

What is a Watershed?

Description:

Students create a working model of a watershed to view the different parts of a watershed and how rain affects this environment.

Objectives:

- To introduce students and teachers to the concept of watersheds
- To engage students and teachers in learning about the source of New York City's drinking water and its relationship to watersheds

Vocabulary:

Watershed, bedrock, absorption, pollutants

Recommended for:

4th – 12th grade students

Materials:

For each group of 4-6 participants:

- A plastic or metal tray (at least 4" deep)
- A spray bottle filled with water
- 6 sheets of newspaper
- One large sheet of plastic wrap
- 2 paper towels
- Food coloring (optional)

Method:

- Introduce the activity by explaining that students will create a landscape in their box that looks very much like the area that collects New York City's drinking water.
- Ask students to work cooperatively within their groups and to discuss their observations.

Part I

- Instruct participants to create a mountainous landscape in the basin using pieces of newspaper. Mold the newspaper into mountains and place them in the tray.
- Give each group a piece of plastic wrap to cover the newspaper. Make sure that the wrap is molded to the contours and tuck ends inside the box.
- Using the fine mist from the spray bottle, rain on the landscape. Pay careful attention to what the water drops are doing: "How are they moving?" [*Downhill*] "Are they collecting?" [*Forming puddles and/or streams*] "What might the puddles represent?" [*Lakes and reservoirs*] "Did these lakes form simply by spraying directly over them?" [*They formed by streams feeding them with water*] After the landscapes have been sprayed, discuss these questions. Ask someone from each group to speak to the class about the observations their group made.
- Discuss what physical feature of the watershed the plastic wrap represents. Encourage students to explore how the water moved over the plastic. What in nature might this represent? [*The bedrock of the mountains*]

Part II

- Hand out paper towels to each group. Mold to the landscape.
- Rain and observe how water moves through the landscape.
- Pose questions: "Is the water flowing in the same manner?" [*It spreads out, does not move as quickly, still it flows downhill*] "What does the paper towel represent?" [*soil and vegetation*]
- Discuss the role vegetation plays in the natural landscape. Trees and grasses for example help to regulate the flow of water and help to prevent flooding and erosion.

Part III (Optional)

- Add a few drops of food coloring to each landscape and rain again. Pretend the color represents a chemical that was accidentally poured into the soil.
- What observations can you make? How does rain affect the movement of pollutants? *[It is mixed with the water and pollutes the reservoirs; it soaks into the soil]*
- “What does this mean to our water supply?” *[It is very important to protect our water supply and our watershed from pollution]*

Discussion:

- You have just created a watershed. Can you describe it? Why is watershed protection important to New York City?
- Can you now describe how our drinking water is collected in the watershed? Share this important information with your family and friends.
- What happens when there is not enough precipitation in the watershed? What do you do to conserve water at home and at school?

For more information contact:

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Also visit DEP’s website at:

www.nyc.gov/dep