

## **Insect Adaptations for Water**

### **Big World of Insects, Spiders & Bugs Series**

**Subject Areas:** Science, Life Science, Biology

**Synopsis:** In this program, we see several examples of insects that live on or in the water. These insects have developed many different adaptations to allow them to float and move on the water, to hunt both on and in the water and to avoid dangerous predators. Viewers will marvel at the many ways insects have adapted to water.

#### **Learning Objectives:**

- Objective 1)** Students will be able to describe the different adaptations these insects have developed to allow them to live in and on the water.
- Objective 2)** Students will be able to describe the different ways these insects avoid danger.
- Objective 3)** Students will be able to describe the different ways these insects hunt and obtain food.

**Vocabulary:** Define and discuss the following key terms:

Communicative, whirligig, trajectory, erratic, predators, marauders, secretion, exudes, submerged, water strider (skater), catamaran, mariner, fragile, scavenge, mystify, forelegs, ungainly, specialists, efficient, concealed, carnivorous, nymph, prey

#### **Pre-Viewing Questions and Discussion:**

- 1) Have you ever seen any insects living in or on the water? What do these insects look like?
- 2) What objects (machines, clothes, equipment) have people developed to allow them to live or work in and on the water? Brainstorm a list with your classmates. As you watch this program, think about the adaptations that insects have developed to live on and in the water.

#### **Post-Viewing Questions and Discussion:**

- 1) Describe the whirligig beetle. What do they look like? How do they move? Where do they live? What do they eat?
- 2) Why do scientists think that whirligig beetles move around so erratically (randomly)? How do these insects avoid danger or defend themselves?
- 3) What two things are whirligig beetles looking for while swimming around?
- 4) Describe the water strider (water skater). How does it differ from the whirligig? How does it communicate?
- 5) What functions do the water strider's legs perform?

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- 6) Describe the stick insect. Compare and contrast this insect with water striders and whirligigs.
- 7) What does the stick insect do when it senses danger? Do you think this is effective?
- 8) When the stick insect enters the water, the narrator says that it is now in its element. What does this mean? Describe how the stick insect moves underwater.
- 9) How does the stick insect hunt? What are some of its prey?

### **Additional Activities:**

- 1) Create a chart or table that describes the three insects shown in this program. Include in the chart sections on how the insect moves, communicates, hunts, the types of prey and the special adaptations that the insect has for living on or in the water.
- 2) Pretend you are a water strider, a whirligig or a stick insect. Write a story about your typical day. Be sure to include how you move in or on the water, how you avoid danger, catch prey and your special adaptations for life in or on the water.
- 3) The stick insect can re-grow parts of its body that might be lost when attacked by a predator. This is called regeneration. Research to determine if there are other insects that can regenerate lost body parts. Present your findings in a written report.
- 4) Draw close up pictures of each insect. On each, label the head, thorax, abdomen, six legs and wings (if it has wings). Be sure to color the insects appropriately. Also include a drawing of a pond or stream that shows each type of insect in its preferred environment.
- 5) Create a food web that includes these three insects, their food (prey) and animals (predators) that might eat them as well. Be sure to include plants and the sun in your food web.

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