• The Standards in this Science Trail are Indiana Academic Standards.

## **Science Trail**

- **Common Theme:** Ecosystems pond, prairie, and forest
- **Grade:** 4<sup>th</sup> Grade
- **Standards:** 4.2.5, 4.4.1, 4.4.2
- Science Trail:
  - **Directions/Map:** included in student packet. A teacher will also be in each of the groups to help the students get to the correct stops.
  - Introduction to Trail:
    - Are you ready to take a trip? Well, I hope you are because today is the day we will be visiting three different ecosystems. An ecosystem can be different sizes and is any group of living and nonliving things that interact with each other. Everyone will be divided into three different groups. On your trip you will make three different stops. These stops will be the pond, prairie, and forest. At these three stops you will learn about the ecosystem, answer questions in your passport, and be involved in an exciting science activity. Make sure you have a pencil and your passport because we are ready to embark on a great trip!
  - **Stop # 1:** 
    - **Objective:** When given a group task the students will follow directions with 100% accuracy.
      - Hands-on Activity:
        - Materials:
          - o 3 Baskets
        - Directions:
          - This is a group activity. It is important for each team to work together because teamwork will allow success. Each group will be given a basket. Read each of the three clues on the right side of this page. Use the clues and your teammates to find the mystery objects. When your group thinks it has the correct mystery objects place one sample into the basket. Each group should only have three objects in their basket at the end of the activity. Once our trip ends we will meet in the classroom and the teacher will show the students the correct mystery objects. After the mystery objects have been identified the teacher will see which groups find the correct objects. The groups who find the correct objects will receive a prize.
        - Clues:
          - This object is green. Look up, not down because it will not be found on the ground. It comes in three shapes. The shapes may be circular, three-lobed leaf, or mitten like.

You will find a fruity smell if you scratch the stem of this leaf.

- This object is small and brown. Look down and not up because it will be found on the ground. It falls from trees. Squirrels like to eat this object.
- This object is green and fuzzy. It grows on trees and dead, fallen logs. This object is easily found half way through your walk in the forest.
- Assessment:
  - Each group will be assessed in this activity. Each group must read the directions, clues, and work as a team to find the mystery objects. The group will successfully complete the objective if the basket they turn in has three mystery objects. The students are not being assessed on finding the correct mystery objects, but turning in a basket with three objects they feel are the correct mystery objects.
- Stop # 2:
  - **Objective:** The students will write a minimum of four findings when given two different water samples with 100% accuracy.
  - Hands-on Activity:
    - Materials
      - o 2 Microscopes
      - One table to sit the microscopes on
      - Cup to get water sample from the pond
      - Container with water sample of school water
      - 6 Petri dishes (2 for each group)
    - Directions
      - The teacher in your group will get several samples of water from the pond. There will be two microscopes at this stop.
      - Each student will look through the microscope and observe the difference between pond water and school water.
      - In the observation box you will write about what you saw. Write at least 4 findings.
      - If you would like you can draw a picture to go with what you write.
  - Assessment:
    - In the student packet there is a box for the students to write out their findings after observing the two water samples. The students will successfully complete the objective if they write at least four findings from their observation. At the end of the science trail activity the students will turn in their Passport to Ecosystems packet to the teacher.
- Stop # 3:
  - **Objective:** When given different soil samples the students will verbally hypothesize what type of soil is in the prairie in one to two sentences.
  - Hands-on Activity:

- Materials:
  - Soil samples: sand, silt, and clay
  - 3 bowls for soil samples
  - 2 small shovels (students will use to see soil type in prairie)
- Directions:
  - The students will observe, touch, and smell different samples of soil. The soil will be in bowls at the prairie area for the students.
  - The students will hypothesize about what type of soil is in the prairie by explaining their hypothesis to the teacher in one to two sentences.
  - After hypothesizing the students will be given a chance to dig in an area in the prairie to see what type of soil is really in the area.
  - After discovering the type of soil in the prairie the students will write about their findings in the box on the right.
    Write about what you hypothesized, saw, smelled, and felt during the activity.
- Assessment:
  - Each student will tell their hypothesis about the type of soil in the prairie to the teacher in one to two sentences. The student will successfully complete the objective if they tell their hypothesis to the teacher in their group. The teacher in the group will make a check by the name of each student who tells their hypothesis to the teacher.

## • Closure:

The students will meet back in the classroom and discuss their experience. They will write out a response to the two questions asked at the in of their Passport to Ecosystems packet. The ecosystem topic will be further explored through a WebQuest activity.