

How Rain Gardens Help

Student worksheet—*Answer key*

Word Bank

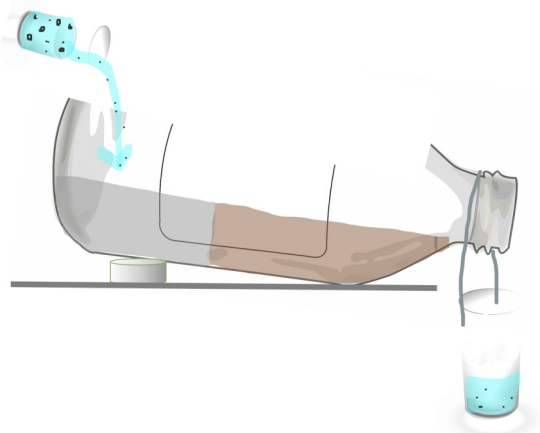
- Pollutants
- Rain garden
- Runoff
- Storm drain

Directions: Complete the tasks below in preparation for the experiment.

1. What is the purpose of a rain garden?

- *Reduce the amount of runoff or flood mitigation*
- *Filter pollutants out of runoff*
- *Beautification*

2. Draw how you would use the mini rain gardens to test if a rain garden can reduce runoff and filter out pollutants.



Checklist:

- ☐ Draw what you will do.
- ☐ Draw what you will measure.

Briefly explain what you will do and measure.

Pour a cup of polluted water onto the pavement.

Measure the amount of water in the collection cup and compare it to the amount poured.

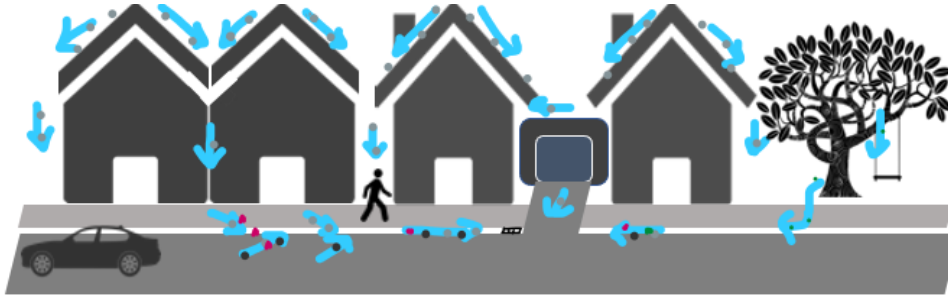
Compare the pollution in the collected water to that of the poured water.

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3. Draw runoff and how it gets polluted on the figure below.

This example shows one way to draw runoff. Students might draw it differently.



Checklist:

- ☐ Draw runoff.
- ☐ Draw pollutants.

List some pollutants found in runoff.

- *Dust that collected on driveways and houses*
- *Soil from small gardens*
- *The oil that leaks from cars*
- *Trash people left out*
- *Plant fertilizer*

Directions: Make a prediction.

4. Circle what you think is correct for the following two statements:

- [The soil rain garden, The pebbles rain garden, No rain garden, Both rain gardens] will reduce the amount of runoff.
- [The soil rain garden, The pebbles rain garden, No rain garden, Both rain gardens] will reduce the pollution.

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Directions: Follow the teacher's directions to test the rain gardens.

5. Record the data in the table below

Table 1		The data listed are obtained from experiments Science Buddies staff performed. Your class will have slightly different numbers.			
Rain Garden Experiment: Measurements of Collected Runoff					
Rain garden type	Height (cm)	Pollution (Circle if present)			
No rain garden	Overflowing	trash/cereal	dirt	oil	food coloring
Soil	3cm	trash/cereal	dirt	oil	food coloring
Pebbles	5cm	trash/cereal	dirt	oil	food coloring

Directions: Use the data collected in Table 1 to answer question 6.

6. Does your data support or refute your predictions (your answers to question 4)? Why or why not?

The answer will depend on the students' prediction and the data.

The data listed above was used to give an example. Your class will have slightly different numbers, but the trend will probably be the same.

- The data shows less runoff collected from both rain gardens than from the container where there was no rain garden. This indicates that both rain gardens reduce the amount of runoff.*
- The data shows fewer pollutants in the runoff collected from the rain gardens compared to the runoff collected from the container where there was no rain garden. This indicates that both rain gardens reduce the pollution.*
- Some students might notice that the least runoff was collected from the soil rain garden, indicating that the soil rain garden performed better than the pebbles rain garden for reducing runoff. They might also notice that the pebbles rain garden filtered out dirt while the soil rain garden still had dirt(soil) in the collected runoff, indicating that the pebbles rain garden performed better for filtering out pollution.*