

Flood Education Activity

Title:	Assessing Floodwater impacts on Pervious v. Impervious surfaces
Activity Type:	Hands-on build
General Purpose:	Flood Awareness, Water storage/conservation
Specific Goal:	The goal of the activity is to observe the quantity of water stored by the different basins based on percentage of pervious materials in order to emphasize the importance of these surfaces in mitigating floodwaters.
Recommended Grade Level:	6th-7th
Arrangement:	groups of 2-4 students; activity time can range from 25 minutes to 1-hr (see breakdown below)
List of Materials (see photos included)	<ul style="list-style-type: none"> A. Base (of your choosing) to hold 2-liter bottle B. 2-Liter bottles cut in half (# depends on activity length) C. Foam sheets (representing impervious surfaces) D. Standard kitchen sponge (representing pervious/permeable surfaces) E. 1000 mL Plastic kitchen measuring cups (2)
Materials breakdown for a <i>25 minute</i> activity	<ul style="list-style-type: none"> ● Base (1 per group/table) ● 2-Liter bottle cut in half (1 per group/table) ● Standard kitchen sponge (6.3" x 3.4" x 0.9") cut in various sizes to fit basins in appropriate percentages (see pwpt before cutting) <ul style="list-style-type: none"> ○ 0%, 25%, 50%, 100% ● 6mm thick Foam sheets, 9"x12" (3 or 4 divided between all students) <ul style="list-style-type: none"> ○ cut in various sizes to fit basins in appropriate percentages <ul style="list-style-type: none"> ■ 100%, 75%, 50%, 0% <p><u>Assign each group/table one basin type.</u> Basin types for this activity are dictated by percentage of pervious cover- 0%, 25%, 50% and 100%. Provide a variety of sizes of foam sheets and sponges at each table in order to let the students properly select the materials to set up <u>one</u> assigned basin type.</p>
Materials breakdown for a	<ul style="list-style-type: none"> ● Base (1 per group/table)

<p><i>45 minute to 1 hr</i> activity (per group):</p>	<ul style="list-style-type: none"> ● 2-Liter bottle cut in half (1 per group/table) ● Standard kitchen sponge (6.3" x 3.4" x 0.9") cut in various sizes to fit basins in appropriate percentages (see pwpt before cutting) <ul style="list-style-type: none"> ○ 0%, 25%, 50%, 100% ● 6mm thick Foam sheets, 9"x12" (3 or 4 <i>per group/table</i>) <ul style="list-style-type: none"> ○ cut in various sizes to fit basins in appropriate percentages <ul style="list-style-type: none"> ■ 100%, 75%, 50%, 0% <p><u>Assign each group/table ALL basin types.</u> Provide all materials for each basin to every group/table.</p>
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Educator directions:

Before breaking into groups, give a brief talk or power-point presentation explaining flash flood risks. Introduce the activity with a discussion on the speed of water as related to the "flash" concept of flash flooding. (All is included in attached powerpoint)

Explain that they will be building basin models with different percentages of impervious and pervious surfaces. The goal of the activity is to observe the **quantity of water** stored by the different basins based on percentage of pervious materials in order to emphasize the importance of these surfaces in mitigating floodwaters. (Also included in attached powerpoint)

Divide the students into groups of 2-4 students for either the 25 minute or hour long activity. (Whiteboard display suggestion included in powerpoint)

After the students assemble the basins:

- [for the 25 minute activity] Apply water (yourself) to each group/table's basin
- [for the hour long activity] Have students apply the 500 mL to each basin

Have students record results into a table (see example in attached powerpoint)