

Visit the Great Plains



Art + Environmental Science Curriculum for Grades 3-8



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- Accompanying worksheets and activity guides

About the Curriculum

This material is part of the Great Plains, Great Brains afterschool curriculum supported by Beyond School Bells and developed by the Great Plains Art Museum with its parent organization, the Center for Great Plains Studies. This informal curriculum was developed for afterschool or summer learning and is founded on **place-based, eco-art education**, an approach to integrate art education with environmental education. The overall goal of this curriculum is to foster a wonder of and appreciation for the Great Plains through nature-based art activities.

The **Visit the Great Plains** curriculum focuses on:

- Nature-based tourism of the Great Plains
- Native animals of the Great Plains
- The importance of connecting with the Great Plains and sharing it with others

The activities in this curriculum include:

- Eco-art activities (prairie landscape art, animated animal zoetrope, cardboard bird automaton)
- Games (Great Plains jeopardy)
- A design challenge to build a travel poster for visiting the Great Plains

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Facilitator Notes:

- This curriculum incorporates images and videos to see the Great Plains; however, it is highly recommended to consider field trips and guest speaker connections (see list below) to strengthen place-based learning.
- The best time of year to teach this curriculum is during spring - early fall for opportunities to go on outdoor field trips. However, you can adapt lessons for the winter and take field trips to indoor museums and nature centers.
- Recommendations for a club leader:
 - ◇ These lessons will cover concepts of art and environmental science, therefore having someone with a background/interest in either (or both!) of these fields is recommended.
 - ◇ Lessons 2 & 3 have more challenging engineering components. Extra hands may be helpful to help students cut out materials and use a hot glue gun.

Overview of Lessons:

Lesson 1 - What is the Great Plains? (45 min)

Lesson 2 - Animated Animals Zoetrope Activity (1 - 1.5 hrs)

Lesson 3 - Fascinating Flights Automaton Activity (1 - 2 hrs)

Lesson 4 - Great Plains Jeopardy Game (30 min)

Design Challenge - Create a Travel Poster for Visiting the Great Plains! (2 - 3 hrs)

- Things to anticipate for each lesson plan:
 - ◇ Lesson 1: Print off the animal templates ahead of time. Click on the resources in the lesson plan to spend a few minutes describing the composition of a landscape artwork, which has a foreground, middle ground, and background.
 - ◇ Lesson 2: This activity may take up to 2 days. Print off the zoetrope templates ahead of time and follow the linked Activity Guide under “Materials” to build the zoetrope step-by-step.
 - ◇ Lesson 3: This activity has a slight engineering challenge and will take 2-3 days between constructing the cardboard frame, building the automaton parts, and attaching all the pieces. If you are doing the shorter version of making handheld automatons, this activity can be completed in one day. Print off the bird templates ahead of time and follow the linked Activity Guide under “Materials”.
 - ◇ Lesson 4: Click on the jeopardy game link to pull up the game on a projector or large screen. Read the game rules ahead of time, as this game is written with slight variations from traditional jeopardy.
 - ◇ Design Challenge: Collect cardboard, poster board, or large pieces of construction paper ahead of time to create posters. This activity can be completed in 2-3 days, depending on how detailed of a poster students would like to design. Encourage students to be creative using photos and drawings to tell a story about why they love the Great Plains.

Resources:

- Possible Partners:
 - ◇ [Master Naturalists](#)
 - ◇ [Nebraska Extension](#)
 - ◇ [Nebraska Statewide Arboretum](#)
 - ◇ [Nebraska Game & Parks Commission](#)
 - ◇ [Audubon Great Plains](#)
 - ◇ [Nebraska Natural Resource Districts \(NRD\)](#)
- Field Trip and Guest Speaker Connections:
 - ◇ Local nature centers
 - ◇ Prairie and wildlife reserves
 - ◇ Museums of Great Plains science/art/history
 - ◇ Environmental educators
 - ◇ Wildlife conservationists
 - ◇ Journalists and photographers (for poster design help)

Questions:

About the **lesson plans**, contact [The Center for Great Plains Studies](#).
Email: cgps@unl.edu | Office phone: 402.472.0602

About the **kits**, contact [Beyond School Bells](#).
Email: bsbinfo@nebraskachildren.org | Office phone: 402.476.9401

Supplies used in this curriculum:

- [Paper plates, 7" – 150 ct. \(1\)](#)
- [Black construction paper – 50 sheet \(2\)](#)
- [Wooden dowels, 3/16" x 12" – 100 ct. \(1\)](#)
- [Wooden beads, 20mm – 160 ct. \(1\)](#)
- [Masking tape \(1\)](#)
- [White cardstock paper – 50 sheet \(1\)](#)
- [Canary cardboard cutters \(2\)](#)
- [Mini low temperature hot glue gun \(1\)](#)
- [Mini high temperature hot glue gun \(1\)](#)
- [Mini hot glue sticks, 4" – 40 ct. \(2\)](#)
- [Paper straws, 7.75" x 0.25" – 80 ct. \(1\)](#)
- [Great Plains postcard packs \(3\)](#)
- [Blank postcards – 60 ct. \(1\)](#)
- [DIY instant digital cameras \(3\)](#)
- [Crayola Super Tips washable markers – 50 ct. \(1\)](#)
- [Crayola colored pencils – 50 ct. \(1\)](#)
- [Crayola boxed crayons – 64 ct. \(2\)](#)

Other supplies you might need:

- Cardboard
- Poster board or large pieces of white paper
- Glue sticks and liquid glue
- Colored construction paper
- Scissors
- Tape
- Ruler

What is the Great Plains?

Lesson 1

 **Big Question:** Where exactly is the Great Plains? How big is it and what can be found there?

 **Learning Objectives:** Students will be able to...

- Study the boundaries of the Great Plains and point out which states are a part of the region.
- Describe characteristics of the Great Plains.
- Create landscape art inspired by the Great Plains.

Activity: Prairie Landscape Paper Art

Educator Prep:

- Print out the Great Plains animal (bison, pronghorn, prairie dog) cutout templates.

Warm Up:

- Explain we will be learning about tourism, animals, and the environments in Nebraska and the greater Great Plains in these activities.
- Start off by asking, “What is the Great Plains?” Next, ask students, “How big do you think the Great Plains is?”
- Show a [map of the Great Plains](#). Ask students, “What are you seeing?”; “Does anything surprise you?”

Time: 45 minutes

Materials:

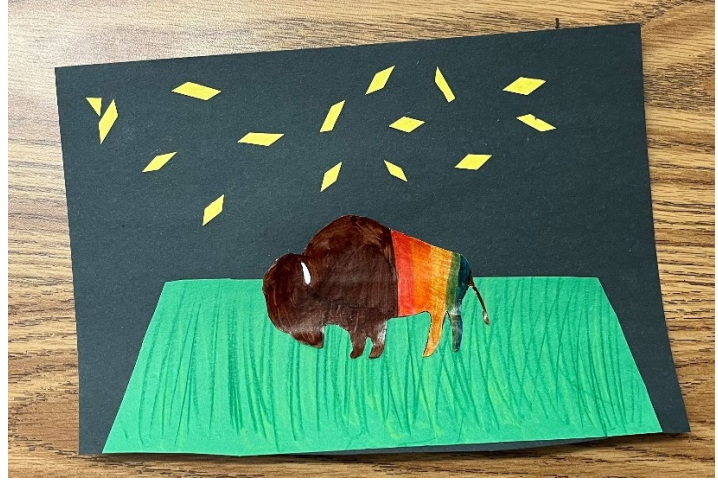
- Great Plains animal cutout templates (pp. 7-9)
- Colored construction paper
- Coloring materials: Markers, crayons, pencils
- Scissors
- Glue sticks

Procedure:

- Explain to students they are going to create paper landscape artworks inspired by the prairie.
- First, students will need a quick introduction to landscape art composition. Watch [Foreground, Middleground, and Background](#): Start at 2:00 minutes – End at 5:40 minutes (Kenwood K-8 Center Art Class).
- Next, show students images online of landscapes in the Great Plains. Click [here](#) to see a collection of examples of prairie landscape art. Ask students to reinforce what they just learned by pointing out the foreground, middle ground, and background in each image.
- Begin the art activity by having students select a Great Plains animal (bison, pronghorn, or prairie dog). Next, select three pieces of colored paper. They will need one each for the background, middle ground, and foreground.
- The background piece will serve as the first layer and can be a whole sheet of paper. Next, cut out/tear paper to create the middle ground and glue down on top of the background in

the lower two-thirds. Lastly, cut out/tear paper of a smaller piece to create the foreground and glue down on top of the middle ground piece in the lower one-third.

