



# *Earth Camp*

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## *Scavenger Hunt*



### Slaughter Creek Preserve Scavenger Hunt

#### **Concept**

Introduction to the geography, flora and fauna, physical science, natural history and surface water of a watershed.

#### **Objective** - Students will:

- 1) locate the boundaries of a watershed;
- 2) predict the flow of water in a watershed by identifying downhill pathways;
- 3) use a map and compass to identify direction, locate points of interest, and define land use;
- 4) discover fossils;
- 5) locate and identify animal signs;
- 7) use a thermometer to measure temperature, and;
- 8) use senses to observe and evaluate water quality.

**Time** 2.5 hours, 1 mile

**Materials** Earth Camp Teacher Assistant will provide materials

- Wax pencil
- "Slaughter Creek Scavenger Hunt" student game sheet
- "Slaughter Creek" trail map
- "Slaughter Creek Land Use" map
- "Creek Observations Data Sheet"
- Compasses
- Thermometers

REMINDER: BEFORE LOADING THE BUS, HAVE STUDENTS USE THE RESTROOM. THE FACILITIES AT THE PARK ARE DIFFICULT TO ACCESS.

## LESSON: Walnut Creek Park

### **Introduction** *(At the entrance with the entire group.)*

1. Ask students to define a watershed. (Land area that drains to a creek, river, or lake.) Ask students if they are standing on a watershed. (Yes)
2. Describe watershed boundaries. Explain to students you cannot see boundaries (high points) in the watershed around Searight Park because the landform is a very gradual slope towards the creek. The low point in the watershed is where Slaughter Creek is located and where the runoff collects.
3. Describe rainwater runoff from the natural area in the park. (Plants act as a filter for pollution, so runoff from a natural area will be cleaner as it enters the creek. Also, chemicals are not applied in a natural area.) Compare to runoff from a street or lawn. (The street and lawn could have chemical pollutants, such as oil or fertilizer, that could runoff and pollute the creek.) Tell students they have choices they will learn about at Earth Camp that will help keep rainwater runoff less polluted.
4. Stormdrains - Discuss how water drains from the streets in the neighborhoods in Slaughter Creek Watershed, into the stormdrain and enters the creek. Some people think the stormdrains go to a treatment plant where the trash and pollution are cleaned from the water, but actually the water goes straight into the creek, along with any trash or pollutants the water picked up as it traveled across the lawns, driveways and streets.
5. Tell students they will investigate the natural watershed around Slaughter Creek to discover plants, animal signs, fossils and rocks. The things students will find at Slaughter Creek Watershed are found in most of the watersheds in Austin, including your school's watershed.
6. Discuss the rules of a park: 1) STAY ON THE TRAIL 2) WALK, DON'T RUN 3) BE QUIET SO YOU CAN OBSERVE NATURE, 4) DO NOT LITTER, and 5) DO NOT DISTURB THE PLANTS OR ANIMALS. This is a park and is meant to preserve the land and provide a place for people to play and fish.

### **Procedure**

1. **Introduce Scavenger Hunt** - The students will lead, but the group must stay together with an adult leader. All students have to see the item found. Tell students you will stop at each item and have a discussion or a lesson.
2. **Form Groups** - Ideally the class will be divided into two groups, each with a trained adult leader with a backpack of materials from the Field Trip Kit. Within these two groups students work in partners with their materials.

### **3. Teach students how to use the map and compass.**

- Ask students to identify the symbols on the trail map. Circle the symbols that represent something they are to find on the scavenger hunt.
- Ask students to find their location on the map. Use the compass rose to identify N, S, E, W on the map. Identify the trail and cardinal direction you will be hiking.
- Demonstrate how to determine direction using a compass:  
A compass is a scientific instrument that uses magnetism to determine direction. The arrow in the middle of the compass is a magnet. It is attracted to the north and south pole. The red tip of the arrow will always point north. The black tip of the arrow will always point south. The letter N or S will not match the arrow until the compass is rotated to the correct position.
- Give each student a compass. Ask them to position the compass to locate the directions.

### **4. Start the Scavenger Hunt.** Manage behavior, give hints, help with directions, take a vote when there is disagreement, etc. Stop at the noted locations and do the mini-lessons.

## **SCAVENGER HUNT**

### **Mini-Lessons**

#### **Algae**

Algae is a slimy plant found in the water. It is necessary for a healthy creek because some fish eat algae and it provides shelter to some animals. Too much algae in the creek is caused by fertilizer runoff. Too much algae can cause some of the animals to die.

#### **Animal Scat and Tracks**

Many animals live close to the creek because it is their drinking water source. They are dependent on clean water in the creek for survival.

#### **Bird Song**

There are three things a bird needs to be attracted to this park. What are they?  
(seeds for food, trees for nests, water in the creek)

#### **Dam**

A dam is man-made wall in the creek or river that causes water to collect, creating a lake environment and good fishing spot.

