

# WHERE DOES THE WATER GO?

## Description:

Students create a map of their watershed as they do an experiment to discover where stormwater flows.

## Objective:

- Students will draw maps of their immediate surroundings to gain an understanding of their watershed.
- Students will understand how Omaha's local watershed contributes to regional, national, and worldwide water bodies.

## Standards:

### 2nd Grade

- SS 2.3.1.c Identify and apply map elements.
- SS 2.3.2.a Identify and differentiate between physical and human features of neighborhoods and communities. For example: vegetation, ravines, housing, streets, sewers, road signs.
- SS 2.3.3.b Describe how seasonal weather patterns, natural hazards, and natural resources affect human activities.

### 3rd Grade

- SS 2.3.3.b Describe how seasonal weather patterns, natural hazards, and natural resources affect human activities.
- SS 3.3.1.c Determine why things are located where they are in the community.
- SS 3.3.2.a Identify and differentiate between physical and human features of neighborhoods and communities.
- SS 3.3.3 Explain relationships between humans and the physical environment.

### 4th Grade

- SS 4.3.3 Explain how human and natural forces have modified different environments in Nebraska and how humans have adapted.
- SS 4.3.5 Use geographic skills to make connections to issues and events.

### 5th Grade

- SS 5.3.3 Explain how human and natural forces have modified different environments in the United States and how humans have adapted.

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## Materials:

- Blank paper OR student handout pages
- Bottles or pitchers of water
- Access to additional water
- Writing utensil
- Blue crayons
- Video
- Clipboards

## Background Info:

A watershed is an area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel. Watersheds can be as small as a footprint or large enough to encompass all the land that drains water into rivers that drain into the Mississippi River and to the Gulf of Mexico.

Permeable surfaces allow water to be absorbed into them. In our urban environments, these include grassy areas, gardens, parks, sports fields, etc. Some newly designed urban infrastructure, frequently called “green infrastructure,” can include permeable pavements, which allow water to filter through hard surfaces. However, these are relatively new and not yet commonly used in Omaha.

Impermeable or impervious surfaces are hard surfaces such as roads, sidewalks, building roofs, etc. These hard surfaces do not allow water to penetrate through them and instead force rainwater and snowmelt to flow over them. As water flows over these hard surfaces, it picks up pollutants.

Stormwater runoff is generated from rain and snowmelt events that flow over land or impervious surfaces and does not soak into the ground. Stormwater running over roofs, driveways, and roads will pick up pollutants such as oil, fertilizers, pesticides, dirt/sediment, trash, and animal waste. As water flows across the hard surfaces and down to storm drains, the pollution it carries is taken to local waterways without any form of filtration or treatment. As stormwater runs off these impervious surfaces, large volumes quickly reach streams, causing them to rise quickly and flood, instead of a natural slow and steady water rise. When more impervious surfaces exist, flooding occurs more rapidly and can be more severe, resulting in damage to property and people.

# LITTER CLEANUP

## Activity:

1. Distribute supplies to students.
2. Show the "Where does the water go?" video.
3. Instruct students to go outside and select their starting locations. If you are doing this at school, encourage students to work at various spots around the building so their maps work together to create a large, all-school map.
4. Instruct students to draw a map of the area around their starting location, as demonstrated in the video.
5. Starting locations should be on a hard or impermeable surface. Maps should include:
  - a. Manmade features such as roads, buildings, sidewalks, streetlights, etc.
  - b. Natural features, such as trees, grass, etc.
  - c. A key
6. Students should pour their pitcher/bottle of water on the hard surface at their starting location. Instruct students to follow the water as it trickles or runs down their watershed. As they follow the water, students should add to their map.
7. If the water stops flowing, instruct students to refill their water bottles and pour more water where the water stopped. They should continue this process until the water flows into a stormdrain or finds a permeable area where the water seeps into the ground.  
NOTE: if the water flows to a busy road, students should mark this on their map and stop at that point.
8. After mapping the entire length of the watershed, instruct students to use the blue crayon to mark the water's path on their map.

## Assessment:

Student maps