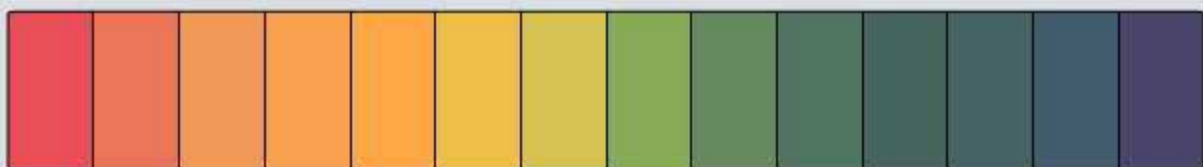


The pH Scale



**strong
acid**

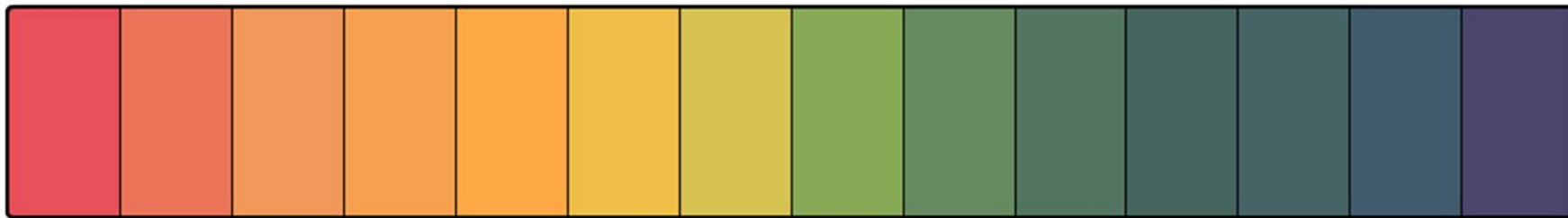
neutral

**strong
alkali**



What is universal indicator?

Universal indicator has a range of colors that show how weak or strong the acid or alkali is.



strong acid **weak acid** **neutral** **weak alkali** **strong alkali**

What is the color for a weak acid?

What is the color for a strong alkali?

Universal indicator is made from a mixture of indicators. Why do you think it is more useful than **litmus**?

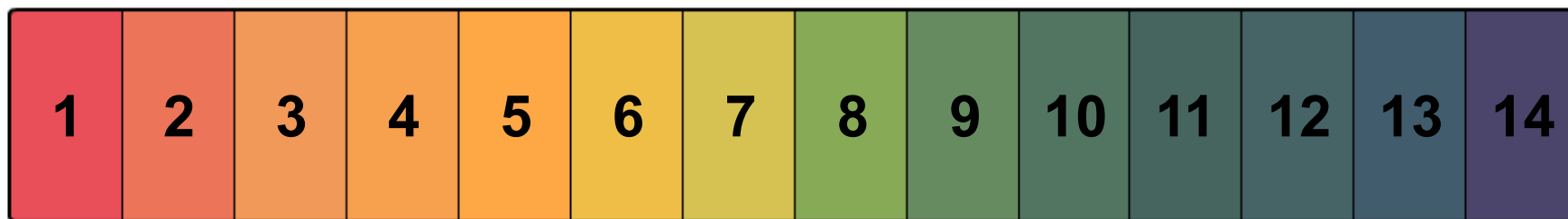


What is the pH scale?

The strength of an acid or alkali is measured by the **pH scale**.

Each universal indicator color is given a pH value.

Universal indicator can tell you the pH of a solution.



strong acid

neutral

strong alkali

What is the pH of a weak acid?

What is the pH of a strong alkali?

