Rain Garden Activity

1. Obtain one cut water bottle for your group.

2. Put an eraser under the closed end of the bottle, so it tilts at an angle with the spout of the bottle hanging over the edge of the desk/table.

3. Predict: If you pour water in the elevated end of the bottle, where will it go? What part of the water cycle does this represent? Write or draw your response.

4. After you have made your prediction, hold an empty cup under the spout of your bottle while another team member pours 100 mL into the base of the bottle.

5. What happened to the water you poured into the bottle? Did this match your prediction?

6. Go to the data table on the last page and record the amount of water that came out of the bottle.

7. Now it's time to make your first prototype of a rain garden. Look at the materials that are available for your garden. Pick two that you would like to use for your garden and explain why you plan to use them.

Material	Explanation

8. Draw and label a diagram of where you will place the items in your bottle. When you have finished your diagram, show your teacher to gain access to your materials.

9. Once you have your materials, build your prototype.

10. Draw an updated diagram of your prototype or take a picture of it.

11. After drawing your prototype, have one team member hold the empty cup under the spout while another team member pours 100 mL of water into the other end of the bottle. Measure the amount of runoff you had and list it in the data table on the last page.

12. What worked well with your prototype?

13. What could be improved with your prototype?

Prototype 2

We are going to work on optimizing our prototypes.

1. Look back at your responses to questions 9-12.

2. Pick two materials (at least one must be different from your first prototype) you plan to use for your second prototype and complete the chart below.

Material	Explanation

3. Draw and label a diagram of where you will place the items in your bottle. When you have finished your diagram, show your teacher to gain access to your materials.

4. Once you have your materials, build your prototype.

5. Draw an updated diagram of your prototype or take a picture of it.

6. After drawing your prototype, have one team member hold the empty cup under the spout while another team member pours 100 mL of water into the other end of the bottle. Measure the amount of runoff you had and list it in the data table on the last page.

7. What worked well with your prototype?

8. What could be improved with your prototype?

Runoff Data Table

	Materials	Amount of Runoff
Empty Bottle		
Prototype 1		
Prototype 2		

Conclusion

Which prototype was more effective? Use data to support your answer.