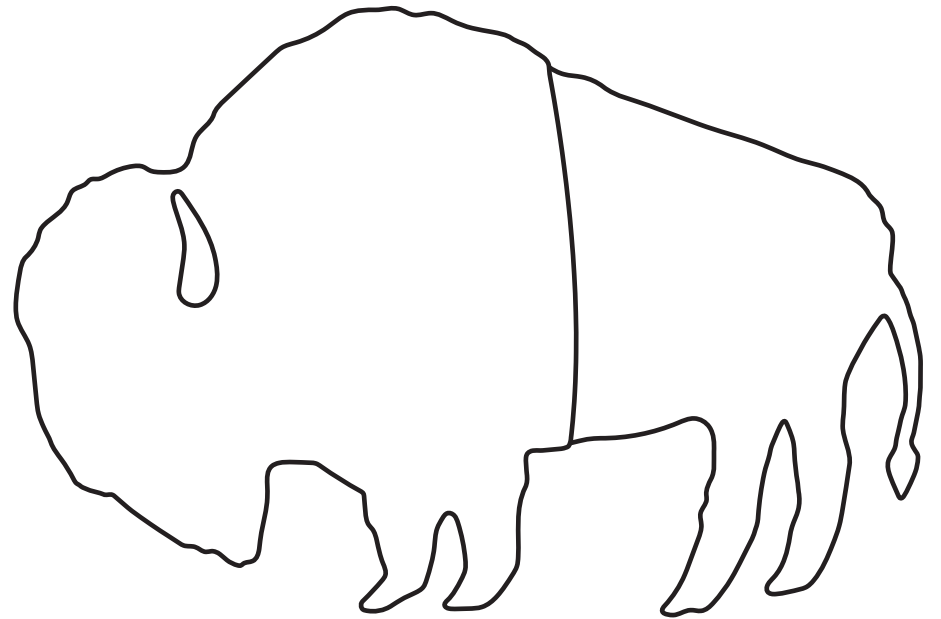
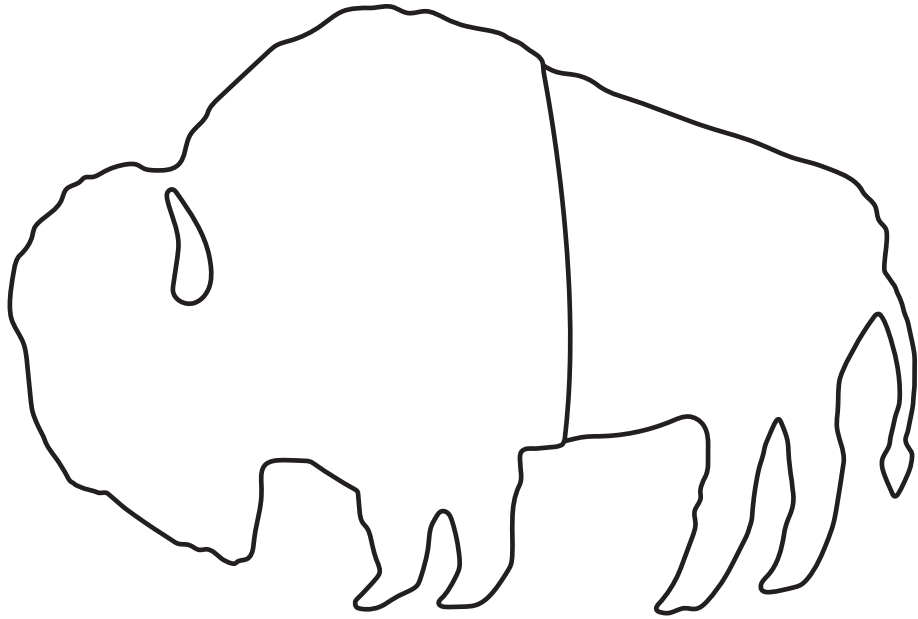
- Cut out your animal and color. Add this to the foreground and glue down.
- Add any details like a sun, trees, clouds, etc.



Note: These projects are missing a middle ground, but are great examples from past student work.

Reflection:

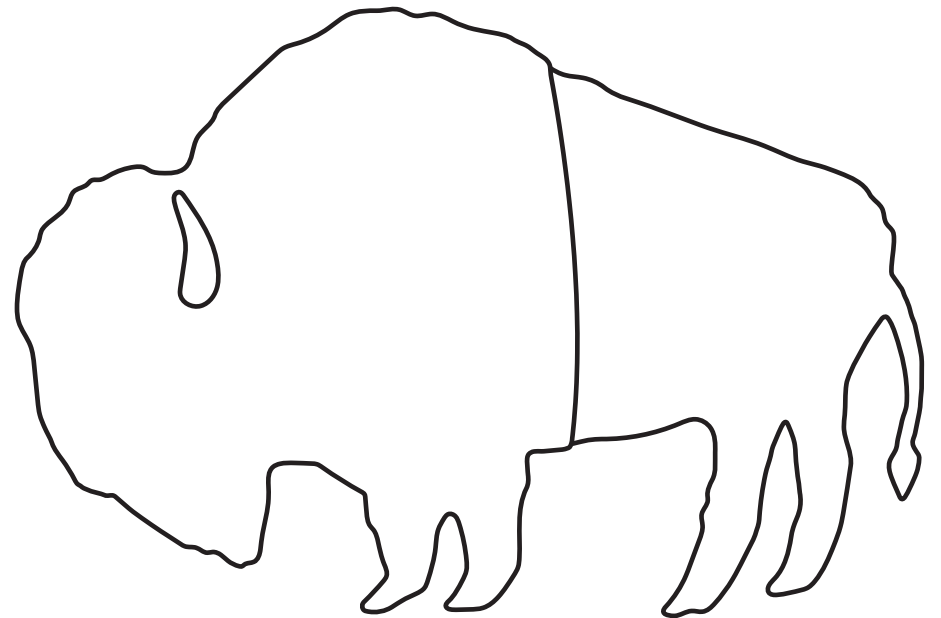
- Discuss – How do the layers of paper in your artwork create a sense of distance or closeness?
- Share Ideas – How would you describe a prairie to someone who has never visited here?



Bison Landscape Art Cutout Template

Instructions:

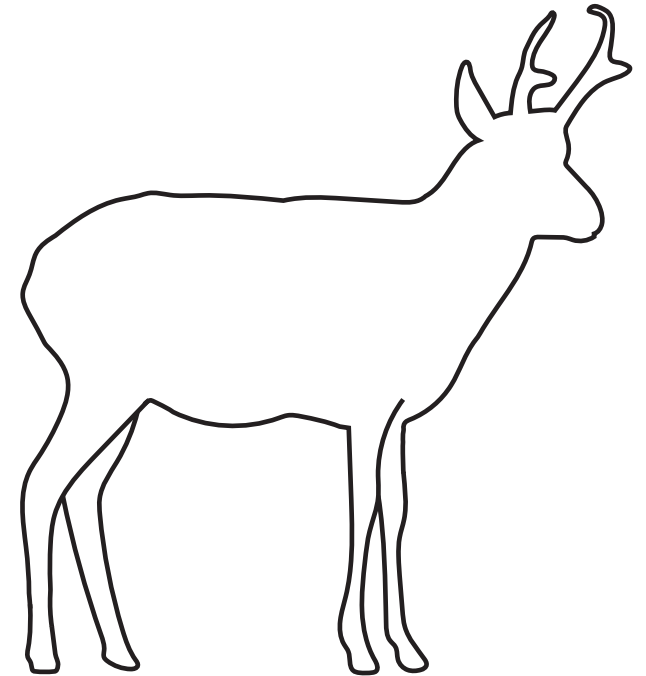
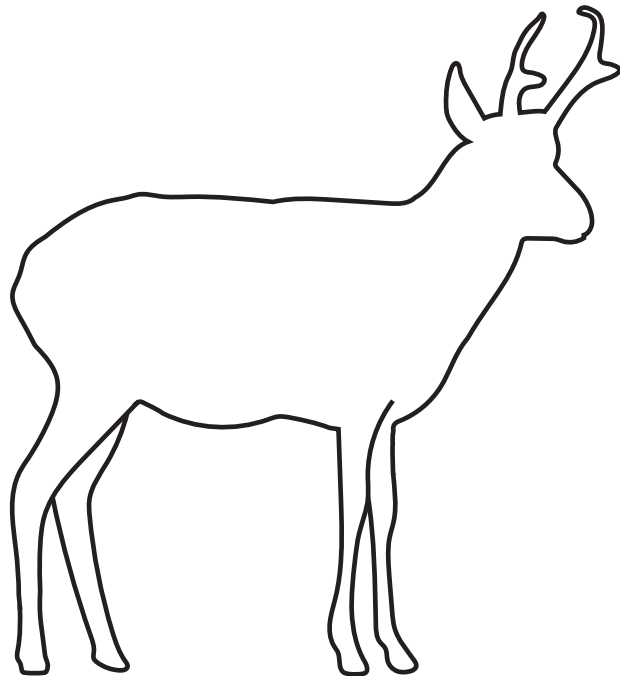
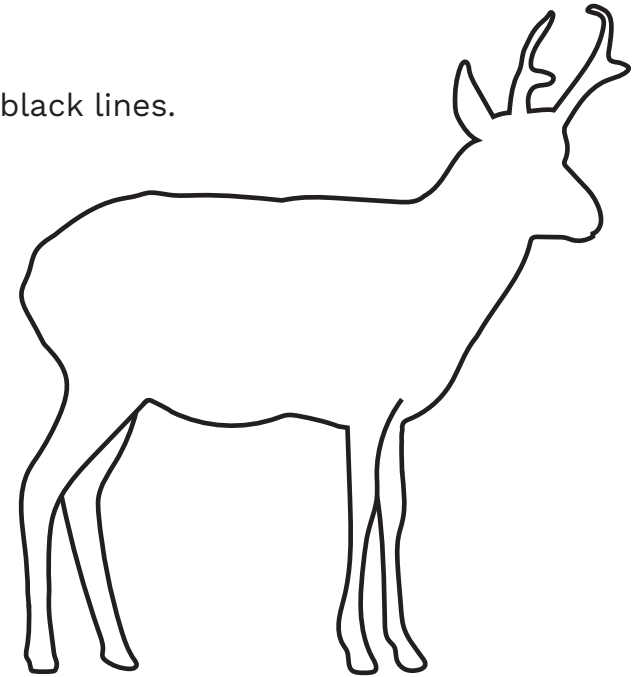
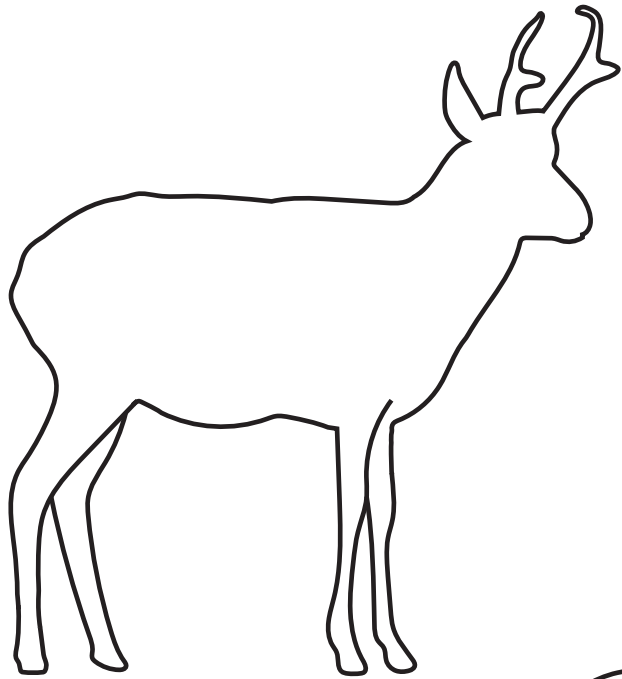
- Print to actual size for correct dimensions.
- Cut around the three bison and hand out to students to cut along the black lines.