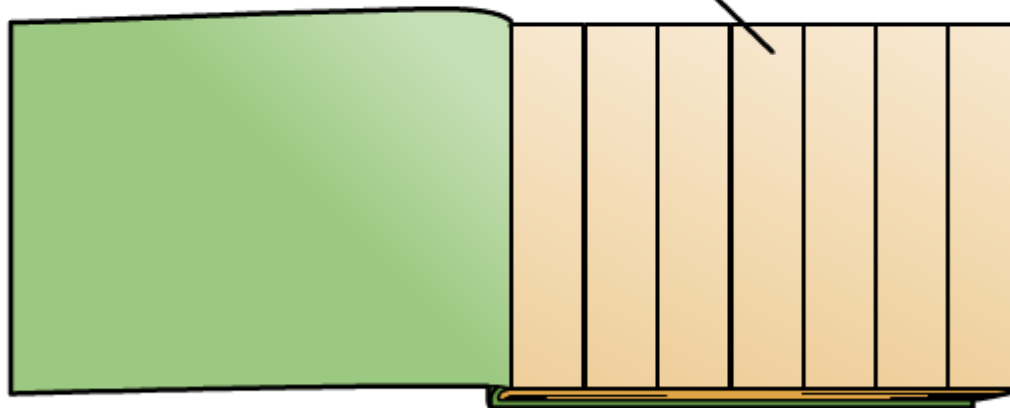


Using universal indicator to find pH

pH paper consists of small strips that have been soaked in a solution of universal indicator.

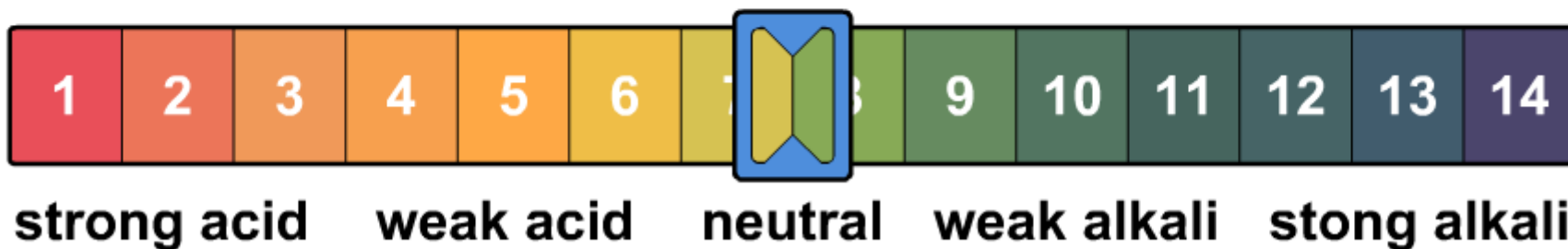
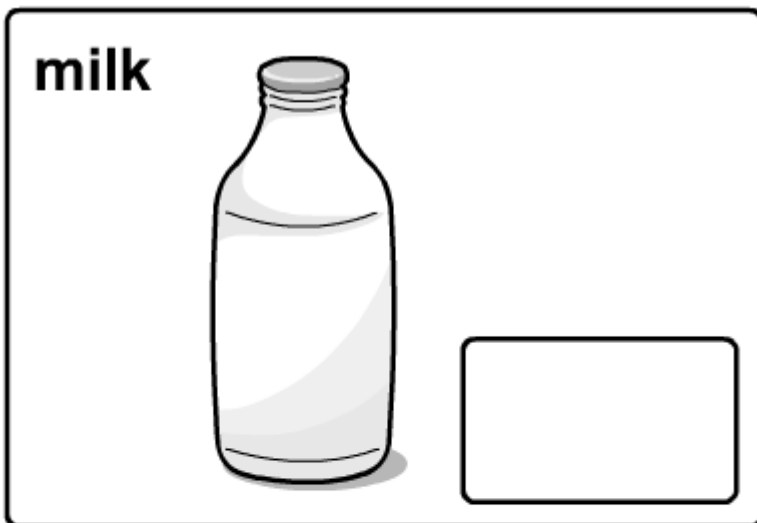
Click "**play**" to find out how pH paper can be used to approximate the pH of household items.

strips of pH paper



What is the pH?

Is the pH value higher or lower?



?

next

solve

C

↶

Different soils have different pH levels. This is because they are made up of different rocks, and so contain different chemicals.

The pH of soil affects the availability of nutrients, and plants prefer to grow in soils of a certain pH.

For example, strawberries grow best in acidic soil, and plums grow best in alkaline soil.



How could you check the pH of the soil in your yard?

