

WATERSHED WARRIORS

TEACHER LESSON PLAN | GRADES 3-5

CONTENTS

- Pre-Documentary Mini-Lesson (15 minutes)
- Documentary Screening (13-26 minutes)
- Video Questions (15 minutes)
- Mussels: Nature's Water Filter Creatures Activity (30-45 minutes)



PRE-DOCUMENTARY MINI-LESSON 15 MINUTES

Use the Grades 3-5 Pre-Documentary Mini-Lesson slides to help students prepare for the *Watershed Warriors* documentary.

Learning Objectives:

At the end of this Mini-Lesson, students will...

- Be able to explain how a watershed is formed.
- Be able to list three challenges to indicator species.
- Be able to identify one indicator species by image.

PRE-DOCUMENTARY MINI-LESSON – CONTINUED

15 MINUTES

- **Slide 1:** *Watershed Warriors* is a documentary about the Friends of the Fox River non-profit organization who help to teach people about river ecosystems and water health. Before we watch the documentary, we will answer these questions together as a class:
 1. What is a watershed?
 2. What is an ecosystem?
 3. What are indicator species?
- **Slides 2 & 3:** Ask students “What is a watershed?” After taking a few student answers, show slide 3 to share the definition.
- **Slide 4:** Share how rivers make up watersheds.
- **Slide 5:** Show slide 5 and read aloud.
- **Slides 6 & 7:** Ask students “What is an ecosystem?” After taking a few student answers, show slide 7 to share the definition.
- **Slide 8:** Show slide 8 and read aloud.
- **Slides 9 & 10:** Ask students “What is an indicator species?” After taking a few students answers, show slide 10 to share the definition.
- **Slide 11:** Show slide 11 and read aloud.
- **Slide 12:** Introduce the River Indicator Species Mini-Activity.
 - Students may work in pairs to match the indicator species with their descriptions and environmental challenges they face. After some time, discuss the correct answers together as a class.
- **Slide 13:** River Indicator Species Mini-Activity answer key.
- **Slide 14:** Introduce the documentary.

PRE-DOCUMENTARY MINI-LESSON – CONTINUED

15 MINUTES

Mini-Activity Answer Key:

- **Brook Trout**

- Catch me in cold, clear water.
- Water warms up by chemical pollutants.

- **Caddisfly**

- My larva are found in clean, bubbling streams.
- Dirty runoff comes from farms and golf courses.

- **Eelgrass**

- I live underwater but need sunlight to survive.
- Lots of algae grows on the water surface from too many chemicals.

- **Freshwater mussels**

- I can't eat or breathe in polluted and mucky water.
- Human activity and construction nearby can make the river bottom mucky.

DOCUMENTARY SCREENING

13-26 MINUTES

If students are in grades 4 or 5, they should answer the questions from Grades 3-5 Video Questions while watching Watershed Warriors.

For 3rd grade students, it may be best to have them answer the questions after the video or discuss the questions together.

We recommend playing the video twice if time allows.

VIDEO QUESTIONS

15 MINUTES

Learning Objectives:

At the end of this Documentary Discussion, students will:

- Be able to explain what Friends of the Fox River is.
- Be able to answer how many feet a mussel has.
- Be able to list two reasons why healthy water is important.
 - Healthy ecosystem (healthy plants and animals) .
 - Natural resource needed for all life.

Discuss the following questions as a class:

Answer Key:

1. How many miles of the Fox River will Jenni paddle?

A: *More than 200 miles.*

2. What does the Friends of the Fox River (FOTFR) do?

A: *FOTFR protects the Fox River and its watershed.*

3. Water quality testing is all about testing the health of the river. Give one reason why water health matters.

A: *Water health matters because healthy water means a healthy and balanced ecosystem. There are more kinds of animals (biodiversity).*

VIDEO QUESTIONS – CONTINUED

15 MINUTES

4. What are three animals Gary looks for in the net?

A: Any of the following: flies, aquatic worms, snails, leeches, and crayfish.

5. What animal died tangled up in fishing line and hanging from the power line? What does this tell us about man-made materials?

A: Goose; this tells us that man-made materials can be harmful to wildlife.

6. Do mussels have feet? Yes.

If you circled yes, how many feet?

A: They have one foot used to pull themselves around the river bottom.

7. Why is clean water an important natural resource that we should protect?

A: Clean water is necessary for life. We need clean water to drink and play in. Animals need clean water to drink and live in. An ecosystem will not survive and thrive without clean water.

MUSSELS: NATURE'S WATER FILTER CREATURES ACTIVITY

30-45 MINUTES

Learning Objectives:

At the end of this activity, students will:

- Be able to explain that a mussel's gills filter water.
- Be able to explain why mussels filter water.
- Be able to define a mussel as an indicator species important to river ecosystems.

Instructions:

1. Pass out the activity worksheet Mussels: Nature's Water Filter Creatures to students.
2. Read aloud the activity introduction.
3. Place students in groups of two or three for this activity.
4. Read aloud the materials checklist and ensure each group has all supplies necessary for the activity.
5. Read aloud the directions and perform the tasks together as a class.
6. Read aloud the discussion questions and give the students time to think about and answer the questions on their own before discussing the answers as a class.

MUSSELS: NATURE'S WATER FILTER CREATURES ACTIVITY – CONTINUED

30–45 MINUTES

Discussion Questions Answer Key:

1. What part of this experiment represents the mussel's gills?

A: The cotton ball in the filter.

2. What do you observe when the water goes through the filter?

A: The water flows in dirty and comes out cleaner.

3. What might happen to the river's water health if mussels disappear from the ecosystem?

A: If mussels disappeared from the ecosystem, the river's water health would decline/get worse/become unhealthy.

4. Take a look at the cotton ball in the funnel. What does the cotton ball look like right now?

A: The cotton ball is dirty.

5. What happens when we add more of the pollutants to the water?

Circle what you notice:

A: The water slows down. The cotton ball gets dirty.

6. How do you think pollution affects a mussel's health?

A: Pollution can make mussels sick or even kill them. It can clog their gills, which they need to breathe and get food from the water.