Pick a question

Let students vote with a show of hands or thumbs before you start:

Option 1: "The word cumbersome means large, heavy, and difficult to manage. Chapter 11 shows the windmill being cumbersome in every physical sense. When has something you were building or working on been cumbersome, and what kept you going?"

Option 2: "William is called 'misala' (crazy) by neighbors who watch him build the windmill. When is being called crazy a warning sign, and when is it a signal that you're doing something that matters?"

 **MOVEMENT:** After Q2 (permission vs. independence): 'Stand up if you think William should have asked permission. Stay seated if acting independently was correct.' Then: 'Can the seated students convince one standing student? You have 60 seconds.'

 **EDUCATOR NOTE:** Read aloud the assembly scene from Chapter 11 before Q1 — even 3 minutes grounds the discussion in the text. Students who pre-read will catch details; students who didn't will be able to participate.

➔ **TRANSITION:** *William's windmill is going up in the book. Now you're going to explore the force that windmill will generate, electricity. Specifically: what happens when current flows through a circuit.*



STEAM LAB

25 min

"Introduction to Circuits"

Big Question: How does electricity flow, and what does William need to understand before his windmill can power anything?

The Challenge: *Physics, before the windmill can power lights, William needs to understand circuits. This session introduces series circuits as preparation for the parallel circuit work in Session 8. Students build the foundation William built from library books.*

WHAT IS A CIRCUIT?: Introduce: a circuit is a closed loop that electricity travels through. Show the materials. Say: "Your challenge: make this LED light up using the battery and wires. No instructions. Figure it out."

BUILD A SERIES CIRCUIT: Provide the students time to try and build their circuit. If students get stuck, see the stuck box below. Both leads of the LED must be connected. Record: did it light? How long did it take to figure out? What did you try first?

EXPLORE BREAKS: Now disconnect one wire anywhere in the circuit. What happens? Reconnect. Disconnect somewhere else. Record: what does a broken circuit do?

CONNECT TO WILLIAM: "William read about voltage and circuits in his library books before he ever built anything. What did you just learn by doing that he had to imagine from words alone? Which is harder? Can someone pretend to explain to William how a circuit works?"

EMERGING — for students who need more support

For groups who can't get the LED to light: 'Check the battery terminals — one is + and one is -. Trace your wire path with your finger. Where is the loop broken?' Tracing before adjusting saves time.

ADVANCED — for students ready for more challenge

After the series circuit works: 'Now try adding a second LED to your circuit. What happens to the brightness? What does that tell you about how voltage distributes through a series circuit?'

IF STUDENTS GET STUCK

Likely sticking point: The LED isn't lighting up — group has connected wires but nothing happens.

Say this #1: *"Check the LED orientation — it only works one direction. The long leg is positive, the short leg is negative. Make sure the long leg connects toward the + terminal of the battery."*

Say this #2: *"Is the circuit actually closed? Trace every wire with your finger from the battery + terminal, through the circuit, back to the battery - terminal. Find where the loop breaks."*

Quick visual to draw on the board: Draw on board: BATTERY (+) → WIRE → LED → WIRE → BATTERY (-). Label it a loop. If any connection is missing, the loop breaks and electricity stops.

If you haven't pre-made anything: *No alligator clips? Strip the ends of any wire and twist them together to the LED legs. It works with bare copper contact.*

 **WHAT SUCCESS LOOKS LIKE:** At least one group discovers that the LED direction matters and reverses it — that moment of 'oh!' is the physics lesson. Groups are explaining to each other why the circuit broke.



SHOUTOUT & SEND-OFF

5 min

Ritual: Appreciation Wall

What to say: *"Write one appreciation for someone. Think about someone who did or said something today you want to recognize. Use their name, but leave yours off. Post it on the wall. Anyone can claim theirs if they want to." (Option - Assign each student another student to appreciate)*

Energy Award: Give to the student who gave the clearest explanation of how the circuit works. Post circuit diagrams on Wonder Wall.

Preview: Next session: Chapter 12, Bigger and Brighter. Circuits, improvements, and the invention that prevents a fire.

LESSON 8

Bigger and Brighter

Chapter 12 | Pre-read at home

Theme: Circuits, safety, and the engineering of reliability

MATERIALS FOR THIS SESSION

- 9V batteries (1 per group)
- Alligator clip wires (7+ per group)
- LED lights (2+ per group)
- Index cards
- Pencils
- Cardboard strips

PRE-SESSION SETUP (10 minutes of prep before students arrive)

- ☐ Set out circuit kits (battery + 6 wires + 2 LEDs per group)
- ☐ Write 5 vocab words on board: diode, nonconductive, ferocious, circuit breaker, reliable
- ☐ Write Big STEAM Question: "What's the difference between a series circuit and a parallel circuit — and which one would William choose?"
- ☐ Draw simple series vs. parallel diagrams on board for reference



ARRIVAL RITUAL

5 min

"Speed Networking"

Script: You have 30 seconds with each partner. Question: 'What's one thing you've fixed that most people would have thrown away?' Switch when I call it.

- Round 1: What have you fixed?
- Round 2: What's the most creative repair you've ever seen?
- Round 3: If you could fix ONE broken thing in your school or neighborhood, what would it be?

Debrief: *William fixed everything he touched. And then he turned fixes into inventions. Does anyone see the line between those two things?*

Movement: *Students rotate quickly — standing, moving, different partners each round.*

 **EDUCATOR NOTE:** If a student says 'I've never fixed anything,' expand the definition: 'Have you ever put something back together after it broke? Taped something? Rerouted something?' Expanding the definition opens more students in.



Word Auction | 5 words, ~2 min each

Format: Run the first two steps of the 4-Step Routine for each word and then host the

WORD PLAY

10 min

word auction.

What the room looks like: *Competitive energy, fingers raised, bids called. But after each win, there's a quieter moment where the winner must defend their choice with a specific line from Chapter 12. The room shifts between noise and focus.*

STUDENT CHOICE — What are we bidding on today?

Let students vote with a show of hands or thumbs before you start:

Option 1: Most Important to William — bid on the word you think matters most to his engineering problem

Option 2: Most Important to You — bid on the word that connects most directly to your own life

HOW THIS FORMAT WORKS — Word Auction

If students choose: Most Important to William

Show each word + definition. YOU SAY: "Which word is most critical to William's windmill working safely? Bid — but when you win, you must point to a specific part of Chapter 12 that proves it." Highest bid wins. Winner defends with text evidence.

If students choose: Most Important to You

Show each word + definition. YOU SAY: "Which word connects most directly to your own life — a situation, a person, an experience?" Bid — when you win, you owe one real connection sentence. No making things up.

SAY IT — DEFINE IT — CONNECT IT — USE IT repeat for all 5 words

Session 8 words: *diode, nonconductive, ferocious, circuit breaker, reliable*

EMERGING — for students who need more support

For students who can't find a text connection: 'The evidence doesn't have to be a quote — it can be a description of a scene. Tell me what Chapter 12 shows that makes this word matter.' Summary counts as evidence.

ADVANCED — for students ready for more challenge

After the auction: 'Write a safety manual entry for William's windmill — two sentences using nonconductive, diode, and circuit breaker correctly and technically.'

 **EDUCATOR NOTE:** 'Circuit breaker' is exactly what William builds from a nail and wire. When you get to it, say: 'He invented this. With a nail. Point to where he does this in Chapter 12.'



STORY CIRCLE

15 min

Student voices lead. You ask — they talk.

Setup: Sit in a circle — not at tables. Read each question clearly, then be quiet. No right answer. A discussion where students disagree respectfully beats one where everyone agrees fast.

Q1: "Chapter 12 introduces series vs. parallel circuits. Find William's explanation. Why does the parallel circuit matter for his windmill system specifically, and what would happen if he used series instead?"

Q2: "William builds a circuit breaker from a nail and a piece of wire because he has no other option. What does that improvisation tell us about the relationship between necessity and innovation?"

STUDENT CHOICE DISCUSSION — Pick a question

Let students vote with a show of hands or thumbs before you start:

Option 1: "William's windmill almost caused a fire before he invented the circuit breaker. What's a safety problem you've identified, or noticed that nobody fixed, in your own environment? What would a solution look like?"

Option 2: "The word 'reliable' means consistently working as expected under pressure. Is William reliable? Use three specific moments from the book so far to make your case."

 **MOVEMENT:** After Q1 (series vs. parallel): 'Everyone who thinks parallel is always better — stand. Everyone who thinks it depends on the situation — stay seated.' The seated group has to state their condition before anyone sits down.

 **EDUCATOR NOTE:** If students haven't pre-read Chapter 12, do a 2-minute summary before Story Circle: 'William realizes his windmill is outputting too much voltage and might cause a fire. He invents a circuit breaker from a nail. Now, let's discuss.'

→ **TRANSITION:** *You just learned why parallel circuits matter. Now you're going to build both and see the difference yourself.*



STEAM LAB
25 min

"Series vs. Parallel Circuit Lab"

Big Question: What's the difference between a series and a parallel circuit — and which one would William choose?

The Challenge: *In a series circuit, current follows one path; one broken connection kills everything (Think back to yesterday's circuit). In a parallel circuit, current has multiple paths, one failure doesn't stop the others. This is exactly why William needed to understand the difference. You are going to build both again today.*

BUILD SERIES: Create a series circuit where you light 2 lights in a loop. (Note: This should look like Wire battery → LED1 → LED2 → back to battery (one loop).) Both LEDs should light. Now disconnect one LED wire. What happens to the other? Record.

BUILD PARALLEL: Create a parallel circuit where you create two separate loops that both light. (Note: This should look like Wire battery → split → LED1 AND LED2 in separate loops → back to battery.) Both should light. Disconnect one LED. What happens to the other? Record.

SEE BELOW FOR STEP BY STEP INSTRUCTIONS FOR SERIES VS PARALLEL CIRCUIT BUILDING

ANALYZE (5 min): "William's village wanted to charge phones, power lights, and pump water, all at once. Which circuit supports that? Which fails if one thing breaks?" Students write or say their answer with a reason.

CIRCUIT BREAKER DEMO (4 min): "William built a device that cuts power before a fire starts. What do you think it does to the circuit when it triggers? Draw your hypothesis on an index card, then check it against Chapter 12."

 EMERGING — for students who need more support

For groups who can't get either LED to light: 'Check the battery terminals first — one is + and one is -. Trace your wire path with your finger. Where is the loop broken?'

 ADVANCED — for students ready for more challenge

Can you create more parallel circuits or connect two different circuits? Allow the students to try and build the most parallel circuits or connect series circuits.

IF STUDENTS GET STUCK

Step by Step for Series Circuit (Students will use 3 wires)

Step 1: Clip one wire from the **positive (+) terminal** of the battery to the **long leg (+)** of LED1.

Step 2: Clip a second wire from the **short leg (-)** of LED1 to the **long leg (+)** of LED2. This connects the two LEDs to each other in the chain.

Step 3: Clip a third wire from the **short leg (-)** of LED2 back to the **negative (-) terminal** of the battery. This completes the loop. Both LEDs should now be lit. If one isn't: check the LED direction — long leg toward the positive side, short leg toward negative.

Step by Step for Parallel Circuit (Students will use 4 wires)

Step 1: Clip one wire from the **positive (+) terminal** of the battery to the **long leg (+)** of LED1.

Step 2: Clip a second wire from the **positive (+) terminal** of the battery to the **long leg (+)** of LED2. Both LEDs are now connected to the positive side of the battery — that's the "split."

Step 3: Clip a third wire from the **short leg (-)** of LED1 back to the **negative (-) terminal** of the battery.

Step 4: Clip a fourth wire from the **short leg (-)** of LED2 back to the **negative (-) terminal** of the battery. Each LED now has its own complete loop: battery+ → LED → battery-. They share the battery but each has an independent path. Both LEDs should be lit. If one isn't: check that LED's direction independently — the two LEDs don't affect each other.

Likely sticking point: The parallel circuit has both LEDs connected but only one lights up.

Say this #1: "Check that each LED has its OWN complete path from + to -. In parallel, each branch should be independent. Trace each LED's path separately — does each one have a complete loop?"

Say this #2: "The polarity of the LED matters — it only works one direction. If an LED isn't lighting up, try flipping it. LEDs have a long leg (positive) and a short leg (negative)."

Quick visual to draw on the board: Draw on board: series = one-lane road. Parallel = two side-by-side roads. Block one lane in series = all traffic stops. Block one lane in parallel = other lane still flows.

If you haven't pre-made anything: No alligator clips? Strip the ends of any wire and twist them together. No LEDs? Small bulbs from a flashlight work the same way.

 **WHAT SUCCESS LOOKS LIKE:** At least one group discovers that disconnecting one LED in the series circuit stops the other — and reacts with genuine surprise. That moment of discovery is the lesson.



SHOUTOUT & SEND-OFF

5 min

Ritual: Group Debrief

What to say: "Look at the circuit diagrams. Don't tell me which is best, tell me WHY the parallel circuit is the right choice for William. What combination of reliability and safety makes it the answer?" Hang up student circuit

✂ **Energy Award:** Award the student who gave the clearest explanation of why parallel beats series for William's windmill. Post circuit diagrams on Wonder Wall.

Preview: Next session: Chapters 13–14, the restless inventor, Dr. Mchazime, and the world discovers Wimbe.

LESSON 9

The World Discovers Wimbe

Chapters 13–14 | Pre-read at home

Theme: Legacy, advocacy, and what happens when the world pays attention

MATERIALS FOR THIS SESSION

- Student windmills from Session 6
- Cardboard tubes (paper towel rolls) or wooden skewers for towers (2 per group)
- Tape + extra cardboard
- Fan
- String + paper cups (same as Session 6)
- Metric rulers
- Scissors
- Pennies or small weights for load test

PRE-SESSION SETUP (10 minutes of prep before students arrive)

- ☐ Retrieve student windmills from Session 6 storage
- ☐ Set up fan at one end of the room
- ☐ Write 5 vocab words on board: transmitter, innovation, eloquent, flocked, advocate
- ☐ Write Big STEAM Question: "Can you improve your windmill design to lift more weight than in Session 6?"
- ☐ Mark a testing zone near the fan



ARRIVAL RITUAL

5 min

"Difference Makers Brainstorm"

Script: Give every student a sticky note and a marker. Say: "Write down one person — real, historical, or from something you've read or watched, who advocated for someone else and changed their life because of it. It doesn't have to be famous. It just has to be real to you. You have 90 seconds. Don't put your name on it." When time is up, students walk to the Wonder Wall and post their sticky note anywhere on it

- Silent gallery walk — 2 minutes, no talking, read as many as you can
- When the walk ends: find one that isn't yours and stand next to it
- Be ready to read it aloud and say one word about why it stopped you

Debrief: *Dr. Mchazime is on almost nobody's list when people think about who changed the world. He wasn't famous. He didn't build anything. He just stopped, paid attention, and used his platform to open a door. That's the whole job of an advocate. William's windmill existed before Dr. Mchazime arrived — but the world didn't know about it yet.*

Movement: *Students are up and moving for the full ritual — writing at their seats, walking to the wall, circulating during the gallery walk, finding a note to stand next to.*



WORD PLAY

10 min

4-Step Routine | 5 words, ~2 min each

Format: Run the 4-Step Routine for each word and integrate the student choice options of text connection or personal connection to step 3.

What the room looks like: Run the 4-Step cleanly. This session's words carry emotional weight — 'eloquent' and 'advocate' describe what Dr. Mchazime does for William. Students who've been here all sessions will hear these words differently.



STUDENT CHOICE — How do we connect today?

Let students vote with a show of hands or thumbs before you start:

Option 1: Text Connection — connect each word to a specific moment from Chapters 13–14

Option 2: Personal Connection — connect each word to something real in your own life or community



HOW THIS FORMAT WORKS — 4-Step Routine



If students choose: Text Connection

For Connect It: students must point to a specific scene or moment from the reading. "I know flocked belongs to Chapter 14 because ____." Text-to-text connections. Good for students who pre-read.



If students choose: Personal Connection

For Connect It: students connect each word to their own experience. "Advocate reminds me of when ____." No book required — full credit for genuine personal connection.



SAY IT — DEFINE IT — CONNECT IT — USE IT repeat for all 5 words

Session 9 words: transmitter, innovation, eloquent, flocked, advocate



EMERGING — for students who need more support

For students who haven't read Chapters 13–14: offer them Option 2 automatically, personal connections require no text knowledge. They still participate fully.



ADVANCED — for students ready for more challenge

After all 5 words: 'Use advocate AND eloquent in one sentence about someone — alive or historical — who you think actually changed something. It can't be William.'



