

This activity, and more like it, can be found in 4-H Canada's **Steeped in Soil Activity Book**.

Learn more at [4-h-canada.ca/steepedinsoil](http://4-h-canada.ca/steepedinsoil)

## pH Preferences

As mentioned earlier, the pH of the soil tells you how acidic or basic it is. Simply put, pH stands for percentage of hydrogen, and is a measurement of the concentration of hydrogen ( $H^+$ ) in a solution. If there is a lot of  $H^+$ , it is acidic, and if there isn't as much, it is basic. pH is measured on a scale from 1-14, with 1 being the most acidic (for example, battery acid), 14 being the most basic (for example, drain cleaner), and 7 being neutral (for example, water). Check out **Figure 4** for an example of the pH scale.

### Materials:

- Different types of soil
- Trowel to dig up soils
- pH strips
- Small containers
- Water—test the water with a pH strip first to make sure it as close to pH 7 as possible. If your tap water is too acidic or basic, then consider using bottled water.



### Instructions:

1. Head outside to gather different types of soil. Consider having members bring in samples of soil from their homes so you have a wider range of soil environments to test.
2. Put in a few tablespoons of the first type of soil you want to test into a small container.
3. Add water to the container until the soil is covered. Then gently shake or stir the soil until it mixes with the water and makes a soupy, liquid mud.
4. Dip the pH strip into the liquid, pull it out, and shake off any excess bits of soil.
5. Compare the pH strip with the guide on the container to figure out the pH of that soil sample.
6. Repeat steps with the other types of soil.

### Discussion:

- What was the pH of each of the soils tests? What would grow well in those soil types?
- Was there a difference between different soil layers (depths) that were tested?
- How could we change the pH of soil? Research how gardeners and farmers are able to change the pH of soil.