

# School Field Trip

## Where the Wild Things Are

**Length:**  3 hours

**Grades:** 2nd – 3rd grade

**Maximum # of Kids:** 30

**Description:** Students transform into scientists as they investigate the diversity of plants and animals in Irvine’s stream, meadow, and forest habitats. Students receive hands on instruction through a station based field trip.

**Goals:**

1. Investigate different habitats in search of biodiversity.
2. Determine the diversity of organism in Irvine’s meadow, stream, and forest habitats.
3. Investigate plant and animal adaptations to survive in their given habitat.
4. Use the scientific method to determine which habitat has the most diversity or organisms.
5. Have fun!

**Concepts/Vocabulary:**

* Diversity
* Habitat
* Niche
* Adaptation
* Temperature
* Aquatic
* Macroinvertebrates

**Materials:**

*Introduction:* Portable White Board, Expo Markers, clipboards with pencils attached (15), data sheets (15)

*Meadow Station*: sweep nets (5), hula hoops (5), flags (5),

*Forest Station:* hula hoops (5), flags (5)

*Aquatic Station:* 2 white containers, 6 pre-set leaf packs (blue-first group, pink-second group, yellow-last group), and white stream searching buckets (2) (includes: 4 nets, 2 ID sheets, 2 ice cube trays, two white containers filled with nitrate test tablets, DO test tablets, 2 test tubes: 1 glass mini (DO Test) & 1 large (nitrate), pH strips/container, information sheet –on testing), 1 tennis ball can (filled with 10 paint brushes, 2 thermometers, 2 pencils, 5 white plastic spoons), 5 clear dishes, 1 pond animal sheet, 1 sheet of “How to do Tests” sheet)

*Lunch:* tarps (2), containers for lunches (2), hand sanitizer (1 large one)

*Hike Trail Bags:* Spice Jars (3), Animal ID Books (forest, aquatic, meadow), Plant ID Books (forest, aquatic, meadow), binoculars (1)

**Background:**

Habitat

A habitat is an animal’s home. Every animal needs 4 things to survive in their habitat: Food, water, shelter, and space. These resources can be different for each animal. For example, rabbits each plants such as flowers and grasses while coyotes eat meat such as voles and rabbits.

Diversity

Diversity means having a range of different things. When scientists study the diversity of a habitat they are looking at the number of different animals and plants at the most basic level. How many different trees are in a given space, flowers, reptiles, mammals, etc.

For our purposes on the field trip we will be using a point system to track diversity. The chart below will help us understand how our budding scientists will conclude the status of Irvine’s aquatic, forest, and meadow habitat’s diversity.

Habitat Diversity Model Rubric

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Diversity of Plants** | **Diversity of Animals** | **Factors in the Habitat That Support Plants and Animals** |
| **3 points** | Included 3 or more different types of plants | Included 3 or more different types of animals | Included 3 or more non-living factors needed to support the plants and animals in this habitat |
| **2 points** | Included 2 different types of plants | Included 2 different types of animals | Included 2 non-living factors needed to support the plants and animals found in this habitat |
| **1 point** | Included 1 type of plant | Included 1 type of animal | Included 1 non-living factor needed to support the plants and animals found in this habitat |
| **0 points** | Included no plants | Included no animals | Included no non-living factors needed to support the plants and animals |

Adaptation

An adaptation is something an animal/plant has or does to survive in its habitat. This could be a physical or behavioral characteristic. Some **physical** adaptations an animal could have are webbed feet for swimming in a lake and sharp vision for seeing high above a meadow when hunting. Some **behavioral** adaptations might be wolves hunting in packs to take down prey, geese migrating to the south for the winter, and bears hibernating for the winter.

**Procedure:**

*Introduction*: 25 minutes (including time for bathroom break & walking down the hill)

*Stations*: Meadow

 Forest

 Aquatic

\*\*\*Each Station will consist of 30 minutes (2 before lunch & 1 after)

*Lunch*: 30 minutes

*Conclusion:* 15 minutes

**Part 1: Introduction (25 minutes)** Led by a Naturalist

1. **Greeting**

Meet the bus outside of the nature center and walk the group down to the camp shelter.