EDUCATOR NOTE: The word 'advocate' connects directly to what Dr. Mchazime does for William in Chapter 14. When you define it, say: 'Dr. Mchazime advocates for William — and it changes everything. That's what this word looks like in action.'



WHAT SUCCESS LOOKS LIKE: At least one student's connection to 'advocate' names a real person or situation — that specificity means the vocabulary has become personal, not academic.



STORY CIRCLE

15 min

Student voices lead. You ask — they talk.

Setup: Sit in a circle — not at tables. Read each question clearly, then be quiet. No right answer. A discussion where students disagree respectfully beats one where everyone agrees fast.

Q1: "In Chapter 13, William feels the need to make something even bigger. He has different ideas and some are successful and others are failures. Is failing always a part of science? Why or why not?"

Q2: "Chapter 14 describes when Dr. Hartford Mchazime arrives and meets William. Find

three specific actions he takes on William's behalf. How is being an advocate different from just being sympathetic?"

STUDENT CHOICE DISCUSSION — Pick a question

Let students vote with a show of hands or thumbs before you start:

Option 1: "Dr. Mchazime was a stranger who changed the direction of William's life. Has a stranger, or someone outside your close circle (family and friends), ever changed something important for you? What did they do, and did they know it mattered?"

Option 2: "Some people think that William's windmill is the cause of the second drought, and some even call him a witch. What would you say to people who think science is magic? How would you convince them its not?"

 **MOVEMENT:** After Q2 (advocate vs. sympathetic): 'Stand up if you think sympathy alone can create change. Stay seated if you think advocacy — taking action — is required.' Each side gives one real-world example before anyone sits down.

 **EDUCATOR NOTE:** This is the second-to-last Story Circle. Students have been in discussion together for 9 sessions. Let them lead more than usual today. If 3 minutes go by without you speaking, that's a win.

➔ **TRANSITION:** *Dr. Mchazime advocated for William. Your windmill is about to advocate for itself — in a final test.*



STEAM LAB

25 min

"Build a Windmill — Day 2 (Tower + Final Test)"

Big Question: Can you improve your Session 6 windmill design and add a tower to lift more weight?

The Challenge: *Engineering Iteration, second-generation design uses data from the first test. Students now have Session 6 data (blade angle → spin count). They use it to improve. This mirrors William's improvements to his own windmill.*

REVIEW SESSION 6 DATA: Each group reviews their Session 6 test results: blade angle, rotation count, cup lift result. Ask: 'What would you change if you could?' That question is the engineering and the engineering process.

BUILD TOWER + IMPROVE: Using cardboard tubes or skewers, build a freestanding tower for the windmill hub. Optional: adjust blade angle based on Session 6 data. Must spin and stand on its own.

FINAL TEST: Hold tower in front of fan. Count rotations in 10 seconds. Attach cup, does it lift? Add pennies one at a time until it stops. Record: max pennies lifted.

% IMPROVEMENT MATH: Compare Session 6 rotation count to today's. Calculate: (today – Session 6 rotation) ÷ Session 6 rotation × 100 = % improvement. Did the iteration help?

 **STUDENT CHOICE IN THE LAB:** Teams choose whether to prioritize height (taller tower = more wind) or blade redesign (better angle = more spin). Document your reasoning.

EMERGING — for students who need more support

For groups whose tower keeps falling: 'Before improving the blade, stabilize the base. A wider footprint is always more

ADVANCED — for students ready for more challenge

After the % improvement calculation: 'If you were scaling

stable. Try taping the base to the table during the test.'

this windmill to 3 meters blade span and wind speed is 5 m/s, calculate estimated power output using: $P = 0.5 \times 1.2 \times A \times v^3$.'

IF STUDENTS GET STUCK

Likely sticking point: The tower keeps tipping forward when the fan runs, the windmill pulls it over.

Say this #1: "The wind load is stronger than your base. Make the base wider, spread the footprint. The same wind force on a wider base produces less torque."

Say this #2: "Try bracing from behind, a diagonal strut from the back of the base to the middle of the tower. Real cell towers use guy wires for this same reason."

Quick visual to draw on the board: Draw on board: narrow base = high center of gravity = tips easily. Wide base = low center of gravity = stable. Diagonal brace = transfers lateral force into the base.

If you haven't pre-made anything: No cardboard tubes? Roll a piece of cardboard into a tube and tape it. No pennies? Use paper clips as weights.

 **WHAT SUCCESS LOOKS LIKE:** Students calculate a positive % improvement and can explain WHY their design change produced it. The explanation, not the number, is the evidence of learning.



SHOUTOUT & SEND-OFF

5 min

Ritual: Growth Formula

What to say: "Here's a formula: $[Struggle] + [Effort] + [Help] = [Growth]$. (Give a personal example) Write your own version, fill in what each piece was for you across this program. Share one piece if you want to."

Energy Award: Student who made the largest measurable improvement AND can explain WHY their change worked. Post today's test results next to Session 6 data on the Wonder Wall.

Preview: Next session: Chapter 15 + Epilogue. William goes to TED. The story comes full circle.

LESSON 10

Celebration Studio

Chapter 15 + Epilogue | Epilogue read aloud in session

Theme: What you built, what you learned, and what comes next

MATERIALS FOR THIS SESSION

- Session 1 invention sketches (retrieved from Wonder Wall)
- Junk bags per group (Same as session 1): rubber bands, cardboard scraps, bottle caps, straws, popsicle sticks, tape, foil, paper clips
- Markers for labeling prototypes

PRE-SESSION SETUP (10 minutes of prep before students arrive)

- ☐ Pull Session 1 invention sketches from the Wonder Wall and set aside in a stack by group
- ☐ Re-pack junk bags: rubber bands, cardboard scraps, bottle caps, straws, popsicle sticks, tape, foil, paper clips (1 bag per group of 4–5)
- ☐ Write 5 vocab words on board: ingenuity, momentum, culmination, magetsi a mphepo, transformation
- ☐ Write Big STEAM Question: "What will you build, and what does it tell you about what you can do?"



ARRIVAL RITUAL

5 min

"Walk the Wonder Wall"

Script: Take 5 minutes. Walk the whole wall. Touch anything you were part of. Pick one thing that surprised you, from your own work or someone else's.

- No talking during the walk.
- When you're done: write one word on an index card that describes what you see across all 10 sessions.

Debrief: What you're looking at is 10 weeks of your own thinking. That wall is yours.

Movement: Students circulate silently. If someone finishes early, ask them to find one artifact from another group that surprised them.



WORD PLAY

10 min

4-Step Routine + Final Sentence | 5 words, ~2 min each

Format: 4-Step Routine + Final Sentence — run the 4-Step Routine for each word. ~2 min per word. All talking.

What the room looks like: Run the 4-Step for all 5 words. After the last word, the room shifts into the final challenge — a single sentence about themselves. The writing is quiet. The sharing is not.

STUDENT CHOICE — How do we share our final sentences?

Let students vote with a show of hands or thumbs before you start:

Option 1: Read Aloud Circle — everyone reads their transformation sentence aloud in circle order — no skipping

Option 2: Post & Read — post sentences on the Wonder Wall and do a silent gallery walk to read them

HOW THIS FORMAT WORKS — 4-Step Routine + Final Sentence

If students choose: Read Aloud Circle

Read aloud: go around the circle in order. Everyone reads their transformation sentence — no commenting until everyone is done. Then: "What did you notice?" Let the room respond to the sentences as a collection.

If students choose: Post & Read

Students write their transformation sentence on an index card and post it on the Wonder Wall. Silent gallery walk for 3 minutes. Then: one person names the sentence that moved them most — without naming who wrote it.

 **SAY IT — DEFINE IT — CONNECT IT — USE IT** repeat for all 5 words

Session 10 words: *ingenuity, momentum, culmination, magetsi a mphepo, transformation*

EMERGING — for students who need more support

For students who struggle with the final transformation sentence: give the frame — 'Before this program, I _____. Now I _____. That change is my transformation.' Two sentences that show before and after is enough.

ADVANCED — for students ready for more challenge

After sharing: 'Write a second sentence using ingenuity — but about someone in this room, not William and not yourself. Be specific enough that people know who you mean without naming them.'

 **EDUCATOR NOTE:** Magetsi a mphepo means 'electric wind' in Chichewa — what William's village called his windmill. When you define it, say: 'They didn't call it a windmill. They gave it their own name. That naming is part of ownership.' Let it sit.

 **WHAT SUCCESS LOOKS LIKE:** The final transformation sentences are specific, not generic. 'I am transformed' is not success. 'I now know that constraints are the design brief, not the obstacle' is.



STORY CIRCLE

15 min

Student voices lead. You ask — they talk.

Setup: Sit in a circle — not at tables. Read each question clearly, then be quiet. No right answer. A discussion where students disagree respectfully beats one where everyone agrees fast.

Q1: "At the TED conference in Chapter 15, William sees the internet for the first time, and meets scientists from across Africa. How do you think William felt? What would your reaction be to this event? What do you think William used Google for the first time?"

Q2: "When you think about this book as a whole, how has William changed throughout the story? What do you think the purpose of writing this book was for William? How are you as a reader similar and different from William?"

STUDENT CHOICE DISCUSSION — Pick a question

Let students vote with a show of hands or thumbs before you start:

Option 1: "This is our last Story Circle. What's one way you think differently about problems, or about what's possible, than you did in Session 1 or before we started this book? Name it specifically: 'I think differently about ____.'"

Option 2: "What does William consider to be the greatest part about the TED conference? (Page 264). Why do you think this is? Do you agree this is the greatest part? What would you think is the greatest part?"

 **MOVEMENT:** After Q1 (collective vs. individual achievement): 'Stand if you think William's success belongs primarily to him. Sit if it belongs to a collective — family, library, Dr. Mchazime, Tom Reilly, TED. Walk to the center if the distinction doesn't matter.' Center people explain why the distinction isn't the point.

 **EDUCATOR NOTE:** This is the last Story Circle. Don't rush to fill silence. If the room goes quiet after a student

speaks, let it stay quiet. In a 10-session program, silence in the final circle usually means something landed.

➔ **TRANSITION:** *William stood at a wind farm and knew his story had come full circle. Your windmill is the same thing. Let's find out what it can do — one final test.*



STEAM LAB

25 min

"Design Showcase"

Big Question: What can you build, and what does it tell you about what you can do?

The Challenge: *Engineering Design + Presentation, students return to the sketch they made in Session 1 and build a prototype of their best community solution using a junk bag. This is the full circle moment: Session 1 was the seed. Session 10 is the harvest.*

REVIEW YOUR SKETCH Return the Session 1 sketches from the Wonder Wall. Each student or group finds their original idea. Ask: "Look at what you drew in Session 1. Does the problem you identified still feel real? Would you change anything now?" Provide time for the students to review, edit, and brainstorm.

BUILD: Hand out junk bags, same materials as Session 1: rubber bands, cardboard scraps, bottle caps, straws, popsicle sticks, tape, foil, paper clips. Say: "You have 12 minutes. Build the best version of your idea you can with what's in the bag. It doesn't have to be finished. It has to be real." Walk around. Ask questions only: "What problem does this solve? What's working? What would version 2 look like?"

SHOWCASE: Each student/group stands next to their invention and gives a 30-second explanation: what community problem they were solving, what they built, and one thing they'd change with more time or materials. Audience listens without interrupting

CLOSE "William started with a library book and a junkyard. You started with a junk bag and 10 weeks. Look at your Session 1 sketch and your prototype side by side. Name one thing you know now that you didn't know then."

 **STUDENT CHOICE IN THE LAB:** Groups choose whether to build solo or together, and whether to follow their original sketch or improve on it. Both are valid. The only rule: the problem has to be real.

EMERGING — for students who need more support

For students who need more support For students who feel stuck: "Don't worry about the finished product. Pick one part of your Session 1 sketch, just one, and build that piece. A wheel. A wall. A handle. One piece of a real idea is worth more than a perfect idea you never start."

ADVANCED — for students ready for more challenge

For students ready for more challenge During the showcase: "Include one thing your invention can't do yet — and what you'd need to make it do that. Every engineering showcase ends with next steps. William never stopped iterating."

IF STUDENTS GET STUCK

Likely sticking point: A student looks at their Session 1 sketch and says "I don't remember what I was thinking" or "this idea was dumb."

Say this #1: *"William's first windmill looked nothing like what he imagined. The sketch is just the question — the build is where the thinking happens. Start with the materials, not the sketch."*

Say this #2: *"Pick one thing from the bag. Tell me one problem it could help solve. That's all you need to start."*

Quick visual to draw on the board: Write: PROBLEM → MATERIAL → FUNCTION. Underneath: "Session 1, you identified the problem. Session 10, you build the function."

If the Session 1 sketch isn't available: No problem. Have students redraw their idea from memory in 2 minutes, what they remember is what stayed with them. That's a valid starting point.

✓ **WHAT SUCCESS LOOKS LIKE:** Every student can say out loud what community problem their invention is meant to solve. The prototype doesn't have to work perfectly — it has to represent real thinking. A student who holds up three straws and a bottle cap and says "this is a water filter because..." is exactly where you want them.



SHOUTOUT & SEND-OFF

5 min

Ritual: Letter to Day 1 Self

What to say: "On your index card, write the opening line of a letter to yourself on Day 1. 'Dear [your name], I want you to know _____. Something you have accomplished is _____.' You have 2 minutes. You don't have to share it, but you can."

Energy Awards: Give each student in the class an award for growth you saw in them this session.

VOCABULARY WORD CARDS

The Boy Who Harnessed the Wind | Sessions 1–10 | 50 Words

Session	Title	Words
Session 1	When Magic Ruled the World	<i>scarce, perseverance, superstition, maize, sing'anga</i>
Session 2	A Thing Called Science	<i>resilience, curiosity, innovation, tuberculosis, transistor</i>
Session 3	The Famine Begins	<i>scarcity, anguish, subsistence, famine, deforestation</i>
Session 4	The Darkest Days	<i>fragrant, meager, concealed, cholera, anguish</i>
Session 5	The Library & the Dream	<i>stimulated, reclaimed, dynamo, rotor, improvise</i>
Session 6	Building Begins	<i>laden, significant, resemble, welded, booted</i>
Session 7	The Windmill Comes to Life	<i>assembling, cumbersome, prototype, voltage, transformer</i>
Session 8	Power & Circuits	<i>diode, nonconductive, ferocious, circuit breaker, reliable</i>
Session 9	William's Story Spreads	<i>transmitter, innovation, eloquent, flocked, advocate</i>
Session 10	Full Circle	<i>ingenuity, momentum, culmination, magetsi a mphepo, transformation</i>

How to use these cards

- STEP 1 — SAY IT: Read the prompt aloud. Have every student repeat — whisper, then full voice.
- STEP 2 — DEFINE IT: Read the definition aloud. Restate in your own words immediately after.
- STEP 3 — CONNECT IT: Ask the question. Wait 5 full seconds before calling on anyone.
- STEP 4 — USE IT: Bulleted by grade level (6th / 7th / 8th). Students make an original sentence.

🕒 *Each word takes about 2 minutes. 5 words = 10 minutes total per session.*

SESSION 1 — WHEN MAGIC RULED THE WORLD | Words: *scarce, perseverance, superstition, maize, sing'anga*

SESSION 1 | When Magic Ruled the World

SCARCE *SKAIRS*

Not enough of something to meet the need — rare, limited, hard to find.

STEP 1 — SAY IT

Say it with me. Whisper it. Full voice. One more time.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Think of a time you ran out of something important — not just wanted, but actually needed. What happened?

STEP 4 — USE IT

- **6th:** Use scarce in a sentence about life in Wimbe during the famine.
- **7th:** Use scarce and an antonym (abundant, plentiful, ample) in the same sentence.
- **8th:** Trace a chain: how did scarcity of one resource cause scarcity of another? Give two steps.

✕ -----

SESSION 1 | When Magic Ruled the World

PERSEVERANCE *per-suh-VEER-ence*

Continuing to work toward a goal even when it is difficult, slow, or seemingly impossible.

STEP 1 — SAY IT

Say it with me. Feel all 5 syllables. Now say it like you've been working on something for months and you're still going.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

When have you persevered — kept going when it would have been easier to stop?

STEP 4 — USE IT

- **6th:** Use perseverance in a sentence about William in Chapters 1–3.
- **7th:** Use perseverance and a synonym (determination, tenacity, grit) in a contrast sentence.
- **8th:** Is William's perseverance admirable, reckless, or both? Argue with evidence.

✕ -----

SESSION 1 | When Magic Ruled the World

SUPERSTITION *soo-per-STI-shun*

A belief that events can be influenced by magical forces — not based in scientific evidence.