Pronghorn Landscape Art Cutout Template

Instructions:

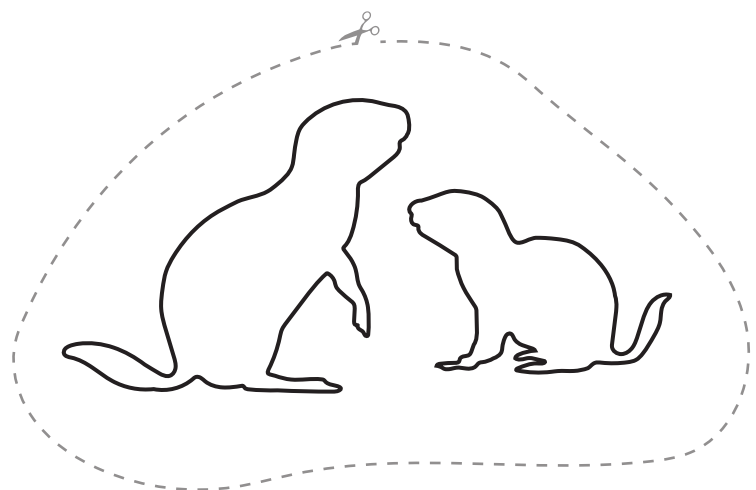
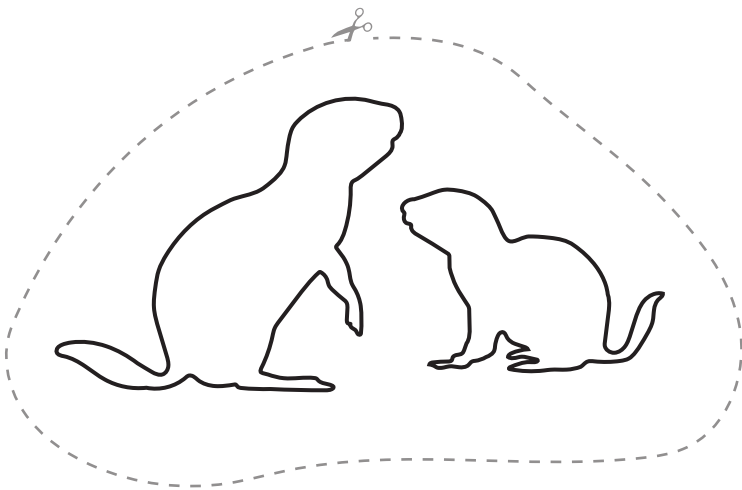
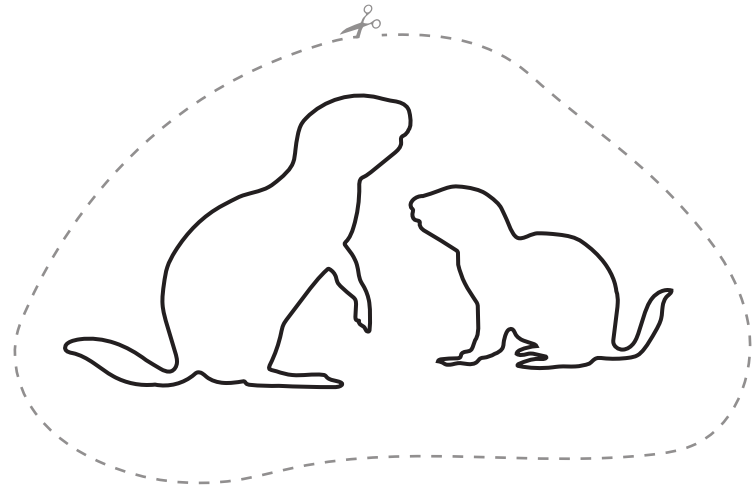
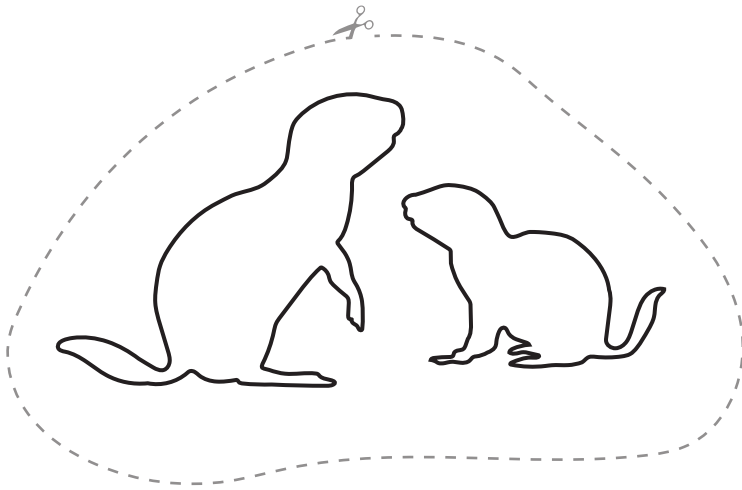
- Print to actual size for correct dimensions.
- Cut around the four pronghorns and hand out to students to cut along the black lines.



Prairie Dog Landscape Art Cutout Template

Instructions:

- Print to actual size for correct dimensions.
- Cut around the four prairie dogs and hand out to students to cut along the dashed lines.



Animated Animals Zoetrope Activity

Lesson 2



Big Question: What are some popular Great Plains animals in the wild and how can we create paper animations of them?



Learning Objectives: Students will be able to...

- Discuss the importance of some well-known Great Plains animals and their role in the environment.
- Construct spinning animated devices (zoetropes) using basic craft materials.

Activity: Spinning Animated Animals Zoetrope

Educator Prep:

- Print out enough animation strips for students to select an animal. Print out a few zoetrope templates on construction paper and cut out to create a template. Students will trace these on black paper.
- Look through the Activity Guide linked in “Materials” to get an overview of the activity process.

Warm Up:

- Ask – Have you ever seen an animated movie? What about a stop-motion or Claymation animated movie?
- Explain – A zoetrope is an early form of stop-motion animation before film technology was invented. Watch [Pixar’s Zoetrope](#): 2:00 minutes (AnimationIL)

Procedure:

- Open the [Zoetrope Activity Guide](#) and project it or have students open it on their own devices. Walk through the lesson plan with students to first learn about three Great Plains animals.
- Next, have each student select one of the animals they just learned about from the printed out animation strips.

Time: 1 – 1.5 hours

Materials:

- [Zoetrope Activity Guide](#)
- Zoetrope template (p. 12)
- Zoetrope animation strips (pp. 13-15)
- Black construction paper
- Small paper plates
- Wooden dowels
- Wooden beads
- Stick glue and hot glue
- Tape
- Scissors
- Pencils

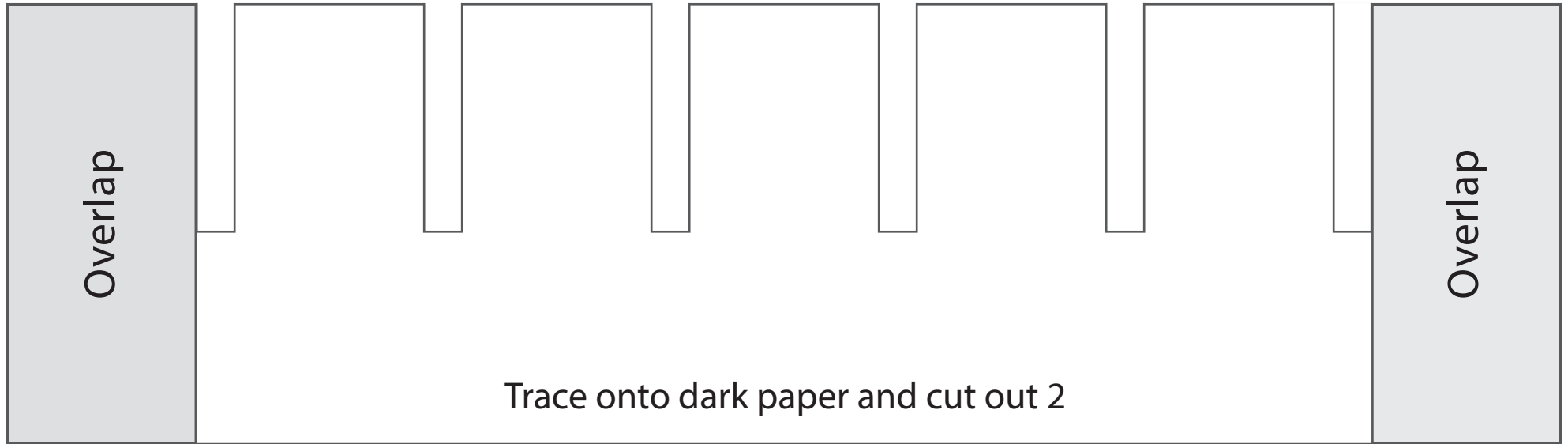
- Start on Slide 6 to begin the zoetrope build process.
- Walk through the activity guide with students step-by-step until you finish.
- Once everyone has completed their zoetropes, test them out and share as a group!

