Reducing Stormwater Pollution

In this lesson, students will conduct research with the aim of solving a real-life water pollution problem in their local environment.

Objective

Students will design a solution to reduce stormwater pollution in a local waterway and protect people's health.

Standards

NGSS, Grades 6-8

MS-ESS3-3 Minimize human impact on environment

CCSS, Grades 6-8

RST.6-8.1 Cite textual evidence

RST.6-8.2 Determine central idea

Time

Part 1: 45 minutes;
Part 2: 90 minutes

Materials

Reading Passages/Research:

- Watch Out for Stormwater reading passage
- Search for Stormwater Solutions reading passage
- Devices with internet access or preprinted resources about water pollution in local waterways

Project Activity Sheets:

- Research Pollution Solutions project planner A
- Plan Your Pollution Solution project planner B
- Stormwater Pollution Solutions: Student project form

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Download materials at
scholastic.com/waterpollution

Part 1: Exploring Stormwater

1 **Hook** students by asking: *How much trash do you think is produced in the U.S. each year?* (Answer: over 250 million tons.) Ask: *What does this have to do with water pollution?* (Answer: Trash that isn't disposed of properly can end up in local waterbodies, affecting the ecosystems and making the waters unsafe.)

2 **Distribute** the **Watch Out for Stormwater** reading passage. Discuss the responses to the questions as a class.

3 **Engage** students in an investigation of the path that stormwater follows, either on school grounds or near their homes (if instruction is remote). On the next rainy day, have students find a path that rainwater travels and take a photograph or draw a picture of the path. Ask them to consider what pollutants the rainwater would come into contact with.

Part 2: Stormwater Pollution Solutions

1 **Share** some of the images collected in part 1. Have students predict problems the stormwater might cause.

2 **Distribute** the **Search for Stormwater Solutions** passage and have students read and respond to learn about solutions to these problems.

3 **Challenge** students to use what they learned to develop or propose a creative solution to a water pollution problem in their area. Distribute the **Engineer a Pollution Solution!** activity sheet. Have students research issues facing their local waterways using online resources (or print resources that you have gathered). They can refer to the previous reading passages for support.

→ *To decrease the challenge*, work collaboratively on the first steps of the activity sheet.

→ *To increase the challenge,* ask students to consider the cost of each of the solutions they research and to incorporate this information into their decision.

4 **Guide** students to use the **Stormwater Pollution Solutions: Student Project** form to draw their proposed solution. Have them describe their solution on a separate sheet of paper.

ANSWER KEY

Watch Out for Stormwater 1) When rainwater isn't absorbed by the ground (e.g., soil), it travels over hard surfaces (e.g., roads) and gets contaminated, which can negatively affect the health of living things. **2 & 3)** Answers will vary but should imply that stormwater presents problems for health and the environment. **4)** Properly dispose of trash, pet waste, and cleaning products, and encourage others to do the same.

Search for Stormwater Solutions 1) There are many actions that local governments can take to reduce stormwater pollution. **2)** Paragraph #1 establishes that stormwater pollution is an increasing problem; #2 explains the use and limitations of trash capture technologies; #3 explains approaches to changing people's behavior; #4 explains different types of green infrastructure; #5 lists some health benefits of reducing stormwater pollution. **3)** Answers will vary.

EPA