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Principles of Field Leadership  
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### **Lesson Plan: Local Flora and Fauna**

**Goals and Outcomes:** At the end of the lesson, students will be able to

1. Differentiate between hard and soft wood forests
2. Identify characteristics of Gorge and Upland vegetation
3. Explain importance of respecting local flora and fauna

**Participant Prerequisites:** There are no prerequisites for participants to reach the outcomes of this lesson.

**Resources:**

***Time:*** 5-8 minutes

***Site:*** Preferably, an open area with examples of both hardwood and softwood trees and a view of both the gorge and upland areas.

***Equipment:*** Pictures of hard and softwood trees and native species.

**Management and Safety:**

If the lesson plan is conducted outdoors, instruct students to bring gear for the weather and to wear sunscreen and bug spray. The instructor and the students should pay attention to their surroundings and be aware of bugs, poison ivy, snakes, spiders, etc. The instructor will do her best to choose a site with minimal hazards but will instruct students to be prepared.

**Background Content:**

1. Gorge Vegetation: moist, deep, rich soils (show pics)
  - a. Intense slopes with hardwoods (angiosperms – deciduous trees)
  - b. Intermittent pine and evergreens offer shade for cooler creek temperatures, crucial for creek ecosystems
  - c. Good for Spring flowers
2. Upland Vegetation: gentle topography, sandy soils, well-drained, not as rich.
  - a. Fields from farmer homesteads.
  - b. Mixed-oak forests with thinner soils having pines
3. Hardwoods (angiosperms) are flowering trees that have nuts, berries or flowers.
4. Softwoods (gymnosperms) are nonflowering evergreen trees
5. Animals – show pics
  - a. Black bears, white-tailed deer, bobcats, gray fox
  - b. 60 species of fish
  - c. 160 species of birds

**Teaching Methods (HOW)**

**FRAMING:** What have you seen in the BSF so far? We are going to learn about different types of vegetation zones and animals we might see in each.

1. Ask participants to think about what they enjoyed about the BSF thus far.

2. Discuss there are two main areas:
  - a. Gorge Vegetation Zone:
  - b. Upland Vegetation Zone:
3. Ask what characteristics they think they might find in each area.
4. Explain different types of soils and forests.
  - a. Angiosperms
  - b. Gymnosperms
5. Animals: what types of animals are we expecting to see in different areas?
  - a. Bears, deer, raccoons, armadillos, squirrels, birds, fish

CLOSING: Understanding vegetation can help foster connections to the area and aid in a deeper love and respect for the environment.

Assessment of Student Learning:

1. Ask what type of forest and vegetation zone are we in right now? What types of animals might we see?

Adaptations:

1. Remediation: if the students are struggling meeting the outcomes, the instructor will go into more detail with the following:
  - a. Difference between angiosperms and gymnosperms.
  - b. Why different animals can be expected in certain areas.
2. Enrichment: if the students have reached competency quickly, the instructor will go into more detail with the following:
  - a. Different types of species of plants or animals.
  - b. Why these species grow in particular types of soils.

References

Animals. (n.d.). Retrieved May 17, 2017, from <https://www.nps.gov/biso/learn/nature/animals.htm>

Gorge Vegetation Zone. (n.d.). Retrieved May 17, 2017 <https://www.nps.gov/biso/learn/nature/gorgeplants.htm>

Nix, S. (n.d.). The major differences in hardwood and conifer trees. Retrieved May 17, 2017, from <https://www.thoughtco.com/difference-between-hardwood-softwood-trees-1341883>

Upland Vegetation. (n.d.). Retrieved May 17, 2017 <https://www.nps.gov/biso/learn/nature/uplandplants.htm>