Reflection:

- Discuss – What scenes are you observing? How have the animals come to life by spinning the zoetrope?
- Describe – What happens when you change the spinning direction from clockwise to counterclockwise? Is one direction forward and one direction backward?



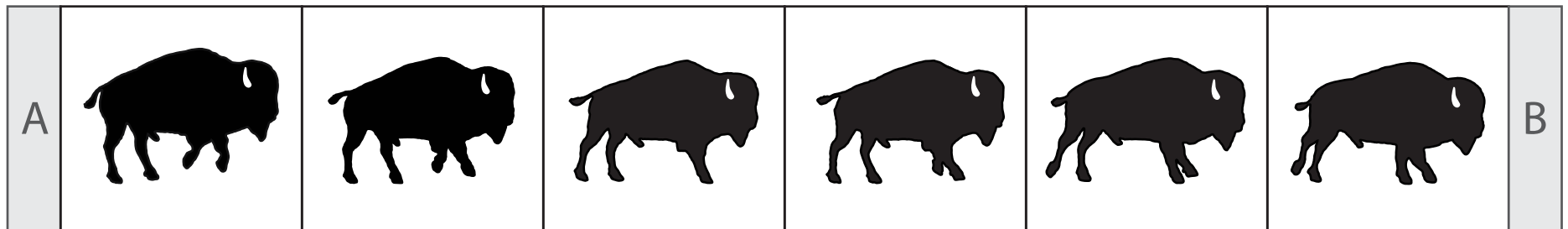
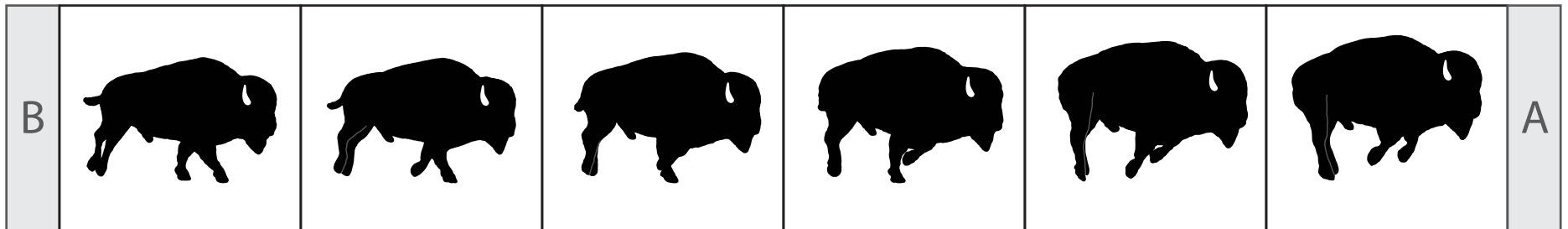
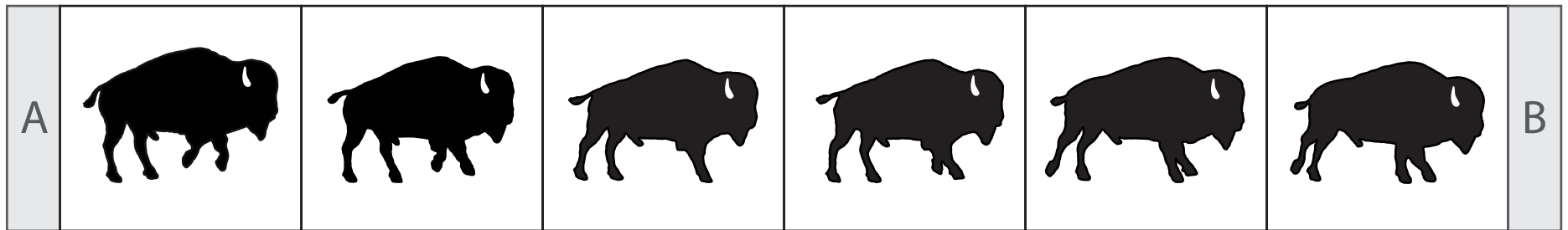
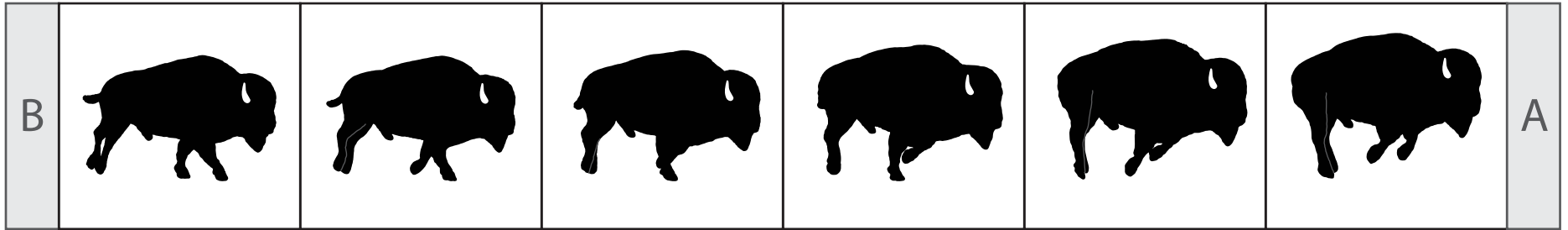
Zoetrope Template



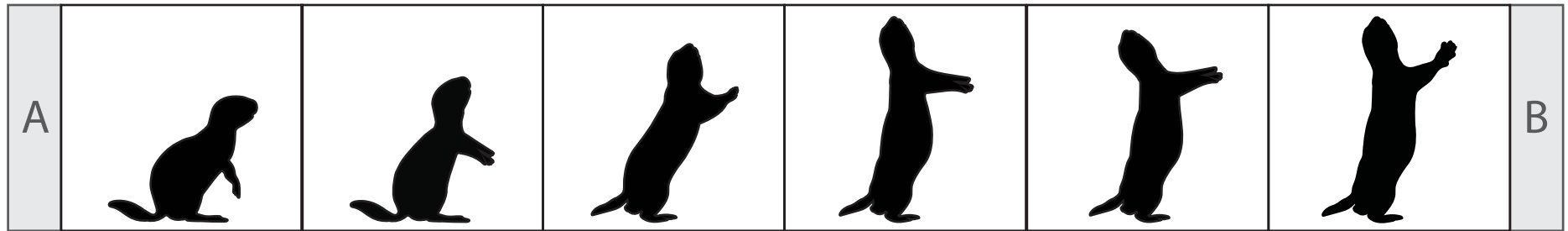
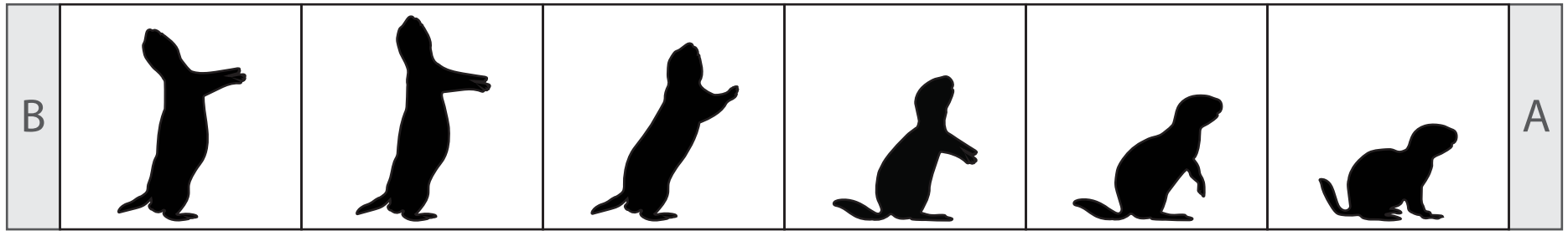
Instructions:

- Print to actual size for correct dimensions.
- Trace this template onto black/dark paper x 2 and cut out.
- You will have two pieces that will be joined at the “overlap” indicated here to form a circle for your zoetrope.

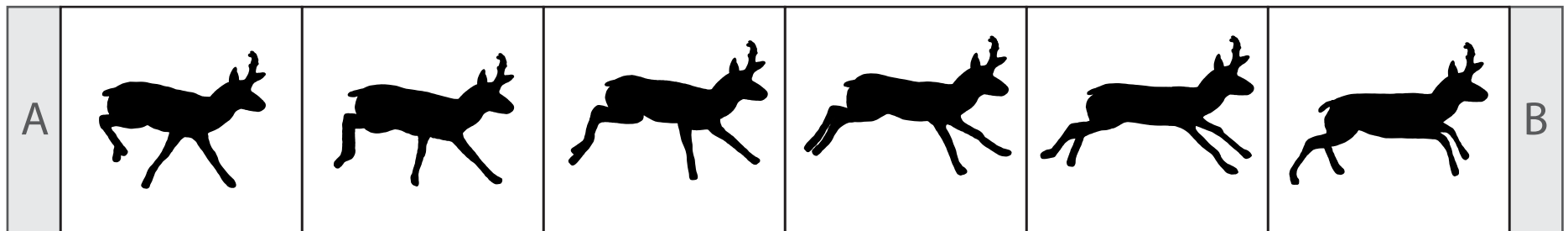
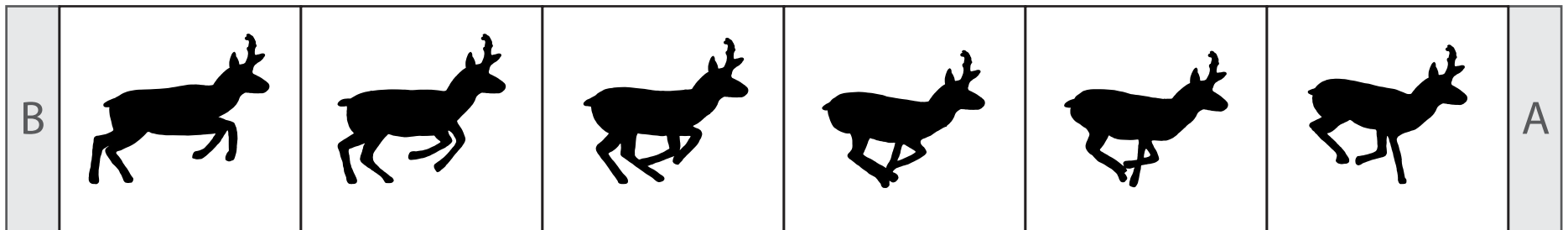
Bison Animation Strip (two sets)



