

An Insect Picnic – Activity/Demonstration

Subjects: Life Sciences, Adaptations, Insects

Duration: Prep: 20 minutes; Activity: 30 minutes

Skills: Observation, Experimentation, Critical Thinking, Note Taking

Next Generation Science Standards: Structure and Function, Variation of Traits, Adaptation

Objectives: Students will understand how insect mouthparts are adapted to eat food from a particular food source.

Materials:

Insect Picnic – Activity Sheet

Straws

Sponges

Cups – long tubular and standard

Plate

Tray

Water or Juice

Clothespin

Scissors

Paper towels

Small food items like marbles, cereal, popcorn, raisins, etc.

Other art supplies

Background:

Insects have different types of mouthparts that allow them to exploit different food sources. Insects like butterflies use siphoning mouthparts to drink nectar from deep in flowers. Piercing/sucking mouthparts are used by insects like the assassin bug to pierce the exoskeleton of other insects. Insects such as houseflies use sponging mouthparts to soak up liquids from rotting plants or animals. Chewing mouthparts are used by insects like grasshoppers when eating leaves and other items that need to be broken into small bits before swallowing. Insect mouthparts that are adapted to one food source often means that the insect can't take advantage of other food sources.

Preparation:

Print one activity sheet for each student. Construct the following mouthpart tools and food options for each group:

Mouthpart	Construction	Food Source	Construction
Siphoning mouthparts in a butterfly	Long straws	Nectar in a flower	Water in a long tubular container
Piercing/Sucking mouthparts in an assassin bug	Straws cut to a point on one end	Liquid inside a plant stem or under an insect exoskeleton	Water in a cup with plastic wrap over it
Sponging mouthparts in a housefly	Straws with bits of sponge on the end	Rotting fruit or meat	Wet sponge on a tray
Chewing mouthparts in a grasshopper	Clothespin	Leaves or small insects	Plate of small items

Activity:

Divide students into groups of 3 or 4. Give each group a set of the four different mouthpart tools and food sources as well as two collecting cups for their liquid and solid food. Let students try transferring food from the different food sources to their collecting cups. Transfer water with the straws by inserting them into the water, covering the end with your finger, and trapping the water inside. Move the water to the collecting cup and remove your finger. Have students record their observations about which “mouthpart” works best with each food source. Can some mouthparts be used for more than one food source? Discuss feeding adaptations in the context of insect mouthparts.

Extensions:

Give students the option to come up with their own “mouthparts” for different food sources. Use whatever art supplies are on hand.

Insect Picnic – Activity Sheet

Name: _____

1. Long tubular cup of water

Tool used: _____

What insect has this kind of mouthparts? _____

Observations: _____

Illustrations:

2. Covered cup of water

Tool used: _____

What insect has this kind of mouthparts? _____

Observations: _____

Illustrations:

3. Wet sponge

Tool used: _____

What insect has this kind of mouthparts? _____

Observations: _____

Illustrations:

4. Small food item

Tool used: _____

What insect has this kind of mouthparts? _____

Observations: _____

Illustrations: