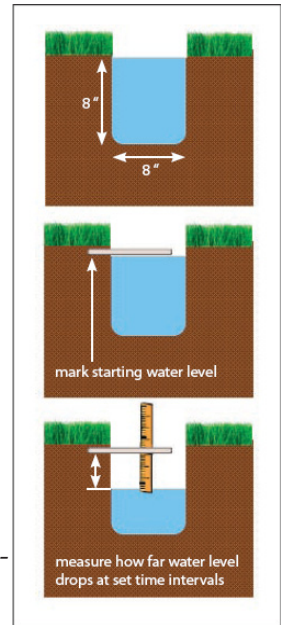


Infiltration Activity: Conducting a Percolation Test

Conducting a percolation test is a very important step in planning a raingarden. Each patch of ground has a different ability to pull water into the ground, called either infiltrate or percolate. Knowing how much water your proposed raingarden can handle is integral in the design phase as it will dictate everything from the square footage of the garden to the types of vegetation you plant. Soil composition can be highly variable so be prepared to do percolation tests at different areas within the proposed site.

Step 1: Dig a hole

Dig your hole to be 8 inches deep and 8 inches across; leave soil nearby to fill the hole after the test. Notice the composition of the soils. Dark, black soils or the presence of sand will likely produce a high infiltration rate. Compacted ground with clay close to the surface will likely have a low infiltration rate. If you are unable to dig a whole the full 8 inches deep, you can still conduct the percolation test as noted below but you might want to consider another location for the raingarden. Mark the hole with a flag or cone if it is in a highly traveled area. *A percolation test can only be performed when the ground is not frozen.*



Step 2: Fill the hole with water

Use a hose or bucket to fill the hole with water. Let the hole fully drain. *Saturating the soils prior to performing the test below will provide you with the most accurate results. Do not take measurements in this step.*

Step 3: Fill the hole with water, again

Use a hose or bucket to fill the hole with water. Mark the water level on the side of the hole - a popsicle stick or plastic knife work well. Note the time or start a stop-watch.

Step 4: Measure the difference in water level

Return to the site periodically over the next 24 hours. Record the distance between the original water level and the current water level, along with the time the measurement was taken.

Step 5: Refill the hole with original soil

Step 6: Calculate the “Infiltration Rate” of your site

If the infiltration rate is less than 2 inches per hour, it is recommended to amend soils with a mixture of 75% sand and 25% compost and/or increase the depth of your garden.

$$\left[\frac{1 \text{ inches}}{\text{“y” hours}} = \frac{\text{“x” inches}}{24 \text{ hours}} \quad \begin{array}{l} \text{“x”} = \text{percolation result} \\ \text{“y”} = \text{time in your test} \end{array} \right]$$

Example:

Sample #	Time	Starting Level	Current Level	Change
0	Start	8.0”	n/a	n/a
1	2 hours	8.0”	7.5”	.5”
2	4 hours	8.0”	7.0”	1.0”
3	6 hours	8.0”	6.5”	1.5”

$$\frac{1.5 \text{ inches}}{6 \text{ hours}} = \frac{\text{“x” inches}}{24 \text{ hours}} \quad x = 6 \text{ inches} \quad \begin{array}{l} \text{Infiltration Rate} = 6 \text{ inches per 24 hours} \\ \text{Raingarden Depth} = 6 \text{ inches} \end{array}$$

Source: Blue Thumb

