Flooding Mapping Tour

#FLOODED
Grades 5 - 12
Activity

Main Objective

Learners will take a walking tour, using a checklist and study area map to identify, count, and photograph human-made and natural elements in the flooding infrastructure. Through this experience, learners will understand first hand what constitutes flooding infrastructure in our locality.

Learning Outcomes

By the end of this activity learners will:

- Take a walking tour, using a Checklist and Study Area Map to identify, count and take pictures of the human-made and natural things in the flooding infrastructure
- Understand first-hand what constitutes flooding infrastructure in our locality

Length of Activity: 1 - 1.5 hours

Step 1: Intro to flooding infrastructure
Step 2+3+4: Choose, map out a study area, and go on a walking tour.
Step 5+6: Class discussion about findings and create a stormwater infrastructure map.

Materials Required

- Flood:ED Backgrounder (for reference)
- Internet Enabled Device (for Google Maps)
- A printer (optional if choosing to print the map)
- Flooding Checklist (attached below)

Activity

Step 1: Flooding Infrastructure

Begin by explaining what constitutes stormwater infrastructure:

- **Flooding infrastructure** is essential to managing the impact of sudden and heavy rainfall or the gradual melting of snow and ice come springtime. This infrastructure can be designed and built – like sewers and drains, or natural like streams, ponds, trees, and plants.

Step 2: Choose Your Study Area for Your Flooding Mapping Tour

In groups, discuss what should be the boundaries of your Study Area for the stormwater mapping tour.

Consider the following:

1. What are the areas in your school or home or neighbourhood where ponding or flooding typically happens?
2. What are the areas where water flow flushes pollution down the sewers?
3. What areas will capture most examples of flooding infrastructure and flooding issues?
4. How big is your school building and/or property?
5. What are the problems areas where it rains heavily?
6. Can you easily travel into the surrounding neighbourhood?
7. Are there natural areas near you or is it mostly paved?

After discussing the questions above, the area that you choose for your tour and map will be your Study Area.

Step 3: Plan Your Tour

- Create a map of your Study Area using Google Maps:

  https://www.google.com/maps

  - Click on the link and enter your school or home address in the search box.
- Print off a copy of the map or draw a sketch of the map by hand while using the Google Map as a reference. If your Study Area Map is large, you may split the map into smaller areas and assign to groups.

- Carefully study the boundaries of your Study Area. It is important that you know the boundaries of your Study Area and to stay within the boundaries!
- Look over the Checklist (attached below) that you will use for your tour of the Study Area to note down the items that you are looking for. You can reference the Flood:ED Photo Gallery to identify things you don't know or recognize on your tour:

Flood:ED Photo Gallery

- Plan for your mapping tour during rain or right after rainfall to identify the areas where flooding generally occurs in your Study Area. Therefore, plan for wet weather!

Step 4: Explore and Map Your Study Area

- Go out to your Study Area to locate and count all the different types of flooding infrastructure you can find.
- Note what is found on your checklist.
- If you can, do this tour during or right after rainfall, you will be able to observe water collecting, flowing, draining, and pooling.
- You may also find what pollution is going near or down the drains such as wrappers, cigarette buts and other garbage.
- Mark what you find on your map.
- Take photographs of everything you find. You can add them later to your Study Area Map!

Step 5: Talk About Your Tour

When you return to your class or home school, compare your Checklists and Study Area Maps with other learners.

As a class, discuss the following questions:

1. What did you see and where did you see it?

Downspouts:

1. How many downspouts did you see?
2. How many went into the ground and directly into the sewer system or to a French drain, etc.?
3. How many were disconnected and flowed onto the ground?
4. Were they discharging to the sewers directly?

Storm Sewer Drains:

1. Were any overwhelmed or backed up?
2. Could you see oil or chemical residues flowing from roads and parking lots?
3. Were there plastics, garbage or cigarette butts flowing into drain?

Flooding or Pooling:

1. Is water pooling?
2. Where is water pooling?
3. Is rainwater flowing away from buildings or towards them?
4. Where is water flowing close to the buildings and basements?

Is rainwater collecting where it shouldn't?

1. Is water pouring off the school roof?
2. Can you find water with nowhere to go?
3. Is water pooling on the school's roof?

Step 6: Complete Your Map

The whole class can work together to put all your work on to one big version that becomes your school's Stormwater Infrastructure Map. There are various ways you may decide to do this:

1. Project a map onto a screen or whiteboard, put everything on and save the image.
2. Create a wall display and add your Maps and Checklists.
3. Post a version of your Study Area Map and have threads projecting out to describe places on the map.
4. Take different images of learner work to show that different learners found different items.
5. Have your educator help make a digital map with the infrastructure noted using a legend.

Flooding Checklist

Note: As learners go on their tour, use this checklist to tally the items they are looking for. Be sure to mark down the total amount of each item.

Items to Look For	Number Located	Added to Map?	Notes and Observations
Downspouts connected	Tally: Total:		
Downspouts disconnected	Tally: Total:		
Inner Downspouts	Tally: Total:		
Erosions	Tally: Total:		
Flooded Areas	Tally: Total:		

Grass	Tally: Total:		
Main building	Tally: Total:		
Other buildings	Tally: Total:		
Parking lot area	Tally: Total:		
Paved area	Tally: Total:		
Eavestroughs	Tally: Total:		

Roads	Tally: Total:		
Roof area	Tally: Total:		
Sidewalks	Tally: Total:		
Stormwater Drains	Tally: Total:		
Pollution	Tally: Total:		
Trees	Tally: Total:		

Rain barrels	Tally: Total:		
Rain gardens	Tally: Total:		
Wetlands	Tally: Total:		
Ravines	Tally: Total:		
Ditches	Tally: Total:		
Swales	Tally: Total:		

French Drains	Tally: Total:		
Other	Tally: Total:		