STEP 1 — SAY IT

Say it with me. Say it like you just walked under a ladder and you're not sure if you believe it matters.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What's a superstition you've heard — one that someone in your life actually believes? Do you believe it?

STEP 4 — USE IT

- **6th:** Use superstition in a sentence about William's village.
- **7th:** Use superstition and its opposite (scientific reasoning) in the same sentence.
- **8th:** Does the book treat superstition as wrong, or more complicated? Argue with evidence from Chapter 1.

SESSION 1 | When Magic Ruled the World

MAIZE MAYZ

Corn — the primary crop and staple food in Malawi. When the maize fails, everything else fails with it.

STEP 1 — SAY IT

Say it with me. Say it like it's the most important word in the sentence — because in this book, it usually is.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What food in your family or culture means more than just food — something that carries tradition or memory?

STEP 4 — USE IT

- **6th:** Use maize in a sentence showing its importance in William's world.
- **7th:** Use maize and scarcity in the same sentence to show how they're connected.
- **8th:** What does William's story teach us about depending on a single staple crop? Two sentences.

SESSION 1 | When Magic Ruled the World

SING'ANGA sing-AHN-gah

A traditional healer in Malawian culture — someone who uses spiritual knowledge and herbal medicine to explain illness and misfortune.

STEP 1 — SAY IT

Say it with me. This is a Chichewa word — the language of Malawi. Say it carefully.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Who do people in your community turn to for explanations of things that don't make sense?

STEP 4 — USE IT

- **6th:** Use sing'anga in a sentence about their role in Wimbe.
- **7th:** Use sing'anga and superstition in the same sentence to show how they're connected.
- **8th:** Why is William's growing skepticism about the sing'anga significant for who he becomes?

SESSION 2 | A Thing Called Science

RESILIENCE *reh-ZIL-ee-ence*

The ability to recover from difficulty — not the absence of struggle, but the capacity to bounce back.

STEP 1 — SAY IT

Say it with me. Say it like you've been knocked down and you're getting back up.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What's the difference between resilience and just surviving? When have you done more than just survive?

STEP 4 — USE IT

- **6th:** Use resilience in a sentence about what William demonstrates in Chapters 2–3.
- **7th:** Use resilience and an antonym (fragility, defeat) in the same sentence.
- **8th:** Is William's resilience born from strength or necessity? Two sentences with evidence.

✂ —————

SESSION 2 | A Thing Called Science

CURIOSITY *kyoor-ee-OS-ih-tee*

A strong desire to know or understand something — the drive to ask 'why,' 'how,' and 'what if.'

STEP 1 — SAY IT

Say it with me. Say it like you just noticed something you can't explain and you have to understand it.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What are you genuinely curious about right now — not for school, just for yourself?

STEP 4 — USE IT

- **6th:** Use curiosity in a sentence about how it drives William in Chapter 3.
- **7th:** Connect curiosity to one of its root words (cur-: cure, curate, care) in a sentence.
- **8th:** Is curiosity a trait or a skill? What does William's story suggest? Two sentences.

✂ —————

SESSION 2 | A Thing Called Science

INNOVATION *in-oh-VAY-shun*

Creating something new — or meaningfully improving something existing — in a way that solves a real problem.

STEP 1 — SAY IT

Say it with me. Say it like you've just had an idea no one else has had.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What's an innovation you use every day that someone had to invent from scratch? What problem were they solving?

STEP 4 — USE IT

- **6th:** Use innovation in a sentence about what William creates.
- **7th:** Use innovation alongside invention — explain how they're similar and different in one sentence.
- **8th:** Why does William's windmill qualify as innovation even though windmills already existed? Two sentences.

✂ —————

TUBERCULOSIS *too-BER-kyoo-LOH-sis*

A serious bacterial infection of the lungs — treatable with medical access, but often fatal where healthcare is limited.

STEP 1 — SAY IT

Say it slowly — this is a medical term worth knowing.
Whisper it. Full voice.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Uncle John's death was preventable in a different country.
What do you think about where you're born determining which diseases you survive?

STEP 4 — USE IT

- **6th:** Use tuberculosis in a sentence about what it meant for William's family.
- **7th:** Use tuberculosis alongside one other Session 2 word in the same sentence.
- **8th:** What does Uncle John's death reveal about global health equity — not just this family, but systems?

✂ —————

TRANSISTOR *tran-ZIS-tor*

A tiny electronic component that controls the flow of electricity — the basic building block of all modern electronics.

STEP 1 — SAY IT

Say it with me. Say it like you're a scientist presenting something tiny but world-changing.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Every phone and laptop runs on billions of transistors.
What's the most complex thing you've taken apart just to see how it worked?

STEP 4 — USE IT

- **6th:** Use transistor in a sentence about what William and Geoffrey discover in Chapter 3.
- **7th:** Use transistor alongside innovation in a sentence showing how one connects to the other.
- **8th:** Why was encountering a transistor meaningful for William specifically? What did it represent beyond the component?

✂ —————

SESSION 3 — THE FAMINE BEGINS | Words: scarcity, anguish, subsistence, famine, deforestation

SESSION 3 | The Famine Begins

SCARCITY *SKAIR-sih-tee*

The condition of having less of something than is needed — the gap between supply and demand that creates hardship.

STEP 1 — SAY IT

Say it with me. Notice how it comes from scarce. Say it like you're explaining an economic system.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What things even in wealthy places are scarce — clean water, affordable housing, mental health care? How does one scarcity create ripples in others?

STEP 4 — USE IT

- **6th:** Use scarcity in a sentence about what Wimbe faces in Chapters 4–5.
- **7th:** Use scarcity and a cause-and-effect connection from the chapters in the same sentence.
- **8th:** Trace the full chain: how did scarcity of rainfall produce multiple other scarcities in William's life?

✕ -----

SESSION 3 | The Famine Begins

ANGUISH *ANG-gwish*

Severe mental or physical pain — deeper than sadness, closer to agony. A suffering that is hard to hide.

STEP 1 — SAY IT

Say it with me. Say it quietly — this word carries weight.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

'Anguish was expressed mostly in silence since few had the energy to cry.' What does that sentence do to you?

STEP 4 — USE IT

- **6th:** Use anguish in a sentence about the community's experience in Chapter 7.
- **7th:** Use anguish alongside a sensory detail from the chapter to make the word feel concrete.
- **8th:** What does the author achieve by choosing anguish over sadness or sorrow? Two sentences.

✕ -----

SESSION 3 | The Famine Begins

SUBSISTENCE *sub-SIS-tence*

Having just barely enough to survive — living at the minimum level needed to stay alive.

STEP 1 — SAY IT

Say it with me. Say it like you're describing a very specific kind of survival — not thriving, just barely continuing.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

If you had to describe the difference between 'surviving' and 'thriving,' where is the line for you?

STEP 4 — USE IT

- **6th:** Use subsistence in a sentence that describes William's family's situation.
- **7th:** Use subsistence and scarcity in the same sentence to show how they're connected.
- **8th:** Why does subsistence farming create vulnerability? What does William's story reveal about this?

SESSION 3 | The Famine Begins

FAMINE FAM-in

A severe, widespread shortage of food affecting an entire region over an extended period, causing mass starvation.

STEP 1 — SAY IT

Say it like a news broadcast. Now say it like someone who is living inside it.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

The book shows the famine was made worse by political decisions. Does that change how you think about famine? Who is responsible?

STEP 4 — USE IT

- **6th:** Use famine in a sentence explaining what caused it in Malawi as the book describes.
- **7th:** Use famine and one cause (drought, policy, deforestation) in a cause-and-effect sentence.
- **8th:** Was Malawi's famine a natural disaster or a political one? Argue with evidence from the chapters.

SESSION 3 | The Famine Begins

DEFORESTATION dee-for-es-TAY-shun

The large-scale removal of trees from a forest — which damages soil, water cycles, and local climate.

STEP 1 — SAY IT

Feel the parts: DE- = removal, FOREST, -ATION makes it a noun. Say it together.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Trees hold water, prevent erosion, and moderate temperature. Where have you seen deforestation — in the news or in images?

STEP 4 — USE IT

- **6th:** Use deforestation in a sentence connecting it to what happens to Wimbe's land.
- **7th:** Use deforestation and famine in the same sentence to show cause and effect.
- **8th:** Why was deforestation hard to solve given the community's circumstances? Two sentences.

SESSION 4 | The Darkest Days

FRAGRANT *FRAY-grunt*

Having a pleasant, noticeable smell — often used to contrast beauty or comfort against hardship.

STEP 1 — SAY IT

Say it like you just caught a smell that stopped you. Now say it like the smell is the only good thing in the room.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Think of a smell deeply connected to comfort. Imagine it in the middle of something terrible. What does that contrast feel like?

STEP 4 — USE IT

- **6th:** Use fragrant in a sentence showing contrast between beauty and difficult circumstances in William's world.
- **7th:** Use fragrant and meager in the same sentence to show two different sensory experiences at once.
- **8th:** What does an author achieve by placing pleasant, fragrant details inside a scene of hardship? Two sentences.

✂ —————

SESSION 4 | The Darkest Days

MEAGER *MEE-ger*

Lacking in quantity or quality — small, thin, insufficient. A meager meal barely satisfies hunger.

STEP 1 — SAY IT

Say it like what it describes — small, thin, not quite enough.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

When have you had to make a meager amount of something — time, resources, energy — stretch further than it should?

STEP 4 — USE IT

- **6th:** Use meager in a sentence about what William's family has in Chapters 6–8.
- **7th:** Use meager alongside a specific detail from the chapter to make it concrete.
- **8th:** What does meager convey that 'small' or 'little' would not? Explain in two sentences.

✂ —————

CONCEALED *kun-SEELD*

Hidden from view or knowledge — deliberately kept out of sight.

STEP 1 — SAY IT

Say it quietly, like you're keeping something from someone.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

When have you concealed something — not to deceive, but to protect yourself or someone else? What made it necessary?

STEP 4 — USE IT

- **6th:** Use concealed in a sentence about something hidden in Chapters 6–8 and why.
- **7th:** Use concealed and one reason for the concealment in the same sentence — make the 'why' clear.
- **8th:** What does concealment reveal about social dynamics in William's village? Two sentences.

✂ ————— ✂

CHOLERA *KOL-er-uh*

A severe bacterial infection spread through contaminated water — preventable with clean water and sanitation.

STEP 1 — SAY IT

Say it carefully — this is a disease word with serious history. Together.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Cholera is preventable in theory but still kills thousands each year. What does it mean that a disease is preventable but not prevented?

STEP 4 — USE IT

- **6th:** Use cholera in a sentence placing it in the context of Chapters 6–8.
- **7th:** Use cholera and one of its causes in a sentence that shows the connection.
- **8th:** Connect cholera to William's windmill project — how does solving the energy problem also address disease? Two sentences.

✂ ————— ✂

ANGUISH *ANG-gwish*

[Revisited] Severe mental or physical pain — here applied to William's personal experience watching his family suffer.

STEP 1 — SAY IT

We've seen this word before. Say it again — this time think about what it feels like from the inside.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

There's a difference between watching a community suffer and watching someone you love suffer. What does it feel like to be helpless when someone close to you is in pain?

STEP 4 — USE IT

- **6th:** Use anguish in a sentence about William's personal experience in Chapters 6–8.
- **7th:** Use anguish in both its community meaning (Session 3) and its personal meaning (Session 4) — show the difference.
- **8th:** Why does the author return to this word? What does revisiting anguish accomplish in the narrative?

SESSION 5 | The Library & the Dream

STIMULATED *STIM-yoo-lay-ted*

Excited, activated, or energized — having the mind or senses awakened by something new.

STEP 1 — SAY IT

Say it like a word that describes what happened to your brain the last time you learned something exciting.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What stimulates YOUR brain? What subject or activity genuinely activates your thinking?

STEP 4 — USE IT

- **6th:** Use stimulated in a sentence about what happens to William in the library in Chapter 9.
- **7th:** Use stimulated alongside the specific thing that triggered it in William's experience.
- **8th:** What does stimulated tell us about William's relationship to learning? Why is the library scene a turning point?

✕ -----

SESSION 5 | The Library & the Dream

RECLAIMED *reh-KLAYMD*

Recovered or taken back — bringing something back into use after it was lost, abandoned, or discarded.

STEP 1 — SAY IT

Say it like something lost is now back in your hands.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What's something you've ever reclaimed — a skill, a relationship, a habit, or an object?

STEP 4 — USE IT

- **6th:** Use reclaimed in a sentence about the materials William uses or the education he returns to.
- **7th:** Use reclaimed to describe something with both a literal and a figurative meaning in this section.
- **8th:** What does William's choice to use junkyard materials say about his values? Two sentences.

✕ -----

SESSION 5 | The Library & the Dream

DYNAMO *DY-nuh-moh*

A device that converts mechanical energy into electrical energy — a generator. Also: a person of tremendous energy.

STEP 1 — SAY IT

Say it like something is spinning inside it right now.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

A dynamo converts movement into electricity. Where else do you see that kind of energy conversion?

STEP 4 — USE IT

- **6th:** Use dynamo in a sentence explaining what it does in William's windmill.
- **7th:** Use dynamo in both its technical meaning (generator) and figurative meaning (energetic person).
- **8th:** Why was understanding the dynamo the crucial insight that made the windmill possible? Two sentences.

SESSION 5 | The Library & the Dream

ROTOR *ROH-tor*

The rotating part of a machine — in a windmill, the blades and hub that spin to capture wind energy.

STEP 1 — SAY IT

Say it like something circular is in motion.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Think of rotating things you interact with — fans, wheels, propellers. What do they all have in common?

STEP 4 — USE IT

- **6th:** Use rotor in a sentence explaining its function in William's windmill.
- **7th:** Use rotor and dynamo in the same sentence to show how they work together.
- **8th:** Why was understanding the rotor important before William could build? Two sentences.

SESSION 5 | The Library & the Dream

IMPROVISE *IM-proh-vize*

To create or do something on the spot using whatever is available — without preparation or proper tools.

STEP 1 — SAY IT

Say it like you're solving a problem right now with whatever's in your pockets.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

When have you improvised — made something work without the proper tools? What did you substitute?

STEP 4 — USE IT

- **6th:** Use improvise in a sentence describing how William builds his windmill.
- **7th:** Use improvise alongside one specific material substitution William makes — show the concrete example.
- **8th:** Is improvisation a skill or a necessity in William's case — and does the difference matter? Two sentences.

SESSION 6 | Building Begins

LADEN *LAY-den*

Heavily loaded or weighed down — carrying a burden, either physical or emotional.

STEP 1 — SAY IT

Say it like you're carrying something very heavy. Now say it like the weight is invisible but still real.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

When have you felt laden — weighed down by something physical or emotional? What makes a burden bearable?

STEP 4 — USE IT

- **6th:** Use laden in a sentence about William's experience in these chapters.
- **7th:** Use laden in both a physical and an emotional sense in the same sentence or paragraph.
- **8th:** What does being laden with others' doubt do to a builder — and what keeps William moving despite it?

✂ —————

SESSION 6 | Building Begins

SIGNIFICANT *sig-NIF-ih-kunt*

Important, meaningful, or notable — having a real effect or consequence.

STEP 1 — SAY IT

Say it like you're announcing something that matters.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What's a decision you've made that turned out to be more significant than you realized at the time?

STEP 4 — USE IT

- **6th:** Use significant in a sentence about a specific decision or moment in these chapters.
- **7th:** Use significant alongside the reason for its significance — make the cause and effect explicit.
- **8th:** Identify the single most significant moment in these chapters and argue why it matters more than others.

✂ —————

SESSION 6 | Building Begins

RESEMBLE *reh-ZEM-bul*

To look or be like something else — to share a likeness without being identical.

STEP 1 — SAY IT

Say it like you're comparing two things carefully.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Have you made something that resembled something you saw elsewhere? What was the same? What had to be different?

STEP 4 — USE IT

- **6th:** Use resemble in a sentence about William's windmill and how it relates to what he read about.
- **7th:** Use resemble to compare William's windmill to something modern or familiar.
- **8th:** What does it mean that William built something resembling a library illustration using junkyard parts? Two sentences.

SESSION 6 | Building Begins

WELDED
WEL-did

Joined together permanently by heat — typically metal fused to metal. A weld is stronger than a bolt or screw.

STEP 1 — SAY IT
Say it like something is being permanently joined right now.

STEP 2 — DEFINE IT
Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT
What's a decision in your life that felt like welding — irreversible, no easy way back?