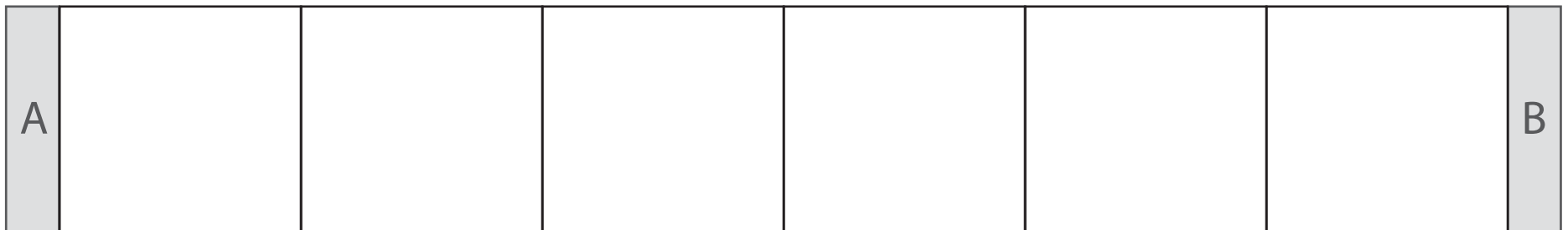
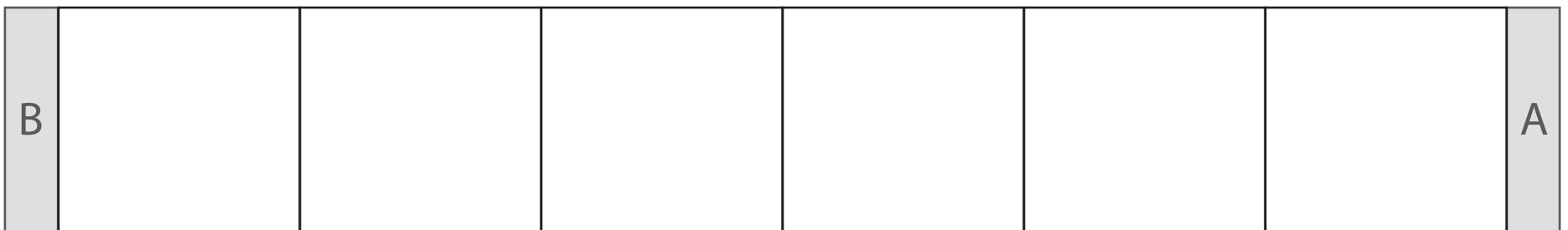
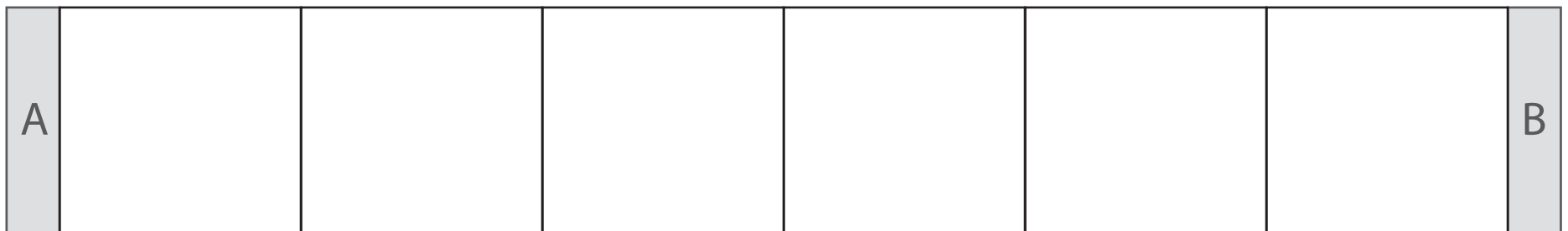
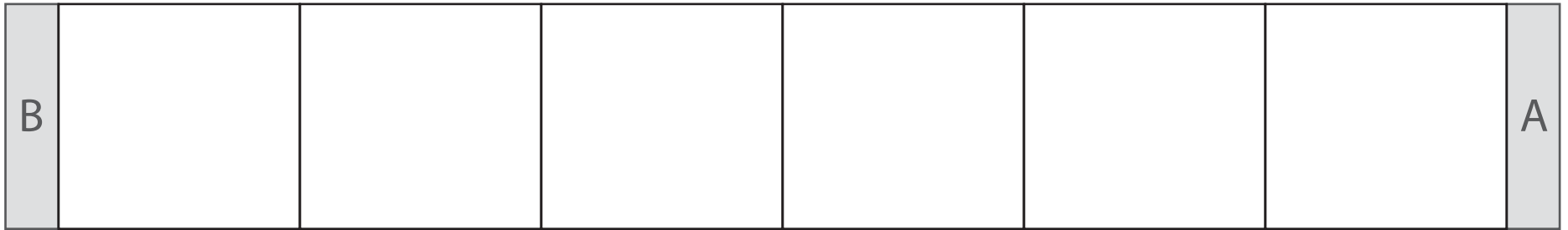
Prairie Dog Animation Strip



Pronghorn Animation Strip




Blank Animation Strips (To make your own zoetrope!)



Fascinating Flights Automaton Activity

Lesson 3

 **Big Question:** What are some popular Great Plains birds in the wild and how can we make them fly using cardboard?

 **Learning Objectives:** Students will be able to...

- Discuss the importance of some well-known Great Plains birds and their role in the environment.
- Construct flying bird machines (automatons) using basic craft materials.

Activity: Flying Bird Automaton

Notes on Lesson 3:

- Activities:
 - There are two activities. You may choose to do one or both.
 - The straw bird automaton activity has an easy level of difficulty and can be created individually in 1 day. The cardboard bird automaton has a medium level of difficulty and is designed as a group activity. This activity will take 2-3 days to construct all the parts.

Educator Prep:

- For the medium level activity, plan for students to work in groups of 3. They will each select a role (Artist, Engineer, or Architect) to complete their automatons.
- Print out enough bird templates for students to either work individually or in groups, depending on the easy or medium level activity selected.
- Look through the Activity Guide linked under “Materials” to get an overview of the activity process.

Warm Up:

- Ask – Have you ever seen an animatronic? Can you describe one that you saw?

Time: 1 - 2 hours*

*Note: This activity will take 2-3 days.

Materials:

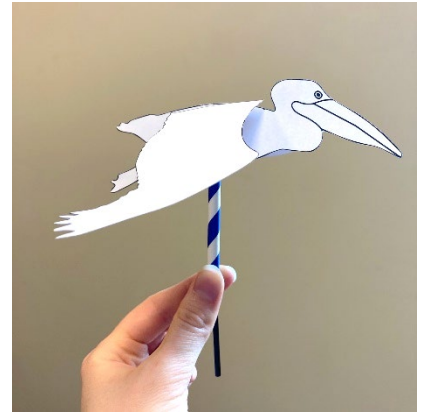
- [Bird Automaton Activity Guide](#)
- Automaton parts template (p. 19)
- Bird templates (pp. 20-23)
- Markers, crayons, colored pencils
- Cardboard
- Wooden dowels
- Straws
- Wooden beads
- Hot glue and stick glue
- Scissors
- Tape

- If this term is unfamiliar, ask if they have ever seen a robotic animal, such as a dinosaur at a museum or amusement park.
- Explain - An animatronic is a modern-day form of the automaton that uses electronics to create a self-powered machine. We will be making a much simpler automaton using straws and cardboard to make a bird fly and hop up and down.
- Show – An example of a cardboard automaton. Watch [Automata](#): 1:40 minutes (NUSTEM).

Procedure (two activity options):

Handheld Straw Bird Automaton | Level: Easy

- Open the [Bird Automaton Activity Guide](#) and project it or have students open it on their own devices. Walk through the lesson plan with students to first learn about four Great Plains birds.
- Next, have each student select one of the birds they just learned about from the printed-out bird templates.
- Start on Slide 7 to begin the automaton build process.
- Walk through the activity guide with students step-by-step until you finish.
- Once everyone has completed their automatons, test them out and share as a group!



Cardboard Bird Automaton | Level: Medium

- Split students into groups of 3. Each group will need to identify who will be the Artist, the Engineer, and the Architect. These three roles will work together to build the automaton.
- Open the [Bird Automaton Activity Guide](#) and project it or have students open it on their own devices. Walk through the lesson plan with students to first learn about four Great Plains birds.
- Next, have student groups select one of the birds they just learned about from the printed-out bird templates.
- Start on Slide 14 to begin the automaton build process:
 - The Artist will cut out the bird template, add color/pattern, and assemble.
 - The Engineer will build the cam and rotating axle system (aka the moving parts).
 - The Architect will construct the frame of the automaton.
- Walk through the activity guide with students step-by-step until you finish.
- Once everyone has completed their automatons, test them out and share as a group!

Reflection:

- Predict – For the cardboard automaton: Instead of the bird hopping up and down, how do you think you could make the wings flap up and down?
- Discuss – What parts of this activity were challenging and how did you overcome them?