\*\*be sure to point out the bathrooms and explain the rule of buddy system (2 children at a time to the bathroom)

1. **What is a Habitat?**
* A habitat is an organism’s home.
* In each habitat an organism needs 4 resources: food, water, shelter, and space.
* Does every animal live in the same habitat?
	+ No, animals require different things to live.
	+ Have the students give some examples of different animals and what they might eat, where they might live, and where they might find water.
1. **What is an Adaptation?**
* An adaptation is something an organism has or does in order to survive in its habitat.
* There are two types of adaptations physical and behavioral.
	+ *Physical*: something that is physically on the organism that allows it to survive. (example: a black bear has large claws to help it climb trees)
	+ *Behavioral***:** something that an organism does in order to survive. (example:a black bear hibernates through the winter)
1. **What is Diversity?**
* Diversity is the amount of different things in a given area.
* How many different types of plants can you find in a given area?
* How many different types of animals can you find in a given area?
* Why is diversity in a habitat important?
	+ Diverse plant communities increase the likelihood that some of the plants that serve as required food and cover species for a particular wildlife species are present
	+ An abundance of well-distributed habitat types with a lot of vegetative diversity improves the chances that all of the habitat requirements for a particular species are met
1. **Hypothesis/Prediction**
* As a class have the students create a prediction of the diversity of each habitat.
* Record these predictions on the chart.
1. **Outline of Trip**
* Today we will become scientists and measure the diversity of 3 different habitats: forest, meadow, and stream.
* We will be comparing the plants and animals found in each, but recording the amount of different creatures and plants are in each specific habitat.
* The rotation will go as follows:
	+ Group 1: Meadow, Forest, Lunch, Stream
	+ Group 2: Forest, Stream, Lunch, Meadow
	+ Group 3: Stream, Meadow, Lunch Forest
* Discuss the rules of the trails, facilities, and lunch
	+ Stay on the trail
	+ No collecting natural items
	+ Listen to the leaders
	+ Stay behind the leader and in front of the chaperone
	+ Bathroom requires buddy system – port-o-potties
	+ Lunch will be under the camp shelter or in the lawn
		- Pack in pack out lunch (no trashcan!)
* Break the class into groups of 10 and let them know who their leaders will be.

**Part 2: Stations (30 minutes each) (volunteer led)**

 **2 before lunch 1 after**

1. **Meadow Station**
	* Discuss features of a meadow habitat (lots of sun, grass, etc.)
* Discuss/demonstrate ways to capture animals in the meadow:
	+ Using bug jars
	+ Using sweep nets (see “Games & Activities Descriptions”)
* Break the students into pairs and hand out laminated copies of the Meadow data sheet.
	+ - Use the hula hoop to observe a microhabitat in the meadow and record the animals/plants found in this habitat. Have students write the data on their data sheet.
		- In the same groups as before, pair up students to sweep net (give time limit and boundaries). Have students write the data on their data sheet.
		- Regroup to share and discuss findings:
	+ Discuss the diversity of plants & animals in this habitat.
	+ What adaptations did these organisms have to survive in this habitat?
1. **Forest Station**
	* Discuss features of a forest habitat (shade, cooler, no grass, etc.)
	* Discuss/demonstrate ways to find animals in the forest (under logs, rocks and leaf litter)
	* Break the students into pairs and hand out laminated copies of the Forest data sheet.
	* Conduct a Log Search *in designated log rolling areas* (see “Games & Activities Descriptions”):
* Split the group into 2 and catch critters (give time limit and boundaries), record data on the CC sheet
* Use the hula hoop to observe a microhabitat in the forest and record the animals/plants found in this habitat
	+ - Regroup to share and discuss findings:
	+ Discuss the diversity of plants & animals in this habitat.
	+ What adaptations did these organisms have to survive in this habitat?
1. **Stream Station**
	* Discuss features of a aquatic habitat (moving water, shade, cool temperatures, etc.)
* Discuss/demonstrate ways to capture critters in the stream.
* Break the students into pairs and hand out laminated copies of the Stream data sheet. Have students look through the stream for critters.
* Have the students look through the stream for evidence of plants, and record.
	+ - Use the white containers and leaf packs to observe a microhabitat in the stream and record the animals found in this habitat. Have students write the data on their data sheet. (students should carry the white tubs to the leaf pack fill the tub with water and empty the contents of the leaf pack into their white container full of water)
			* Leaf Pack Color Groupings
				+ blue-first group
				+ pink-second group
				+ yellow-last group
		- Regroup to share and discuss findings:
	+ Discuss the diversity of plants & animals in this habitat.
	+ What adaptations did these organisms have to survive in this habitat?
* Before leaving the stream repack the leaf pack, and place in the water (don’t forget to add a rock to the bottom so it doesn’t float away)

**Part 3: Lunch (30 minutes) (one station after lunch)**

* Down at the barn on the picnic tables or tarp
* NO TRASHCAN! Pack in and pack out lunches.

**Part 4: Conclusion (15 minutes)**

* Discuss the results from each team as a group and write the information on the white board.
* Add the points and see if the student’s predictions were correct or incorrect.