STEP 4 — USE IT

- **6th:** Use welded in a sentence about William's construction process.
- **7th:** Use welded in both a literal (construction) and figurative (commitment) sense.
- **8th:** What does the moment of welding represent in the narrative of building? Two sentences.

SESSION 6 | Building Begins

BOOTED
BOOT-ed

Kicked out, expelled, or forcibly removed — often from school or a group.

STEP 1 — SAY IT
Say it like a door just shut behind you.

STEP 2 — DEFINE IT
Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT
William was booted for something he couldn't control — the fee, not his grades. Have you ever been excluded because of circumstances, not what you did?

STEP 4 — USE IT

- **6th:** Use booted in a sentence about what happens to William in Chapter 6 and why.
- **7th:** Use booted alongside the economic cause to show the connection.
- **8th:** What does William's expulsion reveal about the relationship between economic systems and educational access?

SESSION 7 — THE WINDMILL COMES TO LIFE | Words: assembling, cumbersome, prototype, voltage, transformer

SESSION 7 | The Windmill Comes to Life

ASSEMBLING *uh-SEM-bling*

Putting parts together to build or form something whole — combining components into a working system.

STEP 1 — SAY IT

Say it like you're in the middle of it right now.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What was harder when you assembled something: getting the pieces, or figuring out how they fit together?

STEP 4 — USE IT

- **6th:** Use assembling in a sentence about what William is doing in Chapter 11.
- **7th:** Use assembling alongside one challenge he faces during the process.
- **8th:** Why is assembling the most public part of William's project — and what did that visibility mean for him? Two sentences.

✂ —————

SESSION 7 | The Windmill Comes to Life

CUMBERSOME *KUM-ber-sum*

Heavy, awkward, and difficult to handle — requiring more effort than seems reasonable.

STEP 1 — SAY IT

Say it like you're carrying something that keeps catching on things.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What's the most cumbersome project you've worked on — where the process itself was harder than the goal?

STEP 4 — USE IT

- **6th:** Use cumbersome in a sentence about a specific challenge William faces in these chapters.
- **7th:** Use cumbersome to describe both a physical and a social challenge in William's experience.
- **8th:** What does managing something cumbersome alone test that academic problem-solving does not? Two sentences.

✂ —————

PROTOTYPE *PROH-toh-type*

A first version of something — built to test whether the design works before a final or improved version is made.

STEP 1 — SAY IT

Say it like you've just made the first version of something the world has never seen.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What in your life was a first version — a prototype — of something you later improved?

STEP 4 — USE IT

- **6th:** Use prototype in a sentence about William's windmill and what it teaches him.
- **7th:** Use prototype alongside one improvement William makes or plans after the first version.
- **8th:** Why is building a prototype a courageous act — what does it commit you to that a plan or sketch does not?

✂ —————

VOLTAGE *VOL-tij*

The measure of electrical pressure — the force that pushes electrical current through a circuit.

STEP 1 — SAY IT

Say it like you're measuring something invisible but powerful.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Every electrical device has a voltage rating. What do you think happens if William gets that wrong?

STEP 4 — USE IT

- **6th:** Use voltage in a sentence explaining what William needs to understand to make his windmill useful.
- **7th:** Use voltage alongside another electrical term (dynamo, transformer, circuit) in a sentence.
- **8th:** Why is voltage the crucial variable William needs to control — what goes wrong if it's too high or too low?

✂ —————

TRANSFORMER *trans-FOR-mer*

A device that increases or decreases electrical voltage — used to make electricity safe and useful for different applications.

STEP 1 — SAY IT

Say it like something is changing as it passes through.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What else in life works like a transformer — something that takes energy and changes its intensity to make it useful?

STEP 4 — USE IT

- **6th:** Use transformer in a sentence about what William needs it to do for his windmill.
- **7th:** Use transformer in both its technical and figurative meaning in the same paragraph.
- **8th:** Why is the transformer the final piece of William's electrical understanding? Two sentences.

✂ —————

SESSION 8 | Power & Circuits

DIODE *DY-ohd*

An electronic component that allows electricity to flow in only one direction — like a one-way valve for current.

STEP 1 — SAY IT

Say it quickly — this one is short but specific.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

A diode only lets things go one way. Where else in life do you encounter something that only works in one direction?

STEP 4 — USE IT

- **6th:** Use diode in a sentence explaining what it does in an electrical circuit.
- **7th:** Use diode and circuit breaker in the same sentence — show two ways of protecting a circuit.
- **8th:** What happens if William builds a circuit without understanding the diode? Two sentences.

✂ —————

SESSION 8 | Power & Circuits

NONCONDUCTIVE *non-kon-DUK-tiv*

Not able to carry electrical current — materials like rubber, plastic, and wood that block electricity rather than allow it to flow.

STEP 1 — SAY IT

Feel the parts: NON = not, CONDUCTIVE = able to conduct. Together.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Every electrical tool has nonconductive handles — rubber grips, plastic coatings. Why does that matter?

STEP 4 — USE IT

- **6th:** Use nonconductive in a sentence about why it matters in William's windmill project.
- **7th:** Use nonconductive alongside conductive in a sentence showing the difference.
- **8th:** Why is knowing the difference between conductive and nonconductive essential safety knowledge — not just engineering?

✂ —————

FEROCIOUS *fuh-ROH-shus*

Fierce, intense, and powerful — often used for animals or forces of nature, or any overwhelming quality.

STEP 1 — SAY IT

Say it like a wind that's trying to knock you down.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What's the most ferocious natural force you've witnessed? What makes power ferocious rather than just powerful?

STEP 4 — USE IT

- **6th:** Use ferocious in a sentence about weather or wind in these chapters.
- **7th:** Use ferocious to describe both a literal (weather) and figurative (determination) thing in the same paragraph.
- **8th:** What does it mean that William built a structure designed to harness ferocity — how does that reframe danger?

✂ —————

CIRCUIT BREAKER *SER-kit BRAY-ker*

A safety device that automatically interrupts electrical flow when the current becomes too high — preventing fire, damage, or shock.

STEP 1 — SAY IT

Say it like something is about to be protected.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Most of us have had to reset a tripped circuit breaker. What caused it to trip? How is this a useful metaphor for human limits?

STEP 4 — USE IT

- **6th:** Use circuit breaker in a sentence about how it protects William's electrical system.
- **7th:** Use circuit breaker in both its technical meaning and as a metaphor for a human experience.
- **8th:** Why is a circuit breaker a key component — what does its absence risk? Two sentences.

✂ —————

RELIABLE *reh-LY-uh-bul*

Consistently dependable — able to be trusted to work or perform as expected, over time.

STEP 1 — SAY IT

Say it like you're describing something you'd stake important things on.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Who or what in your life is genuinely reliable? What makes reliability different from just being good once?

STEP 4 — USE IT

- **6th:** Use reliable in a sentence about what William's windmill needs to be for his family.
- **7th:** Use reliable alongside one feature William builds in to make it more dependable.
- **8th:** What's the difference between building something impressive and something reliable — and why does it matter?

✂ —————

SESSION 9 | William's Story Spreads

TRANSMITTER *trans-MIT-er*

A device or person that sends a signal, message, or energy from one place to another.

STEP 1 — SAY IT

Say it like a signal is being sent right now.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Who in your life is a powerful transmitter — someone who sends ideas or energy that reaches far? What makes their signal strong?

STEP 4 — USE IT

- **6th:** Use transmitter in a sentence about how William's story begins to spread.
- **7th:** Use transmitter in both its technical meaning (device) and figurative meaning (person) in the same paragraph.
- **8th:** Why did William's story need a transmitter to spread — what made it likely to be received? Two sentences.

✂ —————

SESSION 9 | William's Story Spreads

INNOVATION *in-oh-VAY-shun*

Creating something new that solves a real problem. [Revisited — applied now that the world has seen William's windmill.]

STEP 1 — SAY IT

We've had this word before. Say it now knowing what William has built. Does it sound different?

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

In Session 2, you defined innovation. Has the book changed that definition for you? What would you add?

STEP 4 — USE IT

- **6th:** Use innovation in a sentence describing William's windmill now that the world is seeing it.
- **7th:** Use innovation alongside advocate — explain who advocates for William's innovation and why.
- **8th:** Why does global recognition of William's windmill as innovation matter — and what does it still fail to prove?

✂ —————

ELOQUENT *EL-oh-kwent*

Able to express ideas clearly, powerfully, and persuasively — especially through speech.

STEP 1 — SAY IT

Say it carefully — this word is about language, so how you say it matters.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Think of a time you heard someone speak and felt moved, even with simple words. What made them eloquent?

STEP 4 — USE IT

- **6th:** Use eloquent in a sentence about how William communicates his story in these chapters.
- **7th:** Use eloquent alongside what made his communication powerful — be specific about the source.
- **8th:** Can someone be eloquent through action, silence, or presence rather than words? Argue with evidence.

✂ —————

FLOCKED *FLOKT*

Gathered in large numbers — moved together toward something as a group, like birds gathering in a flock.

STEP 1 — SAY IT

Short, sharp. Say it like a crowd moving toward something.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What have you seen people flock toward — an event, a person, a moment? What made them all move in the same direction?

STEP 4 — USE IT

- **6th:** Use flocked in a sentence about how people respond to William's windmill in these chapters.
- **7th:** Use flocked alongside what drew people — be specific about what the flock was responding to.
- **8th:** What does it mean that people flocked AFTER William's story became famous — what does that timing reveal?

✂ —————

ADVOCATE *AD-voh-kit (n) / AD-voh-kate (v)*

A person who supports or argues for a cause or person — or the act of doing so.

STEP 1 — SAY IT

The pronunciation shifts: AD-voh-kit (noun) vs. AD-voh-kate (verb). Together.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Who has been an advocate for you — someone who believed in you or argued for you when you couldn't advocate for yourself?

STEP 4 — USE IT

- **6th:** Use advocate in a sentence about who advocates for William and what they do.
- **7th:** Use advocate in both noun and verb form in the same paragraph.
- **8th:** Why did William need advocates — what could they do for his story that he couldn't do alone? Two sentences.

SESSION 10 | Full Circle

INGENUITY *in-juh-NYOO-ih-tee*

Creative cleverness in solving problems — the ability to find unexpected solutions using whatever is available.

STEP 1 — SAY IT

Say it like a word that describes the whole book.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Think of the most ingenious solution you've ever seen. What made it ingenious rather than just smart?

STEP 4 — USE IT

- **6th:** Use ingenuity in a sentence connecting it directly to what William does in this book.
- **7th:** Use ingenuity alongside a specific example that demonstrates it — don't just name it, show it.
- **8th:** Is ingenuity born from constraint — does limitation produce creativity, or just reveal it? Two sentences.

✂ —————

SESSION 10 | Full Circle

MOMENTUM *moh-MEN-tum*

The force of movement — in physics, mass times velocity; in life, the building energy of a project that becomes harder to stop.

STEP 1 — SAY IT

Say it like something that's been building and isn't stopping.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Think of a project that built momentum — where early work made later work easier. What started it?

STEP 4 — USE IT

- **6th:** Use momentum in a sentence about how William's story develops in these final chapters.
- **7th:** Use momentum in both its physics meaning and its life/narrative meaning in the same paragraph.
- **8th:** What created the momentum in William's story — what was the first push that made everything else possible?

✂ —————

SESSION 10 | Full Circle

CULMINATION *kul-mih-NAY-shun*

The highest or final point of something — the peak that everything before has been building toward.

STEP 1 — SAY IT

Say it like you're standing on top of something you've been climbing.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

What were the three most important steps that made Session 10's culmination possible?

STEP 4 — USE IT

- **6th:** Use culmination in a sentence about what the end of William's story represents.
- **7th:** Use culmination and two earlier vocabulary words to show the chain that led here.
- **8th:** Why is William's TED talk a culmination rather than just an ending — what had to be true for it to qualify?

SESSION 10 | Full Circle

MAGETSI A MPHEPO *mah-GET-see ah mm-PEH-poh*

Chichewa for 'electric wind' — the name William's community gave his windmill.

STEP 1 — SAY IT

Say this one slowly. This is William's language, and it's the name his village gave to what he built.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

The community created a new phrase in their own language for something that hadn't existed before. What does it mean to name something in your own language?

STEP 4 — USE IT

- **6th:** Use magetsi a mphepo in a sentence explaining what it means and why it matters.
- **7th:** Use magetsi a mphepo alongside another vocabulary word from this program to connect them.
- **8th:** Why does it matter that the community named the windmill in Chichewa? What does that naming represent? Two sentences.

SESSION 10 | Full Circle

TRANSFORMATION *trans-for-MAY-shun*

A deep, thorough change — not just improvement, but a fundamental reshaping of what something or someone is.

STEP 1 — SAY IT

Say it like something has just permanently changed.

STEP 2 — DEFINE IT

Listen to the definition. Restate it in your own words to a partner.

STEP 3 — CONNECT IT

Final question: How is William at the end different from William at the beginning — not just in what he has, but in who he is?

STEP 4 — USE IT

- **6th:** Use transformation in a sentence about how William changes from beginning to end.
- **7th:** Use transformation alongside two vocabulary words that describe stages of the change.
- **8th:** Final sentence of the program. Make it about William, yourself, or both. Make it true.

VOCABULARY APPENDIX

The Boy Who Harnessed the Wind | All 50 Words | Sessions 1–10 | 4-Step Routine: Say It → Define It → Connect It → Use It

#	Session	Words
1	When Magic Ruled the World	<i>scarce · perseverance · superstition · maize · sing'anga</i>
2	A Thing Called Science	<i>resilience · curiosity · innovation · tuberculosis · transistor</i>
3	The Famine Begins	<i>scarcity · anguish · subsistence · famine · deforestation</i>
4	The Darkest Days	<i>fragrant · meager · concealed · cholera · anguish</i>
5	The Library & the Dream	<i>stimulated · reclaimed · dynamo · rotor · improvise</i>
6	Building Begins	<i>laden · significant · resemble · welded · booted</i>
7	The Windmill Comes to Life	<i>assembling · cumbersome · prototype · voltage · transformer</i>
8	Power & Circuits	<i>diode · nonconductive · ferocious · circuit breaker · reliable</i>
9	William's Story Spreads	<i>transmitter · innovation · eloquent · flocked · advocate</i>
10	Full Circle	<i>ingenuity · momentum · culmination · magetsi a mphepo · transformation</i>

How to use: Hold up the card for each word. Step 1 — everyone says it aloud (whisper, then full voice). Step 2 — read the definition aloud, then restate it in your own words. Step 3 — ask the Connect It question; wait 5 seconds before calling on anyone. Step 4 — give the Use It prompt; each student makes their own sentence. ~2 minutes per word, 10 minutes total per session.

SCARCE *SKAIRS*

Not enough of something to meet the need — rare, limited, hard to find.

STEP 1 — SAY IT

Say it with me: *SKAIRS*. Whisper it like you're hiding something. Now say it like you just found out the supply is running out. Full voice.

STEP 2 — DEFINE IT

Scarce means there's not enough of something — not just hard to find, but genuinely insufficient for the need. In Malawi, maize becomes scarce in a way that determines whether a family eats or starves. This word does a lot of work in William's story.

STEP 3 — CONNECT IT

Think of a time you ran out of something important — not just wanted, but actually needed. What happened? How did the scarcity change your behavior?

Students might say: "When we ran out of water at soccer camp, everyone got stressed and started hoarding." / "Scarcity of time before a test feels different from scarcity of food — but the panic is similar."

STEP 4 — USE IT

6th: Use scarce in a sentence about what life was like in Wimbe during the famine. 7th: Use scarce and one antonym (abundant, plentiful, ample) in the same sentence. 8th: In two sentences, explain how scarcity of one resource caused scarcity of something else — trace the chain.

Students might say: "6th: Maize was so scarce in Wimbe that families measured their meals in handfuls." / "7th: In normal years maize had been abundant — by Chapter 5 it was scarce enough to divide a village." / "8th: Scarcity of rain caused scarcity of crops, which caused scarcity of money, which caused scarcity of hope."

PERSEVERANCE *per-suh-VEER-ence*

Continuing to work toward a goal even when it is difficult, slow, or seemingly impossible.

STEP 1 — SAY IT

per-suh-VEER-ence. Feel all 5 syllables. Whisper it. Now say it like you've been working on something for months and you're still not done but you're still going.

STEP 2 — DEFINE IT

Perseverance is not just trying hard once — it's continuing when things go wrong, when people doubt you, when you don't see results yet. William builds his windmill over months, not days. Perseverance is the engine under every chapter of this book.

STEP 3 — CONNECT IT

When have you persevered — kept going when it would have been easier to stop? It doesn't have to be dramatic. It could be a sport, a homework assignment, a relationship.