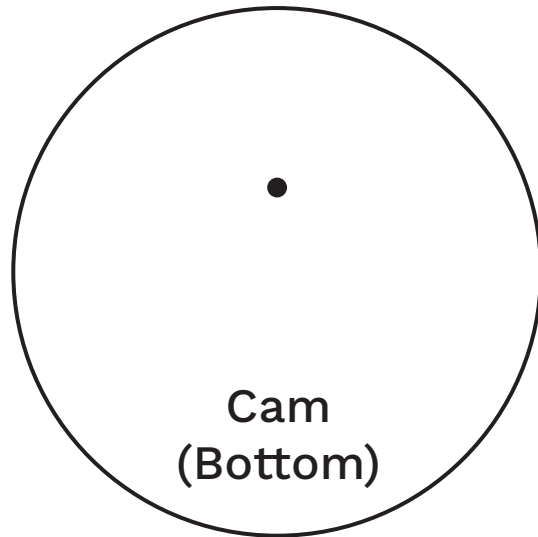
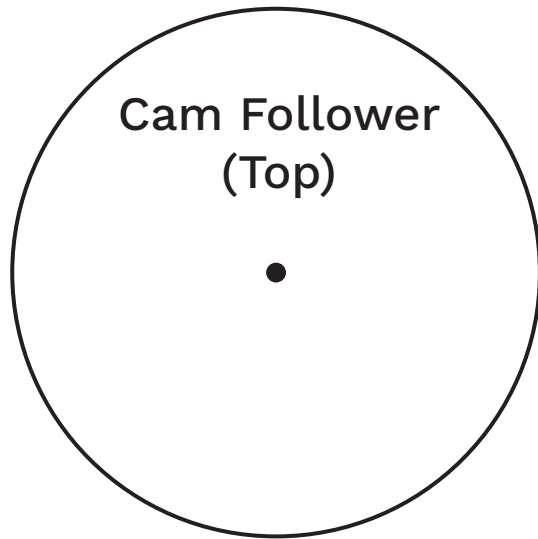


Example of completed cam and rotating axle system for the cardboard bird automaton.



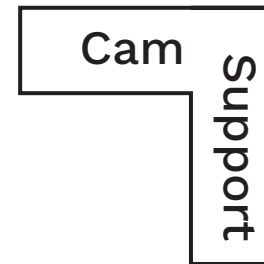
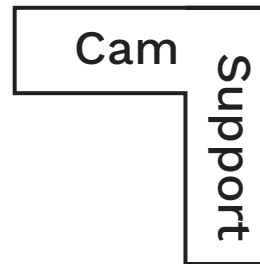
Example of completed cardboard bird automaton.

Printout Templates for Automaton Parts

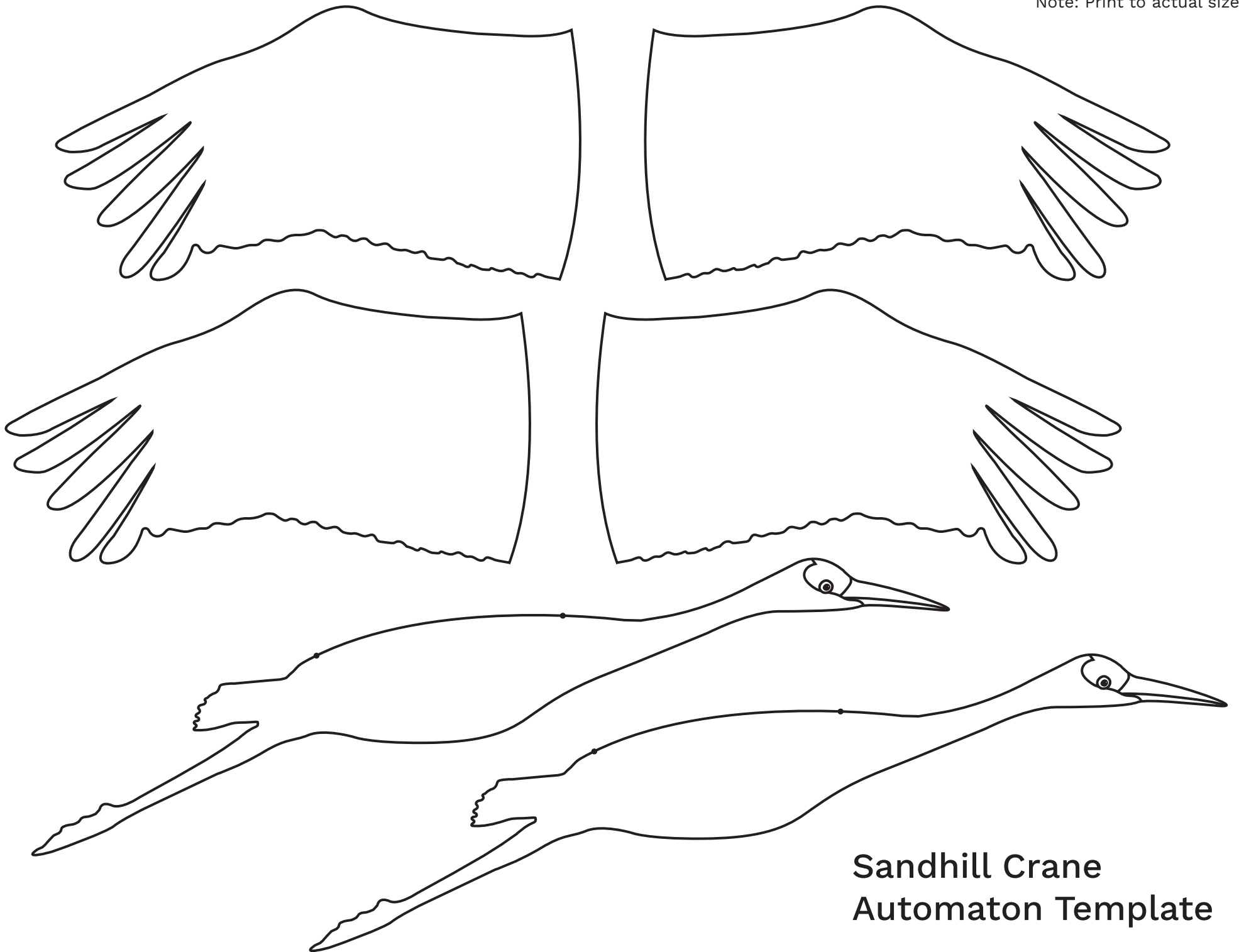


Instructions:

- Print to actual size for correct dimensions.
- Trace each template onto sturdy paperboard or cardboard.
- You will have one cam follower, one cam, and two cam supports.
- The following pages contain bird templates to print out on copy paper or cardstock (recommended).
- Cut out along the black lines and color the bird to make your own unique automaton. Attach the wings using tape between the two black dots on the body.

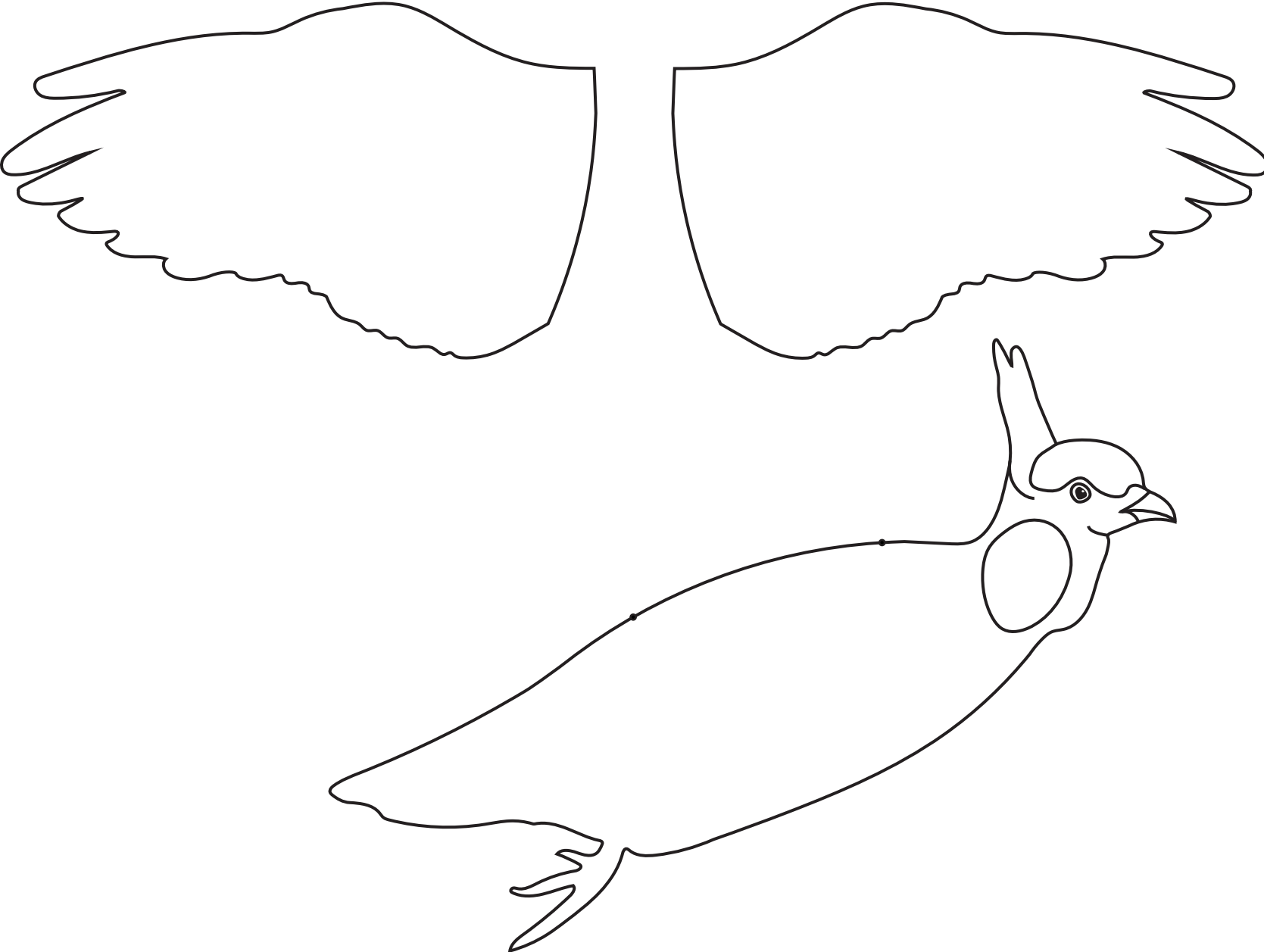


Note: Print to actual size.

