Pervious vs. Impervious Investigation

FOR STUDENTS

Date: _____ **Time:** _____ **Study Site:** _____

Names of field investigators: _____

Questions:

A. Is the study site covered more with pervious or impervious surfaces?

Prediction: _____

B. What is the volume (m^3) of potential runoff of water from the study site?

Prediction: _____ **m^3**

1. Take measurements of your study site. Map the site on graph paper.

2. Calculate the area of the study site: (The example below assumes a rectangular-shaped study site)

Length of study site: _____ Width of study site: _____ Study site area (length x width): _____

3. Calculate the total area of impervious surface on the study site:
Measure the dimensions of each impervious surface in order to calculate the area. Impervious surfaces include buildings, paved areas, sidewalks, etc.

Description of Impervious Surfaces	Length	Width	Area
#1:			
#2:			
#3:			
#4:			
Total area of all impervious surfaces =			

4. Calculate the % of impervious surface on the study site: _____

$$\% \text{ impervious surfaces} = \frac{\text{sum of the areas of all the impervious surface X 100}}{\text{total area of the site}}$$

Is the study site covered more with pervious or impervious surfaces? Provide percentages in your explanation:

_____

5. Calculate the volume of rainfall on the study site. Volume = Area of study site x depth of rain per day/month/or year. Be careful! Make sure you convert all of your measurements to either metric units or standard units before completing calculations! **Volume =** _____ **(ft^3 or m^3)**

6. Calculate the runoff potential of the study site. Runoff potential = % impervious surfaces x the total rainfall depth. **Runoff Potential=** _____**(ft^3 or m^3)**

7. Record on your map your observations of the path water takes during a heavy rainstorm.

8. Record on your map or on the back of this sheet any other observations about water flow.