#### **Damselfly or Dragonfly**

Damselflies look like a smaller version of a dragonfly, except their wings stand up on their back when at rest. Dragonfly wings remain outstretched when at rest. Both types of flies metamorphasize from a nymph to an adult fly. As adults, they fly over the creek and dip their tail into the water and lay eggs. After the eggs hatch, the nymphs live most of their lives in the water. When fully developed, the nymphs climb out of the water onto a dry rock, climb out of their exoskeletons, dry their wings in the sun and fly away. Their presence indicates good water quality because of the length of their life lived in the water and their intolerance of a lot of pollution.

#### **Erosion**

When a creek floods, the power of the water can wash away the streambank, leaving roots exposed and adding sediment to the creek. Too much impervious cover in a watershed (streets, parking lots, buildings) can increase flooding and streambank erosion.

## **Fossil of a Seashell**

Fossils of seashells indicate a sea used to be here millions of years ago. The sea was shallow and tropical. What was left of the ancient sea bottom formed limestone. (NOTE: FOSSILS SHOULD BE LEFT ON THE GROUND AFTER THE LESSON.)

## **Land Use**

- Give each student a “Slaughter Creek Land Use Map”. Ask students to locate where they are on the map. Use the map to identify land use north, south, east and west of their location. Ask students to describe the kinds of pollution that could come from the different land uses.
- Use the map to identify the parks where you are located. Explain the benefits of undeveloped areas surrounding a creek. (Natural areas next to the creek are vegetative buffers which provide filtration of rainwater runoff before it enters the creek.)

## **Limestone**

A shallow, tropical sea used to be here millions of years ago. What was left of the ancient sea bottom formed limestone. The creek bottoms in Austin are limestone, so the water is clear instead of muddy if the creek is healthy.

## **Litter**

- Litter is trash left on the ground.
- Rainwater washes all the litter from the watershed into a creek. Litter can add hazardous chemicals (such as oil from oil containers) into the water, or decrease oxygen in the water as it decomposes.
- Litter can look like food, causing animals to eat harmful substances.

## **Oak Grove**

Trees help filter the water, just like grass and soil. The rest of this forest around the Oak Grove is composed of Juniper (Texas Cedar) because they have out competed all the other plants.

## **Palmetto**

One of two native Texas palm species. Small fruits are edible and taste like dates. How do you think the Native Americans might have used palmettos? (baskets, roofs, fans)

## **Seed**

Seeds provide food for animals and continue a plant's life cycle.

## **Sign of a Flood**

Clumps of leaves lodged in trees or pushed up noticeably along the bank of the creek have been left by floodwaters. Creeks in Austin rise dramatically during heavy rainfall and subside within a few hours or days, depending on the size of the creek.

## **Signs of a Humans**

Did the sign left by the human impact the watershed for the better or worse, or leave it unchanged? Do you have a choice about how you impact the watershed?

## **Slaughter Creek**

- Stop at the creek and complete the “Creek Observations Data Sheet.” Needed equipment is in the backpack provided.
- Students will take the temperature of the creek using celcius/fahrenheit thermometers. Show students where to record their answers on the “Creek Observations Data Sheet.” Compare the temperature of springs in Austin (68 degrees) to the temperature of the creek. Explain: “The ground acts like a blanket, keeping groundwater a constant temperature (around 20 degrees Celsius, or 68 degrees Fahrenheit). Surface water

temperature changes with air temperature - in summer it is warmer than groundwater, and in winter it is generally colder than groundwater.”

- Students complete the rest of the observations with their partner.

### **Something Edible**

A natural watershed provides natural sources of food. Native Americans and the early pioneers depended on these natural food sources for survival. The food we eat still comes from the watershed, but from a farm or ranch where the food has been cultivated.

### **Something Prickly - Prickly Pear Cactus**

Identify the prickly pear. Discuss its abundance in our watershed and benefits as a food source. Cut one and let the students try it.

### **Sounds of the City**

Although you are surrounded by woods, this park is located in the city. Pollution upstream can flow into the park downstream, and noises from the city can disturb the peace of humans and some types of wildlife in the park.

### **Tributary**

A tributary is a creek that flows into a larger creek or river. It adds water, and any pollution carried with it, from the tributary's watershed into the receiving creek.

### **Water Bird**

Common water birds found in and around Austin's creeks include the Great Blue Heron, Green Heron, Egrets, Geese and Ducks. These birds depend on clean water and add beauty to our waterways.

### **Watershed**

As long as you are on the land, you are on a watershed!

### **Wildflowers**

- Encourage students to observe the variety of plants on the preserved watershed. Discuss how a native yard improves water quality because it doesn't require fertilizer, pesticide, or extra water. Plants also act as a filter for pollution. Encourage students to learn the types of plants native to Austin by using the wildflower identification brochure.
- If it is late winter or early spring and the flowers are not blooming, look for bluebonnet sprouts. Tell students the leaves of a bluebonnet form a five pointed star on each stem, just like the five pointed star of Texas. The bluebonnet is the state flower of Texas.