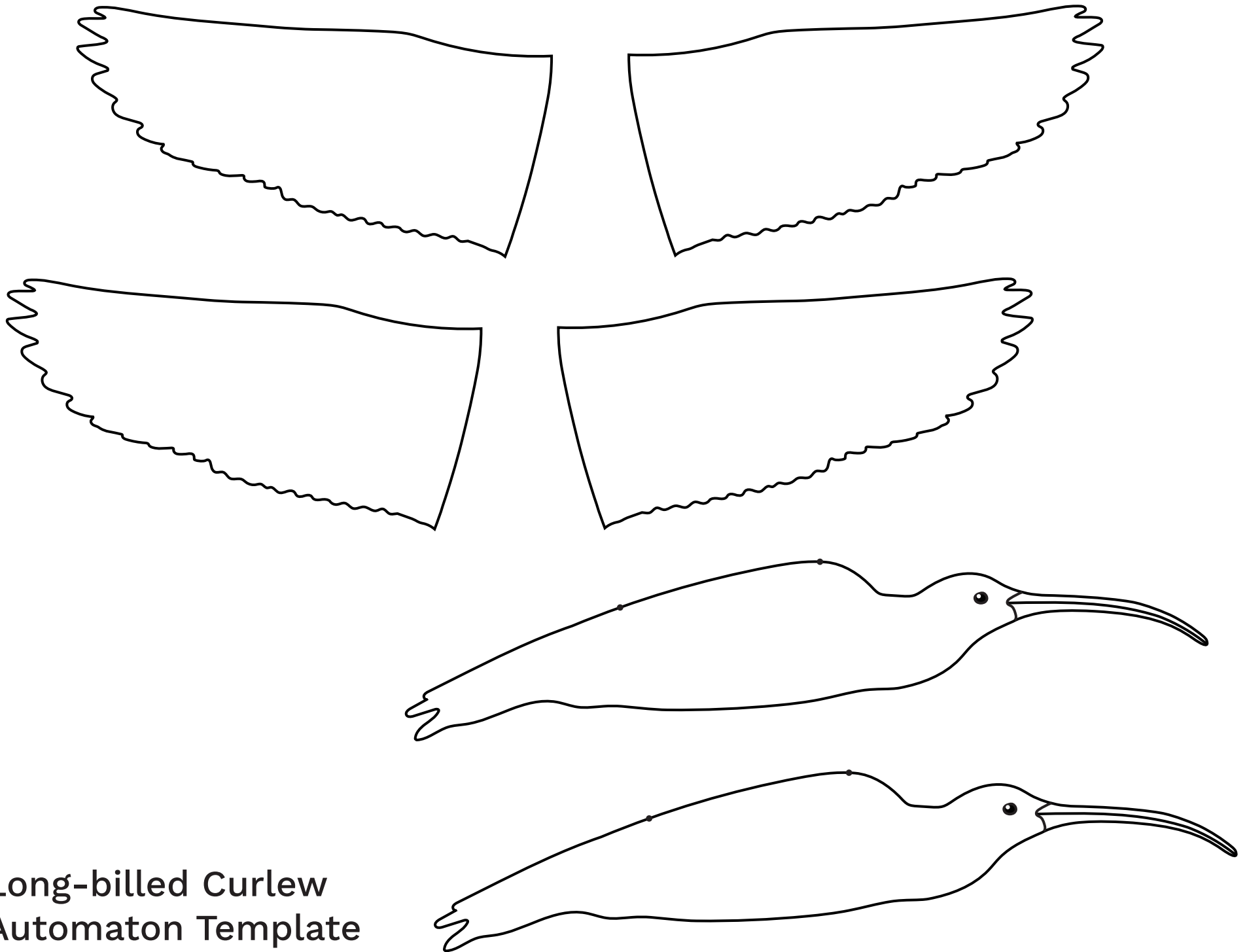


**Sandhill Crane
Automaton Template**

Greater Prairie-Chicken Automaton Template

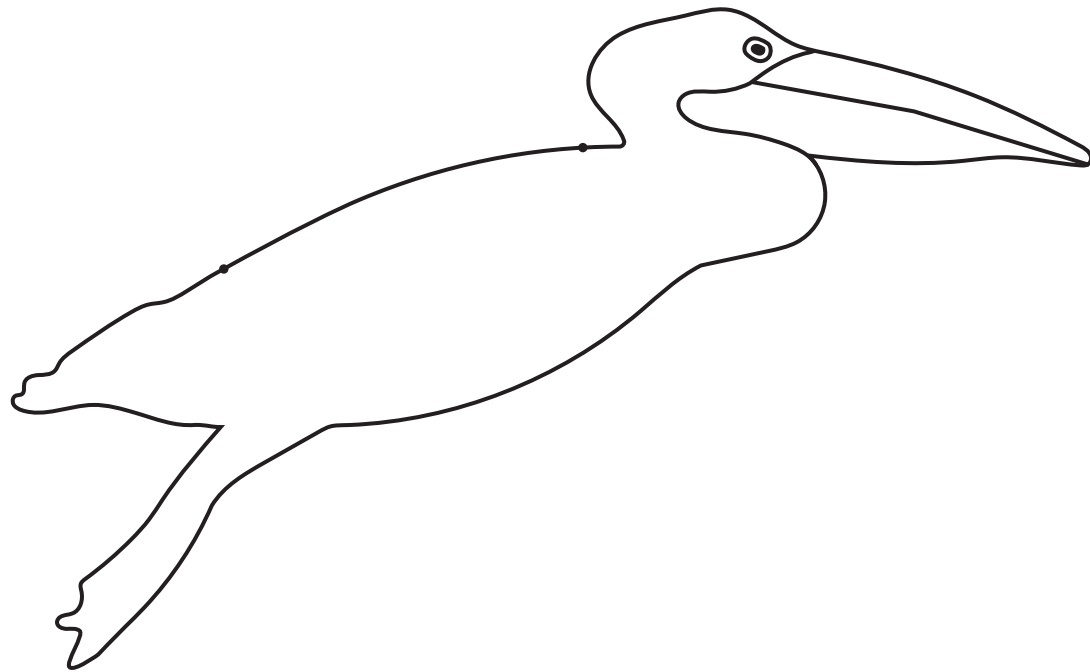
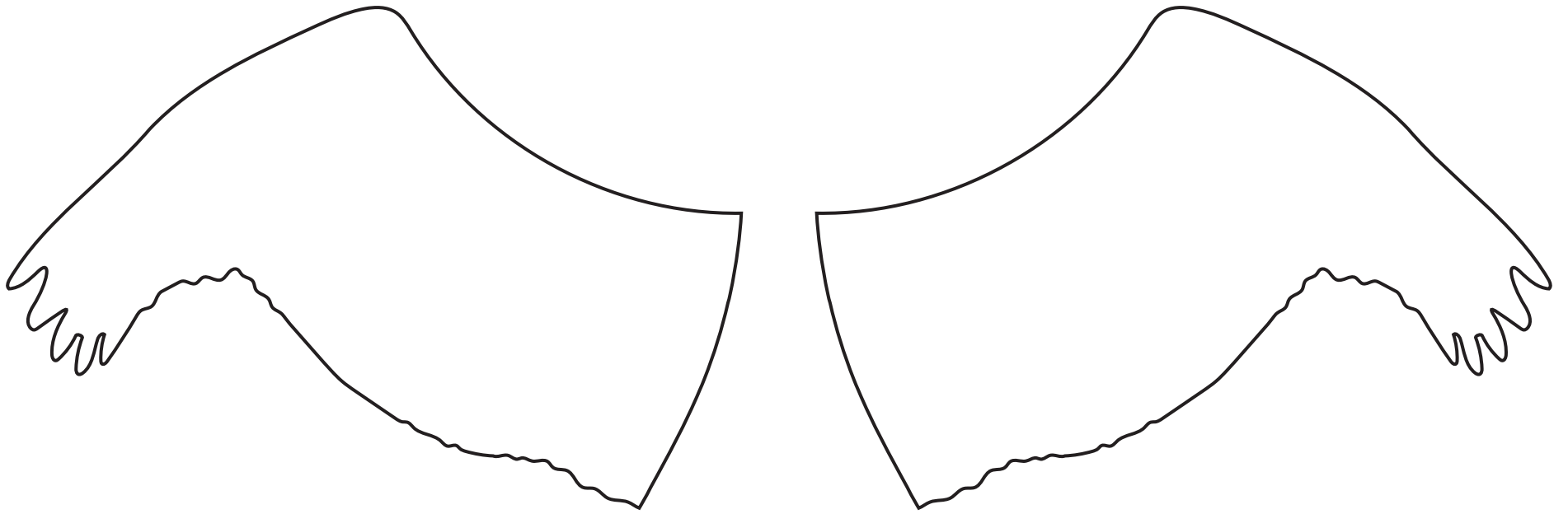


Note: Print to actual size.



Long-billed Curlew
Automaton Template

Note: Print to actual size.




American White
Pelican Automaton
Template

Note: Print to actual size.

Test Your Knowledge: Great Plains Jeopardy!

Lesson 4

 **Big Question:** How much do you know about the Great Plains? Create a team and test your knowledge on the regional plants, animals, people, and geography.

 **Learning Objectives:** Students will be able to...

- Apply knowledge about the Great Plains in an online Jeopardy-style game.
- Practice team communication and critical thinking by working collaboratively to solve questions.