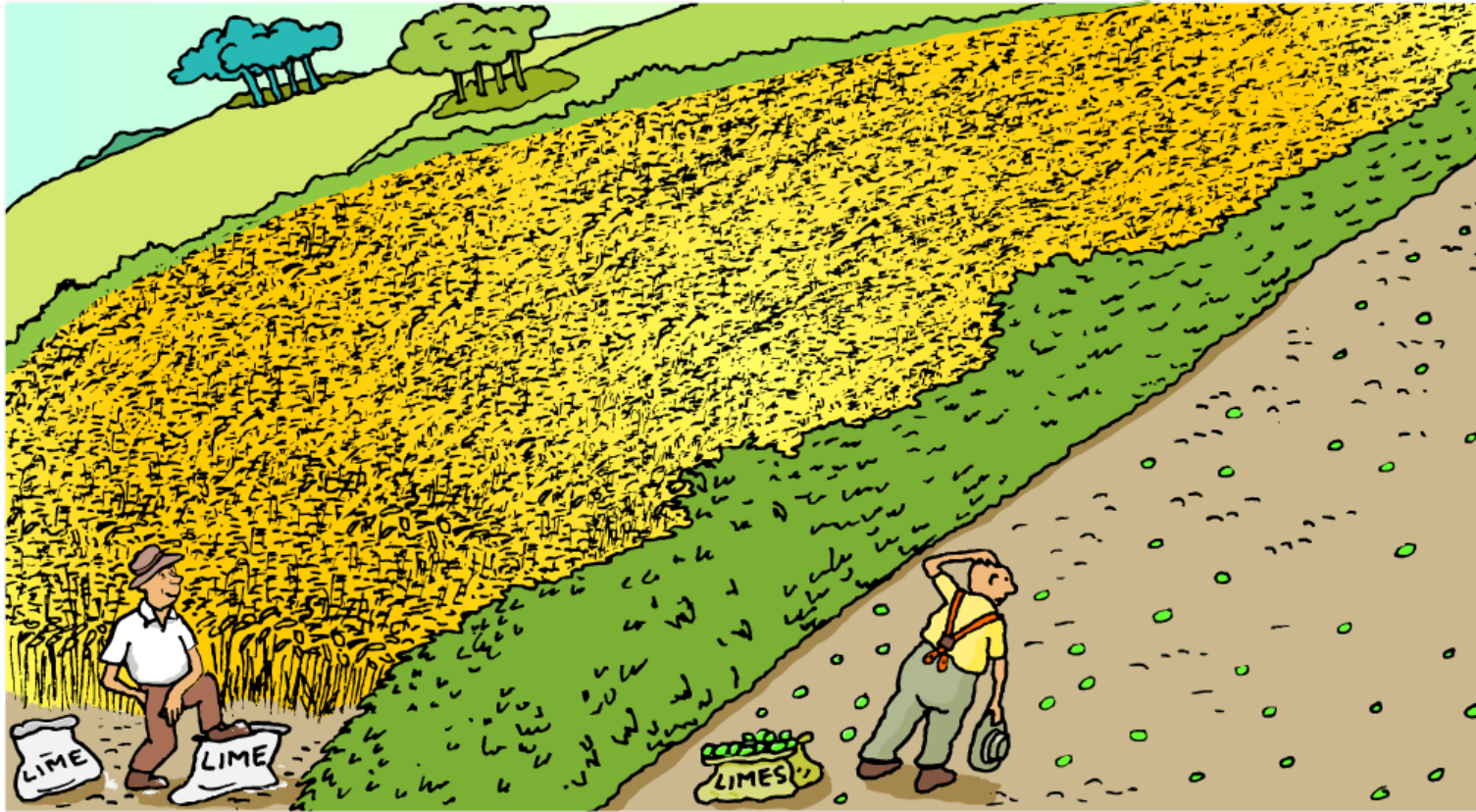


Testing the pH of soils



Changing soil pH

If soil is too acidic to grow certain crops, **lime** can be added.



Lime is an alkali called calcium oxide.

What effect does lime have on the pH of soil?

Are these statements about acids and alkalis true or false?

- | | | |
|----|---|--|
| 1. | Pure water has a neutral pH. | |
| 2. | Car battery acid is a very strong alkali. | |
| 3. | Vinegar is a weak acid. | |
| 4. | Soap is a very weak acid. | |
| 5. | Oven cleaner is a very strong alkali. | |
| 6. | Stomach acid is a very strong alkali. | |

true

false

solve



Complete these sentences about acids and alkalis

1. Some liquids are acids, some liquids are alkalis, and some are _____.

2. Strong acids turn universal indicator _____ . Weak acids turn universal indicator yellow.

3a. Acids have _____ values of 1–6.

3b. Examples of acids are _____ and

purple

red

toothpaste

vinegar

neutral

pH

green

alkalis



hide

solve

