This activity is made possible through a partnership between ASU-Mountain Home's Teacher Education program and Friends of the North Fork & White Rivers.

Build Your Own Ecosystem

Grade Level: 6-8

Subject:

Standards:7-LS2-2 Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems

[Clarification Statement: Emphasis is on predicting consistent patterns of interactions in different ecosystems in terms of the relationships among and between organisms and abiotic components of ecosystems. Examples of types of interactions could include competitive, predatory, and mutually beneficial.]

Ecosystems are dynamic in nature; their characteristics can vary over time. Disruptions to any physical or biological component of an ecosystem can lead to shifts in all its populations

7-LS2-5 Evaluate competing design solutions for maintaining biodiversity and ecosystem services.*

[Clarification Statement: Examples of ecosystem services could include water purification, nutrient recycling, or prevention of soil erosion. Examples of design solution constraints could include scientific, economic, and social considerations.]

Biodiversity describes the variety of species found in Earth's terrestrial and oceanic ecosystems. The completeness or integrity of an ecosystem's biodiversity is often used as a measure of its health. (7-LS2-5)*

Materials:

1. Mason Jar
2. Rocks
3. Dirt
4. Plants/Flowers/Vegetation
5. Driftwood/Sticks
6. Small wildlife (tadpole, bug, small fish, crawdad)

7. Water from creek
8. Small plastic animal toy is optional
9. Biodiversity worksheet.

Time: 90 minutes-2 Days

Introduce and demonstrate skill/strategy/content: Students will be identifying all forms of life that interact in the surrounding area. Students will be constructing their own ecosystem in a jar to observe in class together. Students will complete their biodiversity worksheet.

Describe guided practice:

(While creating an ecosystem students will be asked to complete some of the questions on the biodiversity worksheet, the rest can be completed as homework or in class)

1. Gather rocks or gravel from the creek.

2. Scoop dirt or mud onto rocks.

3. Find plants growing around the creek. This includes flowers.

4. Find any driftwood or objects you think would be nice in your mini-environment.

5. If possible, small wildlife like snails or tadpoles can go into your ecosystem as well.

6. Fill with water and close the jar.

7. If you do find small wildlife be sure you put holes into the lid of your jar.

8. Keep in class and observe for a couple of days.

Review/Independent Practice: Building the ecosystem can be done independently or as a group. All students will bring their jars and worksheets back to class to discuss and be graded.

Formative Assessment/Summative Assessment:

Biodiversity Worksheet (attached)

Name:

Date:

Teacher:

Biodiversity Worksheet.

- *Biodiversity describes the number of different kinds of organisms in an ecosystem.*
    - *Scientists measure biodiversity to determine an ecosystem's health.*
- *Humans depend on healthy ecosystems for food, medicine and clean water.*

1. What kinds of resources do humans use from ecosystems?

2. Give 2 examples of biodiversity you find in your ecosystem:

3. What is the keystone species and why is it important to an ecosystem?

4. Give an example of a keystone species.

5. Besides plants, do other organisms get their energy from the sun?

6. How can we measure the health of an ecosystem?

7. Explain why biodiversity in an ecosystem is important.

8. What is a bioindicator? Give an example.

9. How do humans help protect the biodiversity in some ecosystems?

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