BioBlitz Aquatic Life

Big Question:

How do rivers and streams form and what lives in and near them?

Set the Stage:

Water is the key to all plant, animal, and human life! What parts of the water cycle can you see in your backyard or local park? Understanding the plants and animals in and near the water is key to understanding the environment so let's see what we can find!

Resources:

This activity has students look for bugs, animals and plants around water. Try to identify what you find with a field guide (https://aquaplant.tamu.edu/plant-identification/, https://3jgs2o4a02n22u73bi2gnd3l-wpengine.netdna-ssl.com/wp-content/uploads/StroudWebsiteMacroKeyFNL.pdf) or the iNaturalist app.

Activity:

Procedure:

- Ask students if they know about the water cycle and discuss how water moves through systems and into their lives.
- Create a "watershed" with students in a paint tray or Tupperware bin with dirt, sand, gravel, and other natural materials in the area. Show how rivers and streams are formed and talk about different habitats they create.
- Allow students to change the "watershed" and create new rivers and valleys. (Enrichment: introduce "pollutants" that can float downstream or change the color of the water to show impact of pollution and runoff)
- Have students observe plants around a body of water in their yard or nearby park. Consider diversity of plants, looking at where they grow and how plants in the water are different than plants on the shore and plants further up the bank on land. Take notes, draw pictures, and try to identify with iNaturalist.
- Using nets, buckets, and other tools observe and safely collect insects in ice-cube trays to study and identify with iNaturalist or field guides.

Note to Facilitators: Have a washing station prepared as students may get dirty!

Reflection

To communicate their observations: "I saw…"
To reflect on diversity of what they found: "I thought…but then…"
To demonstrate science community skills: "I liked…" or "loved…"

Enrichment – Keep track of species found and repeat the BioBlitz Aquatic Life activity every 3-4 weeks to see how the environment changes with the seasons and weather!

Materials:

- Paint tray or Tupperware bin
- Loose dirt, gravel, and sand
- Water buckets
- BioBlitz Kit
- Magnifying Glasses
- Mini Microscopes
- Butterfly Nets
- Ice-cube trays
- Paper, pencil, and clipboard to write on
- Aquatic Life Field Guide
- Local Wildlife Guide
- Smartphone with iNaturalist app

Standards:

BSB: The Do Place: NGSS - 2-PS1.A.1; K-PS2.A.2; K-PS3.C.1; NS 4D/P1
BSB: The Do Place: NGSS - 2-PS1.A.1; K-PS2.A.2; K-PS3.C.1; NS 4D/P1

BioBlitz Aquatic Life

1. **Draw a river or stream in a watershed (be creative!):**

2. **Describe and draw some plants you found growing in the water or on the shore:**

3. **Describe and draw an insect or animal you found in or near the water. Where do you think it came from and where do you think it is going? What kind of animal or insect do you think it is?**

4. **How do you think the watershed, plants, animals, and insects contribute to the environment? Do you think it is healthy? Why or Why not? How can we improve it?**

Standards:

BSB: The Do Place: NGSS - 2-PS1.A.1; K-PS2.A.2; K-PS3.C.1; NS 4D/P1

BSB: The Do Place: NGSS - 2-PS1.A.1; K-PS2.A.2; K-PS3.C.1; NS 4D/P1

BioBlitz Habitat and Plant Life

Big Question:

Plants are all around us, but what kind of habitat do they provide for the environment?

Set the Stage:

Plants are everywhere, but they are different based on factors like climate, water, sun, and other factors. They help create habitat for all kinds of other organisms, so it is important to understand them. Let's see what plants and habitat are near you!

Resources:

This activity has students look for all kinds of plants in their backyard, park, or natural areas near them. Try to identify what you find with a local field guide or the iNaturalist app. Consider the importance of plant diversity to provide habitat and food for all kinds of bugs, birds, and other animals in the environment.

Twenty20

Activity:

Procedure:

- Talk about different habitats that students can see in different areas of the field as well as what they know at home and why they think diversity of habitats is important.
- Have students search the field for unique plants and take pictures or draw what they find noting some of the things that they like, and think are interesting. Use the iNaturalist app to identify plants.
- Have students come up with their own name for the plant they have chosen to draw (ex. Red Wing because of red leaves that look like wings)
- After students come up with a name, have them come up with a story about the plant they have chosen and named
- Share unique plant names and stories

Reflection

To communicate their observations: "I saw…"
To reflect on diversity of what they found: "I thought…but then…"
To demonstrate science community skills: "I liked…" or "loved…"

Enrichment – Keep track of species found and repeat the BioBlitz Aquatic Life activity every 3-4 weeks to see how the environment changes with the seasons and weather!