Students might say: "I practiced a piece on piano for 6 weeks and wanted to quit every week." / "William's perseverance feels different from mine because the stakes were life and death."

STEP 4 — USE IT

6th: Use perseverance in a sentence about something William does in Chapters 1–3. 7th: Use perseverance and one synonym (determination, tenacity, grit) in a contrast sentence. 8th: Is William's perseverance admirable, reckless, or both? Two sentences with evidence.

Students might say: "6th: William's perseverance in teaching himself from library books is what separates his dream from everyone else's doubt." / "8th: William's perseverance may have been born from necessity — he had no alternative — but it became strength when he chose curiosity over despair."

SUPERSTITION soo-per-STI-shun

A belief that events can be influenced by magical or supernatural forces — not based in scientific evidence.

STEP 1 — SAY IT

soo-per-STI-shun. Together. Say it like you just walked under a ladder and you're not sure if you believe it matters.

STEP 2 — DEFINE IT

A superstition is a belief that a ritual, object, or event has power to cause good or bad luck — without scientific explanation. In Wimbe, the sing'anga use superstition as medicine. William respects his culture AND gradually questions it. Both things are true at once.

STEP 3 — CONNECT IT

What's a superstition you've heard — one that someone in your life actually believes? Do you believe it? Why or why not?

Students might say: "My grandmother knocks on wood and she genuinely believes it helps." / "I don't believe in superstitions but I also won't step on cracks because it feels wrong."

STEP 4 — USE IT

6th: Use superstition in a sentence about William's village. 7th: Use superstition and its opposite (scientific reasoning) in the same sentence. 8th: Does the book treat superstition as wrong, or more complicated? Argue with evidence from Chapter 1.

Students might say: "6th: Superstition in Wimbe wasn't ignorance — it was the community's best explanation for what they couldn't yet observe directly." / "8th: Kamkwamba never mocks the superstitions of his village — he shows them as an honest attempt to understand the world before science was available to them."

MAIZE MAYZ

Corn — the primary crop and staple food in Malawi. When the maize fails, everything else fails with it.

STEP 1 — SAY IT

MAYZ. Together. Say it like it's the most important word in the sentence — because in this book, it usually is.

STEP 2 — DEFINE IT

Maize is corn — but in Malawi it isn't a side dish, it's survival. Nearly everything in William's family's diet, economy, and daily life depends on the maize harvest. When the harvest fails, 'the maize failed' means something far closer to 'everything failed.'

STEP 3 — CONNECT IT

What is the food in your family or culture that feels like more than just food — that carries tradition, memory, or significance? Maize is that for William, plus it's survival.

Students might say: "Rice in my family — every celebration involves rice." / "Maize being the staple crop makes every chapter about weather, politics, and supply chains also about food."

STEP 4 — USE IT

6th: Use maize in a sentence that shows its importance in William's world. 7th: Use maize and scarcity in the same sentence to show how they're connected. 8th: In two sentences, explain how a single staple crop creates fragility — what does William's story teach us about food systems?

Students might say: "6th: The maize was everything — food, income, and the measure of a good year or a desperate one." / "8th: A community that depends on one crop for survival has put all its eggs in one basket — when maize fails there's no backup, and that single point of failure becomes a catastrophe."

SING'ANGA *sing-AHN-gah*

A traditional healer in Malawian culture who uses spiritual knowledge and herbal medicine to treat illness and explain misfortune.

STEP 1 — SAY IT

sing-AHN-gah. Together. Say it carefully — this is a Chichewa word, the language of Malawi.

STEP 2 — DEFINE IT

The sing'anga are traditional healers in Malawi — spiritual authorities who explain illness and bad luck through the spirit world. William as a child both fears and trusts the sing'anga. His growing scientific curiosity eventually leads him to question their explanations — gently, and with respect for his culture.

STEP 3 — CONNECT IT

Who do people in your community turn to for explanations of things that don't make sense? A doctor? A religious leader? A family elder? The sing'anga was all three things in one for Wimbe.

Students might say: "My family goes to church for things that feel beyond medicine — illness, grief, things that don't have explanations." / "There's something powerful about having a person whose job is to explain the unexplainable."

STEP 4 — USE IT

6th: Use sing'anga in a sentence that explains what role they played in Wimbe. 7th: Use sing'anga and superstition in the same sentence to show how they're connected. 8th: Why is William's growing skepticism about the sing'anga significant for who he becomes?

Students might say: "6th: The sing'anga were Wimbe's doctors, priests, and scientists all at once — when something went wrong, they were the first to be called." / "8th: William's first act of scientific thinking was to doubt a sing'anga's cure — that doubt cost him social trust but opened the door to everything else."

✂ —————

RESILIENCE *reh-ZIL-ee-ence*

The ability to recover from difficulty — not the absence of struggle, but the capacity to bounce back from it.

STEP 1 — SAY IT

reh-ZIL-ee-ence. Together. Say it like you've been knocked down and you're getting back up.

STEP 2 — DEFINE IT

Resilience comes from Latin RESILIRE — to spring back. Like a rubber band that stretches but returns to shape. William's resilience isn't about not feeling pain — it's about what he does with it. He loses his uncle, loses school fees, watches the famine take hold — and he keeps reading.

STEP 3 — CONNECT IT

What's the difference between resilience and just surviving? When have you seen someone — including yourself — do more than just survive a hard thing?

Students might say: "Resilience is when you take what happened and make something from it — William literally built from the ruins of his circumstances." / "I've seen resilience in my family when someone got sick and everyone reorganized around them instead of falling apart."

STEP 4 — USE IT

6th: Use resilience in a sentence about what William demonstrates in Chapters 2–3. 7th: Use resilience and one antonym (fragility, defeat) in the same sentence. 8th: Is William's resilience born from strength or necessity? Two sentences with evidence.

Students might say: "6th: William's resilience after losing Uncle John wasn't silence — it was the choice to walk to the library anyway." / "8th: William's resilience may have been born from necessity — he had no alternative — but it became strength when he chose curiosity over despair."

CURIOSITY *kyoor-ee-OS-ih-tee*

A strong desire to know or understand something — the drive to ask 'why,' 'how,' and 'what if.'

STEP 1 — SAY IT

kyoor-ee-OS-ih-tee. Together. Say it like you just noticed something you can't explain and you have to understand it.

STEP 2 — DEFINE IT

Curiosity is the engine of this entire story. William didn't have money, power, or tools — but he had a compulsive need to understand how things worked. The library book about physics didn't just teach him about electricity. It gave his curiosity a direction.

STEP 3 — CONNECT IT

What's something you're genuinely curious about right now — not for school, just for yourself? When did you last follow that curiosity somewhere?

Students might say: "I'm curious about why different cultures developed such similar myths without ever talking to each other." / "William's curiosity is infectious — reading about him makes me want to build something."

STEP 4 — USE IT

6th: Use curiosity in a sentence that explains how it drives William's behavior in Chapter 3. 7th: Use curiosity and one of its root words (cur-: cure, curate, care) in a meaningful sentence. 8th: In two sentences, argue whether curiosity is a personality trait or a skill — what does William's story suggest?

Students might say: "6th: William's curiosity didn't need a teacher — it needed a library." / "8th: William's story suggests curiosity is a skill, not just a trait — he cultivated it deliberately, feeding it with books when his school couldn't feed it anymore."

INNOVATION *in-oh-VAY-shun*

The creation of something new — or the improvement of something existing — in a way that solves a real problem.

STEP 1 — SAY IT

in-oh-VAY-shun. Together. Say it like you've just had an idea that no one else has had.

STEP 2 — DEFINE IT

Innovation comes from Latin INNOVARE — to renew or change. William's windmill is innovation: not just invention, but solving a real problem with available resources — junkyard scraps, library knowledge. Innovation doesn't require a lab. It requires a problem and a mind willing to solve it.

STEP 3 — CONNECT IT

What's an innovation you use every day that someone had to invent from scratch? What problem were they solving?

Students might say: *"The water bottle — someone had to decide that carrying water while walking was a problem worth solving." / "William's windmill isn't just innovative — it's innovative given his constraints, which makes it more impressive, not less."*

STEP 4 — USE IT

6th: Use innovation in a sentence about what William creates in this book. 7th: Use innovation alongside invention — explain how they're similar and different in one sentence. 8th: In two sentences, explain why William's windmill qualifies as innovation even though windmills already existed.

Students might say: *"6th: William's windmill was an innovation that one village didn't know it needed until it already existed." / "8th: Innovation doesn't require originality — it requires relevance. Solving Wimbe's power problem with junkyard parts was entirely original even if windmills were not."*

✂ —————

TUBERCULOSIS *too-BER-kyoo-LOH-sis*

A serious bacterial infection of the lungs — treatable with medical access, but often fatal where healthcare is limited.

STEP 1 — SAY IT

too-BER-kyoo-LOH-sis. Say it slowly — this is a medical term worth knowing. Whisper it. Full voice.

STEP 2 — DEFINE IT

Tuberculosis — TB — attacks the lungs and spreads through the air. In the United States, it's treatable. In Malawi during William's childhood, it was often a death sentence. Uncle John's death from TB reveals a system failure: the gap between what medicine can do and who has access to it.

STEP 3 — CONNECT IT

Uncle John's death was preventable in a different country. What do you think about the fact that where you're born determines which diseases you survive?

Students might say: *"That's not just sad — that's unjust." / "It makes me think about how we talk about fighting disease without talking about who has the resources to fight."*

STEP 4 — USE IT

6th: Use tuberculosis in a sentence that explains what it meant for William's family. 7th: Use tuberculosis alongside one other Session 2 word in a single sentence. 8th: In two sentences, explain what Uncle John's death reveals about global health equity — not just this family, but systems.

Students might say: *"6th: Uncle John's death from tuberculosis left a gap in William's family that couldn't be filled by grief alone — it also left a gap in the labor of the farm." / "8th: Uncle John didn't die because tuberculosis is untreatable — he died because treatment requires access, and access requires resources his community didn't have. That's a systems problem, not a personal one."*

✂ —————

TRANSISTOR *tran-ZIS-tor*

A tiny electronic component that controls the flow of electricity — the basic building block of all modern electronics.

STEP 1 — SAY IT

tran-ZIS-tor. Together. Say it like you're a scientist presenting something tiny but world-changing.

STEP 2 — DEFINE IT

A transistor is a microscopic switch that controls electrical current. Invented in 1947, it made modern electronics possible — from radios to computers to phones. When William and Geoffrey take apart radios in Chapter 3, they encounter transistors. This is where William's hands meet what his curiosity is looking for.

STEP 3 — CONNECT IT

Every phone and laptop runs on billions of transistors. William encountered them first in a broken radio. What's the most complex thing you've ever taken apart just to see how it worked?

Students might say: "I took apart an old clock in 5th grade and couldn't figure out how to put it back together." / "The transistor is small but it changed everything — like how one small idea can change a person's trajectory."

STEP 4 — USE IT

6th: Use transistor in a sentence about what William and Geoffrey discover in Chapter 3. 7th: Use transistor alongside innovation in a sentence showing how one connects to the other. 8th: In two sentences, explain why encountering a transistor was meaningful for William — what did it represent beyond the component itself?

Students might say: "6th: The transistors inside the broken radios taught William that electronics had a logic he could learn." / "8th: For William, the transistor wasn't just a component — it was evidence that the invisible forces in physics books were real, touchable, and understandable."

✂ —————

SCARCITY *SKAIR-sih-tee*

The condition of having less of something than is needed — the gap between supply and demand that creates hardship.

STEP 1 — SAY IT

SKAIR-sih-tee. Notice how it comes from scarce — we had that word in Session 1. Say it together. Now say it like you're explaining an economic system.

STEP 2 — DEFINE IT

Scarcity is the noun form of scarce — the condition of insufficient supply. In Chapters 4–5, William's family experiences scarcity not as an economics lesson but as an immediate, physical reality.

STEP 3 — CONNECT IT

Scarcity isn't just about poverty. What are things even in wealthy places that are scarce — clean water, affordable housing, mental health care? How does scarcity in one resource create ripple effects?

Students might say: "Scarcity of housing makes scarcity of stability for kids in school." / "In William's case, scarcity of rain leads to scarcity of crops leads to scarcity of money leads to scarcity of hope. It cascades."

STEP 4 — USE IT

6th: Use scarcity in a sentence about what Wimbe faces in Chapters 4–5. 7th: Use scarcity and one cause-and-effect connection from the chapters in the same sentence. 8th: Trace the full chain: how did scarcity of rainfall produce scarcity in multiple other areas of William's life?

Students might say: "6th: The scarcity of rain that year created a scarcity of maize that created a scarcity of almost everything else." / "8th: Each shortage triggered the next — the scarcity of rain caused crop failure, which caused food scarcity, which caused economic scarcity, which made it impossible for William's father to pay school fees."

ANGUISH *ANG-gwish*

Severe mental or physical pain — deeper than sadness, closer to agony. A suffering that is hard to hide.

STEP 1 — SAY IT

ANG-gwish. Together. Say it quietly — this word carries weight.

STEP 2 — DEFINE IT

Anguish comes from Latin ANGUSTIA — a narrow passage, a choking. It is emotional or physical pain so severe it feels like suffocation. In Chapter 7, William describes the community's suffering with this word. It's not just sadness — it's a suffering that has no adequate response.

STEP 3 — CONNECT IT

There's a line in Chapter 7: 'Anguish was expressed mostly in silence since few had the energy to cry.' What does that sentence do to you? What does it say about the depth of the suffering?

Students might say: "It made me stop reading for a moment." / "Silence as anguish is more devastating than crying because there's no release in it."

STEP 4 — USE IT

6th: Use anguish in a sentence about what the community experiences in Chapter 7. 7th: Use anguish alongside a sensory detail from the chapter to make the word feel concrete. 8th: In two sentences, explain what the author's choice of anguish — rather than sadness or sorrow — tells us about the famine's impact.

Students might say: "6th: The anguish of the famine settled over Wimbe like weather — present in every face, every meal, every silence." / "8th: Anguish is chosen deliberately over sadness — anguish implies the feeling has gone so deep it no longer has a shape. The author needed a word that couldn't be comforted."

X —————

SUBSISTENCE *sub-SIS-tence*

Having just barely enough to survive — living at the minimum level needed to stay alive.

STEP 1 — SAY IT

sub-SIS-tence. Together. Say it like you're describing a very specific kind of survival — not thriving, just barely continuing.

STEP 2 — DEFINE IT

Subsistence means survival at the minimum level — enough food to stay alive, but nothing extra. Most families in Wimbe are subsistence farmers. In a good year, that means enough. In the famine year, 'enough' disappears entirely.

STEP 3 — CONNECT IT

If you had to describe the difference between 'surviving' and 'thriving,' where is the line for you? What would subsistence feel like in your life — what would have to be taken away?

Students might say: "Subsistence means your life narrows to just keeping yourself alive — there's no room for anything extra." / "William's family was subsistence farmers even in good years — the margin between enough and not enough was always thin."

STEP 4 — USE IT

6th: Use subsistence in a sentence that describes William's family's situation. 7th: Use subsistence and scarcity in the same sentence to show how they're connected. 8th: In two sentences, explain why subsistence farming creates vulnerability — what does William's story reveal about the distance between subsistence and disaster?

Students might say: "6th: William's family were subsistence farmers — they grew enough to survive, which meant any crop failure left them with nothing to fall back on." / "8th: Subsistence farming means there is no buffer — no surplus, no savings, no safety net. One bad year didn't just reduce comfort; it threatened survival directly."

X —————

FAMINE *FAM-in*

A severe, widespread shortage of food affecting an entire region over an extended period, causing mass starvation.

STEP 1 — SAY IT

FAM-in. Together. Say it like a news broadcast. Now say it like someone who is living inside it.

STEP 2 — DEFINE IT

A famine is not a temporary shortage — it's a widespread, extended failure of the food supply affecting an entire population. Chapter 5 shows this clearly: Malawi's famine was made worse by government decisions about fertilizer subsidies.

STEP 3 — CONNECT IT

The book shows that the famine wasn't just a natural disaster — it was made worse by political decisions. Does that change how you think about famine? Who is responsible?

Students might say: "I always thought of famine as just weather — no rain, no food. But the fertilizer policy piece makes it feel like a decision people made." / "That's still happening today — famine as a consequence of political neglect."

STEP 4 — USE IT

6th: Use famine in a sentence that explains what caused it in Malawi as described in the book. 7th: Use famine and one cause (drought, policy, deforestation) in the same sentence to show the connection. 8th: In two sentences, argue whether the famine in William's story was a natural disaster or a political one — use evidence from the chapters.