Activity: Great Plains Jeopardy Game

Educator Prep:

- Click on the [Great Plains jeopardy game](#). Pull up the game on a projector for everyone to see the game board.
- The rules of this Jeopardy game are a little bit different than traditional Jeopardy to encourage more participation. Students are split up into smaller groups rather than dividing the entire group in half. For every round, all teams have a chance to answer the question. In this way, more than one team can gain points per round. Use your best judgment for a time restraint to answer (e.g., 30 seconds to 1 minute).
- If you have a smaller group, you're welcome to play the traditional way with two teams (i.e., if Team 1 answers incorrectly, Team 2 has a chance to "steal the question").

Time: 30 minutes

Materials:


- [Great Plains jeopardy game link](#)
- Laptop and projector
- Something to write answers:
 - Paper/pencil, dry-erase marker/whiteboard, or tablet drawing app

Warm Up:








- Ask – Who has played Jeopardy before?

Procedure:


- Split students into teams of 3-5.
- Have students create a team name. Rename each team on the Flippity game board by clicking on "Team 1" for example.
- Explain – Rules of the Game:
 - Each team must designate a speaker to announce answers when called on. Students can take turns announcing throughout the game.

- The game host will read the question and keep time (30 seconds – 1 minute) as teams work to decide on an answer. The game has a built-in timer. Click the three purple dots in the lower-right corner and select the timer .
- Teams are allowed to discuss quietly before answering and write their answers down on paper/whiteboard/drawing app.
- The game host will select a team at random to pick the first category and point value. After, teams will pick categories/point values on a rotation.
- Teams will lose 100 points for unkindness (e.g., talking over others, rudeness, yelling, etc.)
- In Final Jeopardy, each team creates a final point value at or below their current score to wager.
- The game ends when all questions have been answered. The team with the most points wins.

	Plants	Geography	Misc.	Animals	Insects
Team 1 0	100	100	100	100	100
Team 2 0	200	200	200	200	200
Team 3 0	300	300	300	300	300
Team 4 0	400	400	400	400	400
	500	500	500	500	500

- Begin the game by selecting a team at random to select a category and point value. Read the question aloud and start the timer. Once the timer is up or until all teams have decided on an answer, call on all teams to announce their answer. Assign point values accordingly.
- Continue playing according to the rules.
- Once all points have been cleared from the board, begin Final Jeopardy. Teams will select a point value to wager and submit this secretly on a piece of paper to the game host to prevent cheating.

- Click on the omega sign  at the bottom to open the Final Jeopardy question (Native American History). Assign the point values that teams will wager under team names (example here shows 1500).
- Read the final question and start the timer. Students can have a longer time (e.g., 1 minute) to write down their answer. Once the timer is up, all teams will announce the answer. Those who answered correctly will have their wagered points added. Those who missed the question will have their wagered points subtracted.
- The game host will tally up the final points and announce the winner.




Reflection:

- Discuss – What aspects of the game were easy and which ones were challenging? How did your teams work together to problem solve trivia questions?

Design Challenge: Create a Photo Collage Travel Poster for Visiting the Great Plains!

Final Project

 **Big Question:** How would you tell the story of what makes the Great Plains “great”? How can you tell this story by designing a photo collage inspired by travel posters?

 **Learning Objectives:** Students will be able to...

- Demonstrate knowledge about characteristics of the Great Plains (e.g., animals, environments, places to visit).
- Apply art and design principles of storytelling using photography.
- Collaboratively design a travel poster to advertise what makes the Great Plains great and why people should visit.

Activity: Design a Great Plains Travel Poster

Educator Prep:

- Plan for students to work in groups of 2-4 to build their travel posters.
- Bring examples of travel advertisements from tourism magazines or browse the internet with students.

Warm Up:

- Watch [Discover America’s heartland, the Great Plains](#): 4:44 minutes (The Nature Conservancy)
- Discuss – How does the photographer use photos to help people learn and appreciate the Great Plains? Which photo in the video was the most interesting to you?

Step 1: Design Planning

- Intro – Explain to students they will be designing travel posters that tell their story about what makes the Great Plains great.
 - Students will work in teams of 2-4 to take photos to document what they like about living here and what it means to call this place home.

Time: 2 - 3 hours*

*Note: This activity can take up to 2 - 3 days.

Materials:

- Poster foundation
 - Large construction paper (e.g., 12” x 18”)
 - Poster board (e.g., 14” x 22” or 22” x 28”)
 - Flat piece of cardboard
- DIY instant digital cameras
- Colored construction paper
- Coloring materials: Markers, crayons, colored pencils
- Glue sticks
- Pencils
- Scissors
- Optional: Travel magazines; [Great Plains postcards](#)

- The goal is to create a poster that would inspire tourists to come visit and appreciate our home in the Great Plains.
- Gather Inspiration - Start off by showing examples of travel posters and travel photo collages. You can find these in NE tourism magazines or reference the [Great Plains Ecotourism Coalition posters](#). A good place to reference is also [online collections of vintage travel posters](#).
- Encourage students to sketch a layout of their poster design before taking photos to determine what they would like to include and document in the final design.

Step 2: Photo Exploration

- Once students have a rough design for their travel poster, they can begin taking photos. Encourage them to take photos inside and outside around the school. To give them some ideas of what story they can tell about the Great Plains, suggest taking photos that follow prompts such as:
 - Something beautiful that is found outside
 - A typical day
 - The colors and mood of the Great Plains
 - Friendliness of the people here
 - Places to see / fun things to do
- Encourage students to use their imagination in taking photos. They can always add drawings later or magazine clippings to add details that may be difficult to capture with the camera.

Step 3: Poster Creation

- The next step is to prepare all the poster-making materials and have students work together in their teams to complete the final design. In their poster, students should have:
 - A title
 - Photos* and drawings
 - *Because the photos are black-and-white, students can always add color with colored pencils, markers, or crayons
 - Descriptions of the photos and/or drawings

Step 4: Poster Review and Group Share

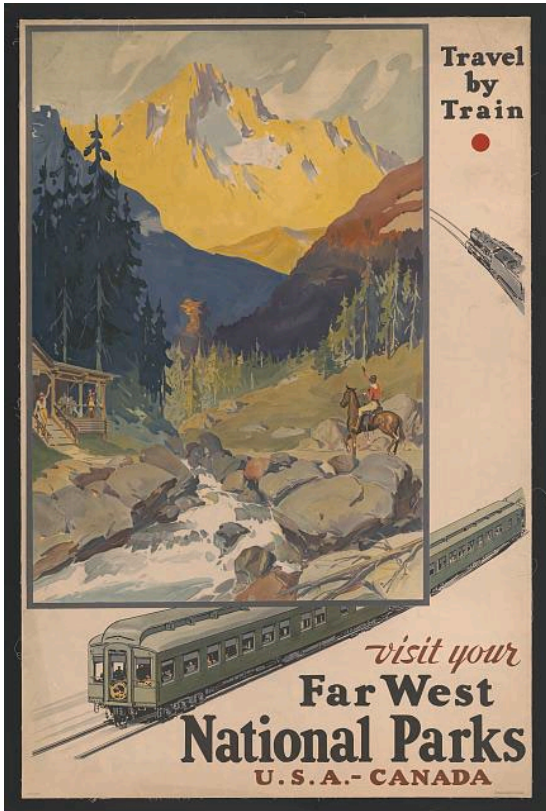
- Once everyone is finished, have each group share their poster and their design process.
- Ask – How did each of you combine your stories into the poster? What did you learn? What was challenging and how did you overcome these challenges?
- Celebrate each team’s design and a job well done.

Enrichment:

- Consider sharing travel posters in a parent/community showcase. For a longer, temporary display, you can consider hanging posters up in a school hallway to share with everyone.

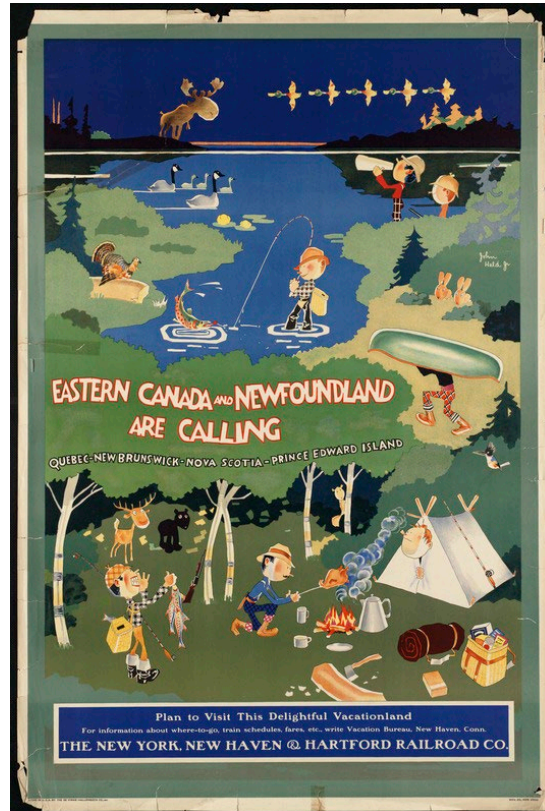
Examples of Travel Posters:

Note: Students should have more of a collage/scrapbook style of poster to help with design composition.



(1920) Visit your far west national parks Travel by train. United States, 1920. [Chicago: Newman-Monroe Co., s] [Photograph].

<https://www.loc.gov/item/2018646001/>



Held, J. (1926). Eastern Canada and Newfoundland are calling [Poster]. [CC BY-NC-ND](https://creativecommons.org/licenses/by-nc-nd/4.0/) License.

<https://ark.digitalcommonwealth.org/ark:/50959/5999n618x>



GREAT PLAINS ECOTOURISM COALITION

CENTER FOR GREAT PLAINS STUDIES, LINCOLN, NEB.
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[Examples of Great Plains Travel Posters](#)