Materials:

- BioBlitz Kit
- Paper and pencils or crayons
- Magnifying Glasses
- Mini Microscopes
- Clipboard to write on
- Local Plant Guide
- Smartphone with iNaturalist app

Standards:

BSB: The Do Place: NGSS - 2-PS1.A.1; K-PS2.A.2; K-PS3.C.1; NS 4D/P1
BSB: The Do Place: NGSS - 2-PS1.A.1; K-PS2.A.2; K-PS3.C.1; NS 4D/P1

BioBlitz Habitat and Plant Life

1. **Describe the unique plant you found in the field. Draw the plant and show where you found it in the field.**

2. **Come up with a creative name for your plant:**

3. **Come up with a story about your plant. You can write or draw your story:**

Standards:

BSB: The Do Place: NGSS - 2-PS1.A.1; K-PS2.A.2; K-PS3.C.1; NS 4D/P1

BSB: The Do Place: NGSS - 2-PS1.A.1; K-PS2.A.2; K-PS3.C.1; NS 4D/P1

BioBlitz Animal Life

Big Question:

What animals live in your backyard? How many are there

Set the Stage:

There are all kinds of animals in your backyard that you may or may not know of, but their presence creates a healthy habitat! It is important to know how many insects, birds, and mammals are near you to keep the environment healthy, so lets find out!

Resources:

This activity has students look for bugs, birds, and any other animals they can find. Try to identify them with a field guide (http://archive.fieldmuseum.org/undergroundadventure/kidzone/pdfs/Soil_Critter_Field_Guide.pdf) or the iNaturalist app.

Activity:

Procedure:

- Spend a full minute being silent to listen for birds. Note how many calls you hear
- Use available tools to uncover, dig, and search for insects and decomposers. Use Microscopes and magnifying glasses to identify what you find and record the name, number, and where you found them on a worksheet.
- Spread out and Search for different species of insects throughout the field. Collect species and try to identify them with the field guide or iNaturalist app. Take notes and draw pictures on your worksheets.
- Take photos or draw pictures to document what you find.
- Search for birds and mammals in the field and trees. Count the different species you see and take notes. Use a bird guide or iNaturalist to try to identify species.

Note to Facilitators: Have a washing station prepared as students may get dirty!

Reflection

To communicate their observations: "I saw…"
To reflect on diversity of what they found: "I thought…but then…"
To demonstrate science community skills: "I liked…" or "loved…"

Enrichment – Keep track of species found and identified and repeat the BioBlitz Animal Life activity every 3-4 weeks to see how the environment changes with the seasons. And weather.

Materials:

- BioBlitz Kit
- 4 pencils
- 6.5 feet of string
- Magnifying Glasses
- Mini Microscopes
- Butterfly Nets
- Hand-shovels
- Paper, pencil, and clipboard to write on
- Soil Critter Field Guide
- Local Bird and Wildlife Guide
- Smartphone with iNaturalist app

Standards:

BSB: The Do Place: NGSS - 2-PS1.A.1; K-PS2.A.2; K-PS3.C.1; NS 4D/P1
BSB: The Do Place: NGSS - 2-PS1.A.1; K-PS2.A.2; K-PS3.C.1; NS 4D/P1

BioBlitz Animal Life

1. **Be very silent and listen for birds and insects. How many bird calls did you hear in 1 minute?**

2. **Were you able to see any of the birds? What did they look like? Draw a picture of what you saw:**

3. **Pick an area to study (can be in a garden, in the soil, in a tree, or any other area). How many kinds of insects can you find?**

4. **Draw one here: (note how many legs it has, does it have wings, is it hairy or hard, and any other details you see)**

5. **If you were the first to find that kind of insect, what would you name it?**

6. **How many other animals can you find (squirrels, opossums, birds, bunnies…)**

7. **Did you find anything surprising today? What was it and why did it surprise you?**

Standards:

BSB: The Do Place: NGSS - 2-PS1.A.1; K-PS2.A.2; K-PS3.C.1; NS 4D/P1

BSB: The Do Place: NGSS - 2-PS1.A.1; K-PS2.A.2; K-PS3.C.1; NS 4D/P1