Students might say: "6th: The famine in Malawi didn't begin with hunger — it began with a drought made worse by a government that stopped subsidizing fertilizer." / "8th: The famine was both natural and political — the drought created the conditions, and government policy ensured those conditions became catastrophic."

DEFORESTATION *dee-for-es-TAY-shun*

The large-scale removal of trees from a forest — which damages soil, water cycles, and local climate.

STEP 1 — SAY IT

dee-for-es-TAY-shun. Feel the parts: DE- means removal, FOREST, -ATION makes it a noun. Together.

STEP 2 — DEFINE IT

Deforestation means clearing forests without replanting. In Malawi, deforestation contributed to the famine by reducing the ability of the land to retain water and prevent soil erosion. This connects William's story directly to current environmental science.

STEP 3 — CONNECT IT

Trees hold water, prevent erosion, and moderate local temperature. Without them, land becomes more vulnerable to drought. Where have you seen deforestation — in the news, in images?

Students might say: "The Amazon — but I didn't know about its connection to local rain until I learned about it in class." / "William's village cut trees for firewood because they had no other fuel — deforestation there was a survival decision, not a corporate one."

STEP 4 — USE IT

6th: Use deforestation in a sentence that connects it to what happens to Wimbe's land. 7th: Use deforestation and famine in the same sentence to show cause and effect. 8th: In two sentences, explain why deforestation was a difficult problem to solve given the community's circumstances.

Students might say: "6th: Deforestation left the hills around Wimbe bare and dry, unable to hold the rain that did fall." / "8th: Deforestation was hard to solve because trees were cut for cooking fuel — stopping the cutting meant finding an alternative energy source first. William's windmill, years later, was part of that alternative."

✕ —————

FRAGRANT *FRAY-grunt*

Having a pleasant, noticeable smell — often used to contrast beauty or comfort against hardship.

STEP 1 — SAY IT

FRAY-grunt. Together. Say it like you just caught a smell that stopped you. Now say it like the smell is the only good thing in the room.

STEP 2 — DEFINE IT

Fragrant means pleasantly scented. In this book, the word sometimes appears around food — the smell of maize cooking — in contrast to the hunger surrounding it. The author uses sensory language deliberately: beauty and hardship side by side.

STEP 3 — CONNECT IT

Think of a smell deeply connected to comfort. Now imagine that smell in the middle of a time when everything else is wrong. What does that contrast feel like?

Students might say: "The smell of my grandmother's kitchen — if I smelled that during something terrible it would make the contrast worse and better at the same time." / "Authors use fragrance as a reminder that beauty doesn't stop during suffering — which makes the suffering more vivid."

STEP 4 — USE IT

6th: Use fragrant in a sentence from William's world that shows contrast between sensory beauty and difficult circumstances. 7th: Use fragrant and meager in the same sentence to show two different sensory experiences at once. 8th: In two sentences, explain what an author achieves by placing fragrant, pleasant language inside a scene of hardship.

Students might say: "6th: The fragrant smell of the last portion of nsima being cooked made the meager serving feel like both feast and loss." / "8th: Placing fragrant details inside a scene of suffering creates dissonance — it reminds the reader that the world keeps being beautiful even when human lives are collapsing, which is harder to sit with than pure darkness."

✂ —————

MEAGER *MEE-ger*

Lacking in quantity or quality — small, thin, insufficient. A meager meal barely satisfies hunger.

STEP 1 — SAY IT

MEE-ger. Together. Say it like what it describes — small, thin, not quite enough.

STEP 2 — DEFINE IT

Meager means lacking — in amount, in substance, in quality. A meager portion of food means not enough. In Chapters 6–8, the word describes what is left after the famine has taken nearly everything else.

STEP 3 — CONNECT IT

When have you had to make a meager amount of something — time, resources, energy — stretch further than it should? What did that feel like?

Students might say: "When I had to make 20 minutes stretch into a whole afternoon of studying — nothing felt adequate." / "For William's family, meager wasn't an inconvenience. It was the whole reality."

STEP 4 — USE IT

6th: Use meager in a sentence about what William's family has in Chapters 6–8. 7th: Use meager alongside a specific detail from the chapter to make it concrete. 8th: In two sentences, explain how the author uses meager as a word choice — what does it convey that 'small' or 'little' would not?

Students might say: "6th: The meager rations William's mother divided each evening were proof of how thin the line between survival and starvation had become." / "8th: Meager is more precise than small because it implies inadequacy relative to need — something is meager only in contrast to what is required."

X

CONCEALED *kun-SEELD*

Hidden from view or knowledge — deliberately kept out of sight.

STEP 1 — SAY IT

kun-SEELD. Together. Say it quietly, like you're keeping something from someone.

STEP 2 — DEFINE IT

Concealed means hidden — either physically or figuratively. In these chapters, things are concealed out of shame, out of protection, or out of necessity. The family conceals how little food they have. William conceals his library visits. Concealment in the book is often survival behavior.

STEP 3 — CONNECT IT

When have you concealed something — not to deceive, but to protect yourself or someone else? What made concealment feel necessary?

Students might say: "I concealed how worried I was from my parents so they wouldn't worry more." / "William conceals his windmill project for a long time — being called crazy by the village has a cost."

STEP 4 — USE IT

6th: Use concealed in a sentence about something hidden in Chapters 6–8 and why. 7th: Use concealed and one reason for the concealment in the same sentence — make the 'why' clear. 8th: In two sentences, explain what concealment reveals about social dynamics in William's village — what must be hidden and why?

Students might say: "6th: William concealed his windmill sketches because the idea was too fragile to survive ridicule while it was still forming." / "8th: Concealment in Wimbe during the famine often revealed dignity — the decision to hide suffering rather than expose it was a way of maintaining personhood when circumstances stripped everything else away."

X

CHOLERA *KOL-er-uh*

A severe bacterial infection spread through contaminated water — preventable with clean water and sanitation.

STEP 1 — SAY IT

KOL-er-uh. Say it carefully — this is a disease word with serious history. Together.

STEP 2 — DEFINE IT

Cholera is a waterborne disease caused by contaminated water. In Chapter 8, the famine brings cholera alongside it. Like tuberculosis, cholera is preventable and treatable in places with infrastructure. In Malawi, it becomes another consequence of poverty compounding poverty.

STEP 3 — CONNECT IT

Cholera is spread through contaminated water. Clean water prevents it. What does it mean that a disease is preventable in theory but still kills thousands of people every year?

Students might say: "It means the problem isn't the disease — it's the access." / "William's windmill, eventually, could pump water. Clean water prevents cholera. The whole story connects."

STEP 4 — USE IT

6th: Use cholera in a sentence that places it in the context of Chapters 6–8. 7th: Use cholera and one of its causes in a sentence that shows the connection. 8th: In two sentences, connect cholera to William's eventual windmill project — how does solving the energy problem also begin to address the disease problem?

Students might say: "6th: Cholera arrived in the wake of the famine like a second wave — weakness had already lowered the community's defenses." / "8th: William's windmill was built for electricity, but its pump could move water. Clean water prevents cholera. The solution he built for one problem was a solution, in the long run, for another."

✕ —————

ANGUISH *ANG-gwish*

[Revisited] Severe mental or physical pain — this session applies the word to William's personal experience of watching his family suffer.

STEP 1 — SAY IT

ANG-gwish. We've seen this word before. Say it again — but this time think about what it feels like from the inside, not just the outside.

STEP 2 — DEFINE IT

We defined anguish in Session 3 as community suffering. Here it becomes personal — William watching his father lose weight, his family ration the last maize, his dog Khamba starve. Anguish in Session 4 has a face.

STEP 3 — CONNECT IT

There's a difference between watching a community suffer and watching someone you love suffer. What does it feel like to be helpless when someone close to you is in pain?

Students might say: "Watching someone you love suffer when you can't fix it is its own kind of torture." / "William's anguish isn't just about being hungry — it's about being powerless while the people he loves disappear in front of him."

STEP 4 — USE IT

6th: Use anguish in a sentence about William's personal experience in Chapters 6–8. 7th: Use anguish in both its community meaning (Session 3) and its personal meaning (Session 4) — show the difference. 8th: In two sentences, explain why the author returns to this word — what does revisiting anguish accomplish in the narrative?

Students might say: "6th: William's anguish watching Khamba starve was the moment the famine stopped being an event and became a loss." / "8th: The author returns to anguish because the word is capacious enough to hold both collective and personal pain — it's doing double work."

✕ —————

STIMULATED *STIM-yoo-lay-ted*

Excited, activated, or energized — having the mind or senses awakened by something new.

STEP 1 — SAY IT

STIM-yoo-lay-ted. Together. Say it like a word that describes what happened to your brain the last time you learned something exciting.

STEP 2 — DEFINE IT

Stimulated means activated or energized — a brain that is stimulated is engaged, alert, making connections. When William enters the library in Chapter 9, the author uses stimulated to describe what the books do to his mind. It's not just learning — it's awakening.

STEP 3 — CONNECT IT

What stimulates YOUR brain? What subject, activity, or type of information genuinely activates your thinking rather than dulling it?

Students might say: "Chess — I get stimulated in a way that other things don't do for me." / "For William, it was physics. Stimulation isn't one-size-fits-all."

STEP 4 — USE IT

6th: Use stimulated in a sentence about what happens to William in the library in Chapter 9. 7th: Use stimulated alongside one specific thing that triggered it in William's experience. 8th: In two sentences, explain what stimulated tells us about William's relationship to learning — and why the library scene is a turning point.

Students might say: "6th: William's mind was stimulated by the library books in a way that school had never quite managed." / "8th: That William was stimulated by a library book rather than a classroom is the whole argument of Chapter 9: learning happens when the right idea meets a mind that is ready for it."

✂ ————— ✂

RECLAIMED *reh-KLAYMD*

Recovered or taken back — bringing something back into use after it was lost, abandoned, or discarded.

STEP 1 — SAY IT

reh-KLAYMD. Together. Say it like something lost is now back in your hands.

STEP 2 — DEFINE IT

Reclaimed means recovered, brought back, repurposed. William reclaims materials from the junkyard — objects others discarded, now given new purpose. The word also applies to William himself: after being forced to leave school, he reclaims his education through the library.

STEP 3 — CONNECT IT

What's something you've ever reclaimed — taken back, repurposed, or returned to after a gap? A skill, a relationship, a habit, an object?

Students might say: "I reclaimed a friendship I thought was over." / "William reclaims both materials and his identity as a learner — those two reclamations are happening simultaneously in Chapter 9."

STEP 4 — USE IT

6th: Use reclaimed in a sentence about the materials William uses or the education he returns to. 7th: Use reclaimed to describe something with both a literal and a figurative meaning in this section. 8th: In two sentences, argue what William's act of reclaiming discarded materials says about his values.

Students might say: "6th: William reclaimed scraps from the junkyard the same way he reclaimed his education from the library — neither were given to him, both were taken back." / "8th: Choosing the junkyard was an act of vision — William saw value where others saw trash. That's not just engineering. That's a philosophy about what gets to count as a resource."

DYNAMO *DY-nuh-moh*

A device that converts mechanical energy (movement) into electrical energy — a generator. Also: a person of tremendous energy.

STEP 1 — SAY IT

DY-nuh-moh. Together. Say it like something is spinning inside it right now.

STEP 2 — DEFINE IT

A dynamo is a generator — it turns mechanical movement into electricity. When a turbine spins (like William's windmill), a dynamo converts that rotation into electrical current. This is the key component William learns about from the library book — it's what makes a windmill into a power source.

STEP 3 — CONNECT IT

A dynamo converts movement into electricity. Where else do you see that conversion — movement becoming energy? Think beyond windmills.

Students might say: "Hydroelectric dams — falling water turns turbines, which are connected to dynamos." / "Everything is conversion — once you see it that way, all machines start to feel related."

STEP 4 — USE IT

6th: Use dynamo in a sentence explaining what it does in William's windmill. 7th: Use dynamo in both its technical meaning (generator) and figurative meaning (energetic person) in the same paragraph. 8th: In two sentences, explain why understanding the dynamo was the crucial insight that made the windmill possible.

Students might say: "6th: The dynamo was the component William needed most — without it, the windmill could spin but couldn't produce electricity." / "8th: The dynamo was the bridge between mechanical force and electrical power — without understanding it, William had a spinning object, not a power source."

ROTOR *ROH-tor*

The rotating part of a machine — in a windmill, the blades and hub that spin to capture wind energy.

STEP 1 — SAY IT

ROH-tor. Together. Say it like something circular is in motion.

STEP 2 — DEFINE IT

A rotor is the spinning component of a machine — in a windmill, it's the blades and central hub that rotate when wind pushes them. The rotor transfers wind energy into mechanical rotation. William learns this terminology from his library book and applies it directly to what he's building.

STEP 3 — CONNECT IT

Think about all the rotating things you interact with every day — fans, wheels, propellers, washing machines. All of them have rotors. What do they have in common in terms of how they work?

Students might say: "They all convert one type of energy or motion into another kind of motion." / "A washing machine rotor — when you see it that way, everything mechanical starts to feel related."

STEP 4 — USE IT

6th: Use rotor in a sentence explaining its function in William's windmill. 7th: Use rotor and dynamo in the same sentence to show how they work together. 8th: In two sentences, explain why understanding the rotor was important before William could build.

Students might say: "6th: The rotor of William's windmill would need to keep spinning in light wind, not just in strong gusts." / "8th: Understanding the rotor gave William a way to think about his windmill in parts. Breaking it into parts made the problem solvable."

IMPROVISE *IM-proh-vize*

To create or do something on the spot using whatever is available — without preparation, plan, or proper tools.

STEP 1 — SAY IT

IM-proh-vize. Together. Say it like you're solving a problem right now with whatever's in your pockets.

STEP 2 — DEFINE IT

Improvise comes from Latin IMPROVISUS — unforeseen, unplanned. To improvise is to create without the proper tools or materials — to substitute, adapt, and make do. William's entire windmill is an improvisation: PVC pipe for blades, bicycle parts for the hub, tractor fan for the rotor. None of it is what the library book specified. All of it works.

STEP 3 — CONNECT IT

When have you improvised — made something work without the proper tools? What did you substitute? Did it work better or worse than you expected?

Students might say: "I made a costume from things I found in my house — it was better than if I'd bought something." / "Improvisation in music is similar — you build something in the moment from what you know. William was improvising in the same way."

STEP 4 — USE IT

6th: Use improvise in a sentence that describes how William builds his windmill. 7th: Use improvise alongside one specific material substitution William makes — show the concrete example. 8th: In two sentences, argue whether improvisation is a skill or a necessity in William's case — and what the difference matters.

Students might say: "6th: William had to improvise every component of the windmill because none of the materials in the book were available in Wimbe." / "8th: For William, improvisation was both necessity and skill — necessity created the pressure; skill created the solution."

LADEN *LAY-den*

Heavily loaded or weighed down — carrying a burden, either physical or emotional.

STEP 1 — SAY IT

LAY-den. Together. Say it like you're carrying something very heavy. Now say it like the weight is invisible but still real.

STEP 2 — DEFINE IT

Laden means weighed down — with physical cargo or emotional weight. In these chapters, William is laden with the weight of a project no one believes in, a community suffering around him, and the technical challenge of building something he's never seen in person.

STEP 3 — CONNECT IT

When have you felt laden — weighed down by something, whether physical or emotional? What makes a burden feel bearable versus unbearable?

Students might say: "Laden with expectations — I know that feeling before an important game." / "William is laden with doubt from others, but also with knowledge he's accumulated. Even knowledge can be a weight."

STEP 4 — USE IT

6th: Use laden in a sentence about William's experience in these chapters. 7th: Use laden in both a physical and emotional sense in the same sentence or paragraph. 8th: In two sentences, explain what being laden with others' doubt does to a builder — and what keeps William moving despite it.

Students might say: "6th: William was laden with everyone's doubt, but he carried it the way he carried junkyard parts — one trip at a time." / "8th: Being laden with others' doubt is its own kind of weight because it doesn't stay where you put it — it follows you into the work."

✕ —————

SIGNIFICANT *sig-NIF-ih-kunt*

Important, meaningful, or notable — having a real effect or consequence.

STEP 1 — SAY IT

sig-NIF-ih-kunt. Together. Say it like you're announcing something that matters.

STEP 2 — DEFINE IT

Significant means having real importance — an event, person, or choice that makes a difference. In building his windmill, William makes significant choices at every step: which materials to use, which design to follow, where to build. Each decision has consequences. Significant is a word about consequence.

STEP 3 — CONNECT IT

What's a decision you've made that turned out to be more significant than you realized at the time? What made it significant in hindsight?

