

# Regional Science Consortium Stormwater Runoff – Teacher Guide

## Storm Drain Survey Answer Key

Example Results:

### Survey #1

Date: 07/04/2020 Time: 12:00 pm Weather: sunny, clear skies

Item	plastic cup	plastic straw	leaves	toy	bottle cap	small plastic pieces			
Quantity	2	1	4	1	3	6			

What item did you find the most of?

Small plastic pieces

Does anything you found surprise you?

I didn't expect there to be a toy

What was the weather like for the past 7 days? (stormy, hot, clear skies, cloudy, rainy)

It stormed three days ago (07/01/20). It has been hot & sunny every other day.

### Analysis of Results

How did weather influence your surveys?

Precipitation events should be responsible for moving items to the drains. Therefore, if no rain occurred between two surveys, there should be little to no items at the drain. Heavy precipitation events move a greater number of items to storm drains as well as larger items.

Discuss some things that may have passed through the storm drain. Why did they get through? Where do you think they ended up?

Items smaller than the grates of the storm drain will pass through.

This can include items we can't see such as the nutrients nitrogen and phosphorous, and chemicals like oils, greases, and pesticides. It can also include smaller pieces of litter like bottle caps, straws, sticks, leaves, and microplastics.

These materials will flow through the storm water system to its outlet. In Erie, PA, most of our stormwater ends up in local creeks, Presque Isle Bay, or Lake Erie. The exact location will depend on the storm drain being surveyed.

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### Lesson Tips and Tricks

#### PowerPoint Presentation

- We recommend pausing the presentation recording to allow students time to work and follow along with the activities included in the lesson.
  - Identifying impervious & pervious surfaces
- We recommend having a discussion about implementing BMPs at your school or homes after the lesson while the many different options are fresh in the student’s minds.
- Storms can come in many different forms! It is a good idea to discuss with students what a storm means to them and how the different kinds of storms influence runoff.
- This lesson does not include all possible BMP options. We encourage students to do their own research and bring any questions they may have to their scheduled Skype with a Scientist session.

#### Storm Drain Survey

- This lesson works great for having students compare their findings online in a discussion format. It helps keep the whole class on track as well as allowing students to see how results vary with location.
- If students are not finding much debris at storm drains they have selected, we suggest examining more public locations such as storm drains near the mall or other businesses like fast food restaurants.
- If students find items they do not recognize, they can simply make an “other” category.
- It is possible to find hazardous items such as needles with this activity. Students should never touch these items without adult supervision and proper protective equipment. If proper equipment and supervision is not available, the student should leave the item be.
- Students should not conduct surveys during hazardous weather conditions.