Students might say: "Deciding to stay on the team when I wanted to quit — that was significant for reasons I didn't understand until the season was over." / "The significant decisions in William's project are often small at the time: which part to try first, whether to keep going after it doesn't work."

STEP 4 — USE IT

6th: Use significant in a sentence about a specific decision or moment in these chapters. 7th: Use significant alongside the reason for its significance — make the cause and effect explicit. 8th: Identify the single most significant moment in these chapters and argue why it matters more than others.

Students might say: "6th: The most significant moment in these chapters isn't the building — it's William deciding the windmill is worth the ridicule." / "8th: The most significant moment is when William keeps working after the first neighbor calls him crazy — that converts the windmill from a private dream into a public act of belief."

✂ —————

RESEMBLE *reh-ZEM-bul*

To look or be like something else — to share a likeness without being identical.

STEP 1 — SAY IT

reh-ZEM-bul. Together. Say it like you're comparing two things carefully.

STEP 2 — DEFINE IT

Resemble means to look or function like something else — similar but not the same. William builds something that resembles the windmill in the library book, but isn't identical to it. Resemblance is the bridge between the blueprint and the reality.

STEP 3 — CONNECT IT

Think about something you've made that resembled something you saw somewhere else. What was the same? What had to be different? Did the difference make it better or worse?

Students might say: "I tried to make a recipe I saw and it ended up resembling it only vaguely — but the version I made was actually better." / "William's windmill resembles the picture in the book — the resemblance was the goal."

STEP 4 — USE IT

6th: Use resemble in a sentence about William's windmill and how it relates to what he read about. 7th: Use resemble to make a comparison between William's windmill and something modern or familiar. 8th: In two sentences, explain what it means that William built something resembling a library illustration using junkyard parts.

Students might say: "6th: William's windmill resembled the diagram in the library book closely enough that it worked, and differently enough that it proved he understood the principles, not just the picture." / "8th: The gap between the blueprint and the junkyard windmill is where William's intelligence lives — anyone can follow instructions; William translated instructions for different materials into what he had."

✕

WELDED *WEL-did*

Joined together permanently by heat — typically metal fused to metal. A weld is stronger than a bolt or a screw.

STEP 1 — SAY IT

WEL-did. Together. Say it like something is being permanently joined right now.

STEP 2 — DEFINE IT

Welding fuses metal together using intense heat. In the context of William's windmill, welding represents the point where the project becomes irreversible. You can unscrew a bolt. You can't easily un-weld a joint. Building becomes commitment.

STEP 3 — CONNECT IT

What's a decision in your life that felt like welding — irreversible, permanent, no easy way back? How did it feel to make that kind of commitment?

Students might say: "Switching schools — once you go, you can't just un-go." / "William's windmill had a welding point — the moment where the question changed from will he try to will it work."

STEP 4 — USE IT

6th: Use welded in a sentence about William's construction process. 7th: Use welded both literally (in construction) and figuratively (as commitment) in the same paragraph. 8th: In two sentences, explain what the moment of welding represents in the narrative of building — what does permanently joining things together signal?

Students might say: "6th: The moment William welded the first joint of the windmill tower, the project moved from idea to structure." / "8th: The weld is the moment of no return — it's when a builder stops asking should I? and starts answering how? For William, that shift is the emotional core of these chapters."

✕

BOOTED *BOOT-ed*

Kicked out, expelled, or forcibly removed — often from school, a position, or a group.

STEP 1 — SAY IT

BOOT-ed. Together. Say it like a door just shut behind you.

STEP 2 — DEFINE IT

Booted means expelled or removed — usually as a consequence of something outside one's control. In Chapter 6, William is booted from school because his family can't pay the fees. He didn't fail academically. He didn't break a rule. He was removed by economics. That distinction matters.

STEP 3 — CONNECT IT

William was booted from school for something he couldn't control — the fee, not his grades. Have you ever been excluded from something because of circumstances, not because of what you did?

Students might say: "Being cut from a team because of money for equipment, not skill — that's the same kind of arbitrary booting." / "Being booted for something you couldn't control doesn't give you anything to fix. That's its own kind of cruelty."

STEP 4 — USE IT

6th: Use booted in a sentence about what happens to William in Chapter 6 and why. 7th: Use booted alongside the economic cause — show the connection. 8th: In two sentences, argue what William's expulsion reveals about the relationship between economic systems and educational access.

Students might say: "6th: William was booted from school when his family couldn't pay the fees — not because he had failed to learn, but because the system had failed him." / "8th: William's expulsion reveals that educational access isn't about ability — it's about money. His story is partly about what happens when learning happens anyway."

✂ —————

ASSEMBLING *uh-SEM-bling*

Putting parts together to build or form something whole — combining components into a working system.

STEP 1 — SAY IT

uh-SEM-bling. Together. Say it like you're in the middle of it right now.

STEP 2 — DEFINE IT

Assembling means putting parts together into a functional whole. In Chapter 11, William is assembling a windmill from components he has scavenged, improvised, and imagined. Assembling is the moment where all the preparation becomes physical.

STEP 3 — CONNECT IT

Think about something you've assembled — furniture, a model, a recipe, a group project. What was the hardest part: getting the pieces or figuring out how they fit together?

Students might say: "IKEA furniture — the pieces are all there but the instructions are for someone with more patience than me." / "William had no instructions for what he was assembling. The assembly itself was the research."

STEP 4 — USE IT

6th: Use assembling in a sentence about what William is doing in Chapter 11. 7th: Use assembling alongside one challenge he faces during the process. 8th: In two sentences, explain why assembling is the most public part of the windmill project — and what that visibility meant for William.

Students might say: "6th: Assembling the windmill meant translating everything William had read, imagined, and collected into something that actually stood up." / "8th: Assembling the windmill happened in public — in his yard, visible to neighbors. That meant every false start was witnessed, which turned each small failure into an act of courage."

CUMBERSOME *KUM-ber-sum*

Heavy, awkward, and difficult to handle — requiring more effort than seems reasonable.

STEP 1 — SAY IT

KUM-ber-sum. Together. Say it like you're carrying something that keeps catching on things.

STEP 2 — DEFINE IT

Cumbersome means awkward and heavy — hard to manage, move, or use efficiently. In building the windmill, William encounters cumbersome materials: heavy pipe, large fan blades, components not designed to be handled by one person. The word describes a physical challenge, but also captures the social weight of doing something no one else believes in.

STEP 3 — CONNECT IT

What's the most cumbersome project or task you've worked on — something where the process itself was harder than the goal? What made it awkward?

Students might say: "Group projects — sometimes the coordination is more cumbersome than the actual work." / "For William, the cumbersome parts are both literal (heavy metal) and figurative (heavy doubt from everyone watching)."

STEP 4 — USE IT

6th: Use cumbersome in a sentence about one specific challenge William faces in these chapters. 7th: Use cumbersome to describe both a physical and a social challenge in William's experience. 8th: In two sentences, explain how managing something cumbersome alone tests a different kind of intelligence than academic problem-solving.

Students might say: "6th: The cumbersome weight of the main shaft meant William needed to build a support structure before he could raise the blades." / "8th: Managing cumbersome physical problems alone builds different knowledge than reading builds — you learn what your body can do, what leverage means in practice, what good enough looks like when perfection isn't available."

✂ —————

PROTOTYPE *PROH-toh-type*

A first version of something — built to test whether the design works before a final or improved version is made.

STEP 1 — SAY IT

PROH-toh-type. Together. Say it like you've just made the first version of something the world has never seen.

STEP 2 — DEFINE IT

A prototype is a first attempt — not the final product, but the test case. Engineers build prototypes to discover problems before committing to the full design. William's first windmill is a prototype: it works, but it reveals what needs to be improved.

STEP 3 — CONNECT IT

What's something in your life that was a first version — a prototype — of something you later improved? A skill, a creative project, a habit?

Students might say: "My first essay in middle school was a prototype of how I write now — functional but rough." / "William's prototype windmill worked before it was refined. The prototype doesn't have to be perfect, it has to be real."

STEP 4 — USE IT

6th: Use prototype in a sentence about William's windmill and what it teaches him. 7th: Use prototype alongside one improvement William makes or plans after the first version. 8th: In two sentences, explain why building a prototype is a courageous act — what does a prototype commit you to that a plan or sketch does not?

Students might say: "6th: William's first windmill was a prototype that worked well enough to prove the idea and poorly enough to show what needed fixing." / "8th: A prototype commits you to being wrong in public — you've stopped imagining and started building, which means your mistakes are visible. William was brave enough to be visibly wrong on the way to being visibly right."

✂ —————

VOLTAGE *VOL-tij*

The measure of electrical pressure — the force that pushes electrical current through a circuit.

STEP 1 — SAY IT

VOL-tij. Together. Say it like you're measuring something invisible but powerful.

STEP 2 — DEFINE IT

Voltage is the measure of electrical 'pressure' — how much force is pushing electrons through a circuit. William reads about voltage in his library books and has to figure out how to produce the right amount from his windmill to power household appliances without burning them out.

STEP 3 — CONNECT IT

Every electrical device has a voltage rating — if you put too much through it, it breaks. William had to match his windmill's output to what his family's devices needed. What do you think would happen if you got that wrong?

Students might say: "Too much voltage would fry the device — he'd need some kind of regulator." / "The fact that William figured this out from library books, not engineering school, is the remarkable part."

STEP 4 — USE IT

6th: Use voltage in a sentence explaining what William needs to understand to make his windmill useful. 7th: Use voltage alongside another electrical term (dynamo, transformer, circuit) in a sentence showing how they connect. 8th: In two sentences, explain why voltage is the crucial variable William needs to control — what goes wrong if it's too high or too low?

Students might say: "6th: William needed to produce the right voltage — too little and the bulb wouldn't light, too much and he'd blow out the circuit." / "8th: Voltage too high destroys devices; voltage too low produces nothing. William's challenge was to design a system that produced electricity within a specific range — not just any electricity, but the right kind."

✂ —————

TRANSFORMER *trans-FOR-mer*

A device that increases or decreases electrical voltage — used to make electricity safe and useful for different applications.

STEP 1 — SAY IT

trans-FOR-mer. Together. Say it like something is changing as it passes through.

STEP 2 — DEFINE IT

A transformer changes the voltage of electrical current — stepping it up or stepping it down for different uses. William needs to understand transformers to make his windmill power safe for his family's lights and radio — not just electricity, but the right electricity.

STEP 3 — CONNECT IT

A transformer changes electricity from one voltage to another. What else in life works like a transformer — something that takes energy and changes its intensity to make it useful?

Students might say: "A good teacher is a kind of transformer — they take complex information at high voltage and step it down to something a new learner can use." / "The way a coach adapts their communication to each player is a kind of voltage transformation."

STEP 4 — USE IT

6th: Use transformer in a sentence about what William needs it to do for his windmill. 7th: Use transformer in both its technical and figurative meaning in the same paragraph. 8th: In two sentences, explain why the transformer is the final piece of William's understanding — what does knowing about it allow him to do?

Students might say: "6th: The transformer was the piece that made William's electricity safe — it brought the voltage down to something a light bulb could actually use." / "8th: Without a transformer, William had power but not safe power — it's the component that makes the difference between electricity that works and electricity that works without burning your house down."

✂ —————

DIODE *DY-ohd*

An electronic component that allows electricity to flow in only one direction — like a one-way valve for current.

STEP 1 — SAY IT

DY-ohd. Together. Say it quickly — this one is short but specific.

STEP 2 — DEFINE IT

A diode is a one-way gate for electrical current — electricity can pass through in one direction but not the other. They're used in circuits to protect against reverse current. William needs to understand diodes to build circuits that don't destroy themselves.

STEP 3 — CONNECT IT

A diode only lets things go one way. Where else in life do you encounter something that only works in one direction — no going back once it's gone through?

Students might say: "A ratchet wrench — it only tightens in one direction." / "Time is a kind of diode — current flows one way. William's commitment to the windmill began to feel like that."

STEP 4 — USE IT

6th: Use diode in a sentence explaining what it does in an electrical circuit. 7th: Use diode and circuit breaker in the same sentence to show two different ways of protecting a circuit. 8th: In two sentences, explain why understanding components like the diode matters for what William is building — what's the consequence of not understanding it?

Students might say: "6th: A diode in William's circuit made sure the current flowed in the right direction — without it, the current might reverse and damage the system." / "8th: Without understanding the diode, William risked building a circuit that would destroy itself — knowing what you don't know is part of the engineering skill."

NONCONDUCTIVE *non-kon-DUK-tiv*

Not able to carry or transmit electrical current — materials like rubber, plastic, and wood that block electricity.

STEP 1 — SAY IT

non-kon-DUK-tiv. Feel the parts: NON = not, CONDUCTIVE = able to conduct. Together.

STEP 2 — DEFINE IT

Nonconductive materials don't carry electrical current — they insulate instead of conduct. Rubber gloves, plastic coatings on wires, and wooden handles on tools all work because they are nonconductive. William learns about conductive and nonconductive materials to understand which parts of his windmill can be touched safely.

STEP 3 — CONNECT IT

Every electrical tool you use has nonconductive handles — the rubber grip on a screwdriver, the plastic on scissors. Why does that matter? What would happen without it?

Students might say: "Without nonconductive grips, every electrician would be shocked every time they worked." / "William had to think about these things deliberately — which is what makes self-taught engineering so demanding."

STEP 4 — USE IT

6th: Use nonconductive in a sentence explaining why it matters in William's windmill project. 7th: Use nonconductive alongside its opposite (conductive) in a sentence showing the difference. 8th: In two sentences, explain why knowing the difference is essential safety knowledge — not just engineering knowledge.

Students might say: "6th: William used nonconductive materials wherever the circuit touched the windmill frame — the last thing he needed was for his structure to become part of the circuit." / "8th: The difference between conductive and nonconductive is the difference between a tool that works and one that kills you — understanding insulation keeps the engineer alive."

✂ —————

FEROCIOUS *fuh-ROH-shus*

Fierce, intense, and powerful — often used for animals or forces of nature, or any intense and overwhelming quality.

STEP 1 — SAY IT

fuh-ROH-shus. Together. Say it like a wind that's trying to knock you down.

STEP 2 — DEFINE IT

Ferocious means fierce and overwhelming. In the chapters about the windmill's first full operation, weather and wind are described in ferocious terms. William has built something designed to harness ferocity — to take wild wind and convert it to controlled power. The word describes both the challenge and the resource.

STEP 3 — CONNECT IT

What's the most ferocious natural force you've ever witnessed or experienced? What did it feel like? What makes power ferocious rather than just powerful?

Students might say: "A thunderstorm at the lake — the wind changed in minutes from nothing to something that felt dangerous." / "Ferocious implies it's beyond the ordinary. William built something that feeds on what most people run from."

STEP 4 — USE IT

6th: Use ferocious in a sentence about weather or wind in these chapters. 7th: Use ferocious to describe something in both a literal (weather) and figurative (determination) sense in the same paragraph. 8th: In two sentences, explain what it means that William built a structure designed to harness ferocity — how does that reframe what we usually think of as dangerous?

Students might say: "6th: The ferocious seasonal winds that swept through Wimbe were exactly what William's windmill was built to capture." / "8th: Building something designed to harness ferocity means redefining it — not a threat, but a resource. William didn't build in spite of harsh weather. He built because of it."

X —————

CIRCUIT BREAKER *SER-kit BRAY-ker*

A safety device that automatically interrupts electrical flow when the current becomes too high — preventing fire, damage, or shock.

STEP 1 — SAY IT

SER-kit BRAY-ker. Together. Say it like something is about to be protected.

STEP 2 — DEFINE IT

A circuit breaker is a safety switch that automatically trips — cuts the power — when the electrical current becomes too high. It prevents wires from overheating and causing fires. William studies circuit breakers because his windmill could produce variable amounts of electricity, and he needs to protect his family's devices from surges.

STEP 3 — CONNECT IT

Most of us have had to reset a tripped circuit breaker in our homes. What caused it to trip? What was it protecting? How is this a useful metaphor for human limits?

Students might say: "Too many appliances at once — the breaker protected the wiring from overheating." / "A circuit breaker for a person might be shutting down when overwhelmed — it's not failure, it's protection."

STEP 4 — USE IT

6th: Use circuit breaker in a sentence about how it protects William's electrical system. 7th: Use circuit breaker in both its technical meaning and as a metaphor for a human experience. 8th: In two sentences, explain why a circuit breaker is a key component — what does its absence risk?

Students might say: "6th: Without a circuit breaker, any surge in William's windmill's output could fry the wiring and destroy everything he'd built." / "8th: Without a circuit breaker, a power surge destroys the entire system — the circuit breaker is the component that makes the system durable instead of just functional."

X —————

RELIABLE *reh-LY-uh-bul*

Consistently dependable — able to be trusted to work or perform as expected, over time.

STEP 1 — SAY IT

reh-LY-uh-bul. Together. Say it like you're describing something you'd stake important things on.

STEP 2 — DEFINE IT

Reliable means consistently trustworthy — something that works when you need it to, not just once but repeatedly. For William's family, the windmill needs to be reliable: not just a demonstration of possibility, but a consistent source of power. Reliable is the difference between a miracle and a solution.

STEP 3 — CONNECT IT

Who or what in your life is genuinely reliable — something you can count on consistently? What makes reliability different from just being good once?

Students might say: "My best friend — not because he's perfect but because when something goes wrong, I know he'll show up." / "William's windmill needed to be reliable, not just impressive. One amazing day doesn't fix a family's energy problem."

STEP 4 — USE IT

6th: Use reliable in a sentence about what William's windmill needs to be for his family. 7th: Use reliable alongside one feature William builds in to make it more dependable. 8th: In two sentences, explain the difference between building something impressive and something reliable — and why that difference matters.

Students might say: "6th: The windmill needed to be reliable enough to power the family's lights every night, not just spectacular enough to light one bulb once." / "8th: An impressive windmill proves a point. A reliable windmill changes a family's life. William wasn't building to amaze people — he was building to solve a problem permanently."

✕ —————

TRANSMITTER *trans-MIT-er*

A device or person that sends a signal, message, or energy from one place to another.

STEP 1 — SAY IT

trans-MIT-er. Together. Say it like a signal is being sent right now.

STEP 2 — DEFINE IT

A transmitter sends — whether a radio signal, an electrical charge, or a story. In these chapters, William's story begins to transmit beyond his village: journalists and eventually TED conference organizers receive the signal. William himself becomes a kind of transmitter — sending knowledge, inspiration, and proof of what's possible.

STEP 3 — CONNECT IT

Who in your life is a powerful transmitter — someone who sends ideas, energy, or information that reaches far? What makes their signal strong?

Students might say: "My teacher — she transmits excitement about ideas and somehow it lands." / "William transmits hope, not just knowledge — that's why his story spread so far."

STEP 4 — USE IT

6th: Use transmitter in a sentence about how William's story begins to spread. 7th: Use transmitter in both its technical meaning (device) and figurative meaning (person) in the same paragraph. 8th: In two sentences, explain why William's story needed a transmitter to spread — what made it likely to be received?

Students might say: "6th: William's windmill made him a transmitter of something larger than electricity — it transmitted proof that innovation could happen anywhere." / "8th: William's story needed transmitters because it was easy to ignore — what made it spread was not just the story, but the people who believed it was worth transmitting."

INNOVATION *in-oh-VAY-shun*

[Revisited] Creating something new that solves a real problem — now seen through the eyes of a world that has witnessed William's windmill.

STEP 1 — SAY IT

in-oh-VAY-shun. We've had this word before. Say it now knowing what William has actually built. Does it sound different?

STEP 2 — DEFINE IT

We defined innovation in Session 2. Now William's windmill exists, and journalists and global audiences are calling it exactly that. Innovation doesn't happen in isolation — it happens when someone with a problem, access to knowledge, and the willingness to fail meets the right combination of time and necessity.

STEP 3 — CONNECT IT

In Session 2, you defined innovation as something new that solves a real problem. Has the book changed how you understand that definition? What would you add or change now?

Students might say: "I'd add: innovation requires courage, not just intelligence." / "William innovated because he had no choice — necessity created the pressure."

STEP 4 — USE IT

6th: Use innovation in a sentence that describes William's windmill now that the world is seeing it. 7th: Use innovation alongside advocate — explain who advocates for William's innovation and why. 8th: In two sentences, explain why global recognition of William's windmill as innovation matters to the book's larger argument.

Students might say: "6th: What William called survival, the world called innovation — and that gap between names tells you something about who gets to define what counts as remarkable." / "8th: Global recognition confirms that what he did was real and significant — but it also raises the question: how many other Williamses are there, whose innovations no journalist ever reached?"

X —————

ELOQUENT *EL-oh-kwent*

Able to express ideas clearly, powerfully, and persuasively — especially through speech.

STEP 1 — SAY IT

EL-oh-kwent. Together. Say it carefully — this word is about language, so how you say it matters.

STEP 2 — DEFINE IT

Eloquent means expressing yourself with clarity and power — words chosen well, ideas communicated in a way that moves people. When William speaks at TED, he is not a fluent English speaker — and yet his presence, his story, and his few words are described as eloquent. Eloquence isn't vocabulary. It's truth delivered with presence.

STEP 3 — CONNECT IT

Think of a time you heard someone speak and felt moved, even if they used simple words. What made them eloquent? What's the difference between eloquent and just articulate?

Students might say: "A speech doesn't have to be long to be eloquent — sometimes it's one sentence." / "William at TED is eloquent partly because of what he doesn't say — the story behind him says everything."

STEP 4 — USE IT

6th: Use eloquent in a sentence about how William communicates his story in these chapters. 7th: Use eloquent alongside what made William's communication powerful — be specific about the source. 8th: In two sentences, argue whether eloquence requires language — can someone be eloquent through action, silence, or presence rather than words?

Students might say: "6th: William was eloquent not because his English was perfect but because his story was true and he knew it completely." / "8th: Eloquence can exist without sophisticated language — a person who has lived a truth and can stand in it communicates something that polished vocabulary cannot manufacture."

FLOCKED *FLOKT*

Gathered in large numbers — moved together toward something as a group, like birds gathering in a flock.

STEP 1 — SAY IT

FLOKT. Together. Short, sharp. Say it like a crowd moving toward something.

STEP 2 — DEFINE IT

Flocked means gathered in large numbers — people drawn together toward something interesting or significant. When William's windmill becomes known, journalists and curious visitors flock to Wimbe. The word captures momentum: once a story starts moving, more people follow.

STEP 3 — CONNECT IT

People flock to things that feel rare or significant. What have you seen people flock toward — an event, a person, a moment — and what made them all move in the same direction?

Students might say: "People flocked to the game when our team went to the finals — the whole school showed up when they never had before." / "The students who ignored William flocked once he was famous. What does that tell us about how communities decide what matters?"

STEP 4 — USE IT

6th: Use flocked in a sentence about how people respond to William's windmill in these chapters. 7th: Use flocked alongside what drew people — be specific about what the flock was responding to. 8th: In two sentences, reflect on what it means that people flocked after William's story became famous — what does that timing reveal?

Students might say: "6th: Once the story reached the internet, people flocked to Wimbe in a way that would have seemed impossible to the village that had called William crazy." / "8th: People flocked after the fame, not before — the value of William's windmill didn't change; what changed was who was paying attention."

ADVOCATE *AD-voh-kit (n) / AD-voh-kate (v)*

A person who supports or argues for a cause, person, or idea — or the act of doing so.

STEP 1 — SAY IT

AD-voh-kit (noun) / AD-voh-kate (verb). The pronunciation shifts based on how you use it. Together.

STEP 2 — DEFINE IT

An advocate is someone who speaks up for another person or a cause — who uses their voice on behalf of something that needs support. In these chapters, advocates emerge for William: people who recognized what he was doing and argued publicly that the world should pay attention. Advocates are what turn private achievements into public knowledge.

STEP 3 — CONNECT IT

Who has been an advocate for you — someone who believed in you or argued for you when you couldn't advocate for yourself? What did that feel like?

Students might say: "My coach advocated for me to stay on the team when others thought I wasn't ready." / "William's advocates saw his windmill and argued for his future — they extended what he could do alone."

STEP 4 — USE IT

6th: Use advocate in a sentence about who advocates for William and what they do. 7th: Use advocate in both noun and verb form in the same paragraph. 8th: In two sentences, explain why William needed advocates — what could advocates do for his story that he couldn't do alone?

Students might say: "6th: The journalist who wrote about William's windmill became his first public advocate — giving the windmill an audience William couldn't have reached himself." / "8th: Advocates extend your credibility into spaces you haven't reached. Without them, his windmill stays in one village forever."

INGENUITY *in-juh-NYOO-ih-tee*

Creative cleverness in solving problems — the ability to find unexpected solutions using whatever is available.

STEP 1 — SAY IT

in-juh-NYOO-ih-tee. Together. Say it like a word that describes the whole book.

STEP 2 — DEFINE IT

Ingenuity combines intelligence and creativity under pressure — the capacity to solve problems with limited resources by thinking in ways that aren't obvious. William's windmill is the definition of ingenuity: he used available materials, self-taught physics, and imagination to solve a real problem.

STEP 3 — CONNECT IT

Think of the most ingenious solution you've ever seen to a problem — something that made you think 'I would never have thought of that.' What made it ingenious rather than just smart?

Students might say: "A student in my class fixed a broken zipper with a paper clip in a way that actually held — that's ingenuity." / "Ingenuity usually involves seeing something as something else — a bicycle frame as a windmill component, a junkyard as a hardware store."

STEP 4 — USE IT

6th: Use ingenuity in a sentence that connects it directly to what William does in this book. 7th: Use ingenuity alongside a specific example that demonstrates it — not just name it but show it. 8th: In two sentences, argue whether ingenuity is born from constraint — does limitation produce creativity, or just reveal it?

Students might say: "6th: William's ingenuity was the force that transformed scarcity into a solution." / "8th: William's story suggests that constraint doesn't produce ingenuity — it reveals it. The ingenuity was always there. The junkyard gave it a reason to appear."

MOMENTUM *moh-MEN-tum*

The force of movement — in physics, mass times velocity; in life, the building energy of a project that becomes harder to stop.

STEP 1 — SAY IT

moh-MEN-tum. Together. Say it like something that's been building and isn't stopping.

STEP 2 — DEFINE IT

Momentum in physics is mass times velocity — the force that keeps a moving object moving. In life, momentum is the self-sustaining energy of a project that's working. William's story builds momentum: the windmill leads to the article, which leads to TED, which leads to university.

STEP 3 — CONNECT IT

Think about a project or effort in your life that built momentum — where early work made later work easier, and at some point it felt hard to stop. What started the momentum?

Students might say: "Once I got three paragraphs into the essay, momentum carried me through." / "William's windmill created momentum for his life — each success made the next one more possible."

STEP 4 — USE IT

6th: Use momentum in a sentence about how William's story develops in these final chapters. 7th: Use momentum in both its physics meaning and its life/narrative meaning in the same paragraph. 8th: In two sentences, explain what created the momentum in William's story — what was the first push that made everything else possible?

Students might say: "6th: By the time William stood on the TED stage, the momentum of his story was beyond his control — it had become something the world was carrying with him." / "8th: The first push of William's momentum was the windmill working — that single lit bulb gave him the evidence to keep going and gave advocates the story they needed to tell."

CULMINATION *kul-mih-NAY-shun*

The highest or final point of something — the peak that everything before has been building toward.

STEP 1 — SAY IT

kul-mih-NAY-shun. Together. Say it like you're standing on top of something you've been climbing.

STEP 2 — DEFINE IT

Culmination comes from Latin CULMEN — peak or summit. A culmination is not just an ending — it's the point where everything that was building finally arrives at its highest expression. The TED talk, the windmill powering William's village, the arrival of university education — these are culminations. Not endings, but peaks.

STEP 3 — CONNECT IT

What were the three most important steps that made this program's culmination — Session 10 — possible? What had to happen earlier for this session to carry weight?

Students might say: "Session 1 planted the idea. The windmill labs built the skills. The reading built the argument. Session 10 is the harvest." / "A culmination is different from a climax — a climax is the most exciting moment, a culmination is the most earned one."

STEP 4 — USE IT

6th: Use culmination in a sentence about what the end of William's story represents. 7th: Use culmination and two earlier vocabulary words from this program in the same sentence to show the chain. 8th: In two sentences, argue why William's TED talk was a culmination rather than just an ending — what had to be true for it to qualify as a peak?

Students might say: "6th: William's speech at TED was a culmination of a story that began in a village that had no electricity." / "8th: William's TED talk qualifies as culmination because it required everything that came before — the famine, the library, the junkyard, the ridicule, the windmill, the advocates. Any one of those missing, and there's no peak."

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MAGETSI A MPHEPO *mah-GET-see ah mm-PEH-poh*

Chichewa for 'electric wind' — the name William's community gave to his windmill.

STEP 1 — SAY IT

mah-GET-see ah mm-PEH-poh. Together. Say this one slowly — this is William's language, and it's the name his village gave to what he built.

STEP 2 — DEFINE IT

Magetsi a mphepo means 'electric wind' in Chichewa. It is the name William's neighbors eventually gave his windmill — not the English term 'wind turbine,' but their own name, in their own language, for something that didn't exist before William built it. New inventions get new names. This one came from the community that witnessed it first.

STEP 3 — CONNECT IT

The community created a new phrase in their own language for something that hadn't existed before. What does it mean to name something in your own language rather than borrowing a term from somewhere else?

Students might say: "Naming something in your own language means you've claimed it — it belongs to your world, not just to someone else's technology." / "Magetsi a mphepo is William's windmill in the way no English term could be — it's Wimbe's word for Wimbe's solution."

STEP 4 — USE IT

6th: Use magetsi a mphepo in a sentence that explains what it means and why it matters. 7th: Use magetsi a mphepo alongside one other vocabulary word from this program to connect them. 8th: In two sentences, explain why it matters that the community named the windmill in Chichewa — what does that naming represent about ownership and innovation?

Students might say: "6th: When the community named it magetsi a mphepo — electric wind — they were claiming it as theirs, as something that grew from their land and their need." / "8th: Naming it in Chichewa was an act of ownership — it said this invention came from Malawi, belongs to Malawi, and is described in the language of the people who needed it most."

TRANSFORMATION *trans-for-MAY-shun*

A deep, thorough change — not just improvement, but a fundamental reshaping of what something or someone is.

STEP 1 — SAY IT

trans-for-MAY-shun. Together. Say it like something has just permanently changed.

STEP 2 — DEFINE IT

Transformation comes from Latin TRANS (across) + FORMARE (to form). To transform is to be reshaped completely — not improved, but fundamentally different. A caterpillar doesn't improve into a butterfly. It transforms. William transforms: from a child who believed in magic, to a boy who built electricity, to a young man who spoke to the world.

STEP 3 — CONNECT IT

Final question of the program: How is William at the end different from William at the beginning — not just in what he has, but in who he is? Which transformation was most significant?

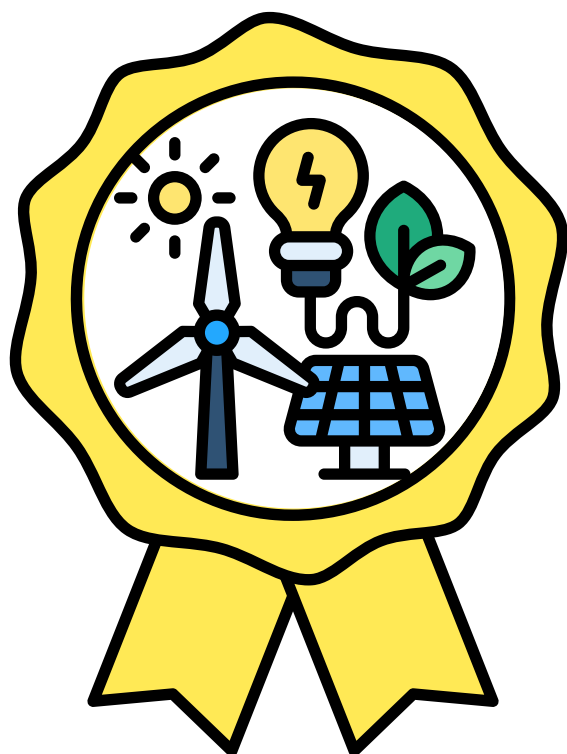
Students might say: "He stopped being someone who survived and became someone who built." / "On page 1, William counts the days. On the last page, he's not counting anything. That's the transformation."

STEP 4 — USE IT

6th: Use transformation in a sentence about how William changes from beginning to end. 7th: Use transformation alongside two vocabulary words from earlier sessions that describe stages of the change. 8th: Final sentence of the program. Make it about William, about yourself, or about both. Make it true.

Students might say: "6th: The transformation in William didn't happen at TED — it happened in the library, in the junkyard, in every day of building while no one believed." / "8th: I came to this program knowing about windmills and leaving knowing what it takes to build one from a junkyard with library books and no one watching — and that transformation in what I understand feels, surprisingly, personal."

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