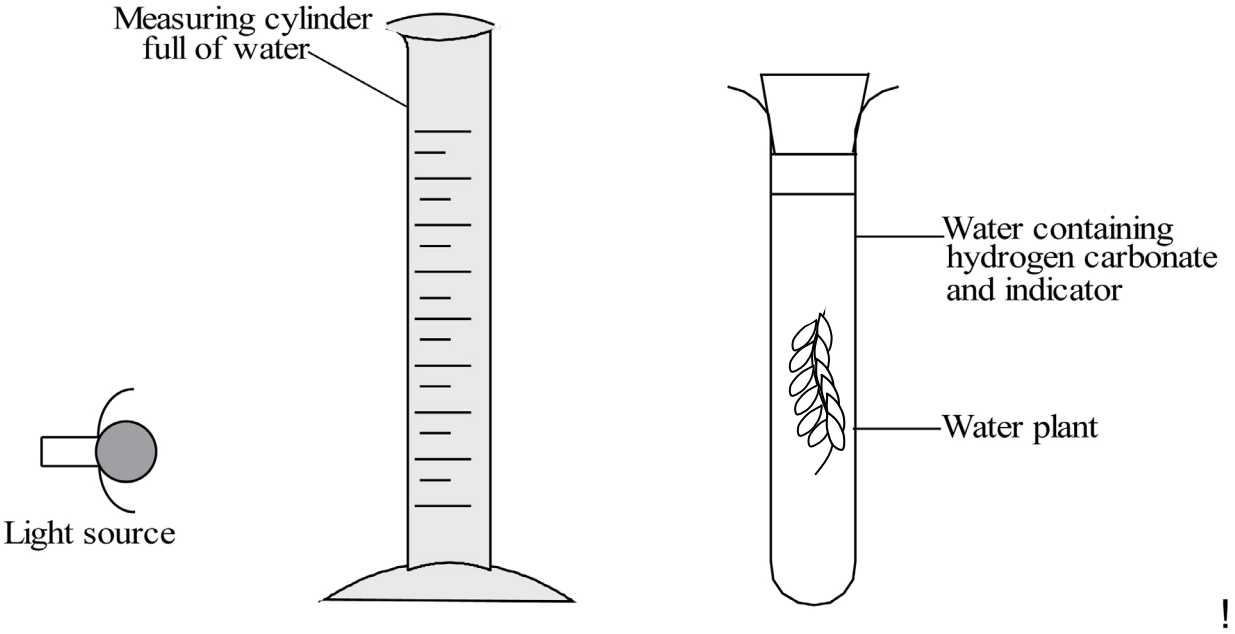
SCIENCE TEACHER.IE

How does concentration of carbon dioxide affect rate of photosynthesis?

An investigation was set up to find out if the concentration of carbon dioxide affected the rate of photosynthesis.

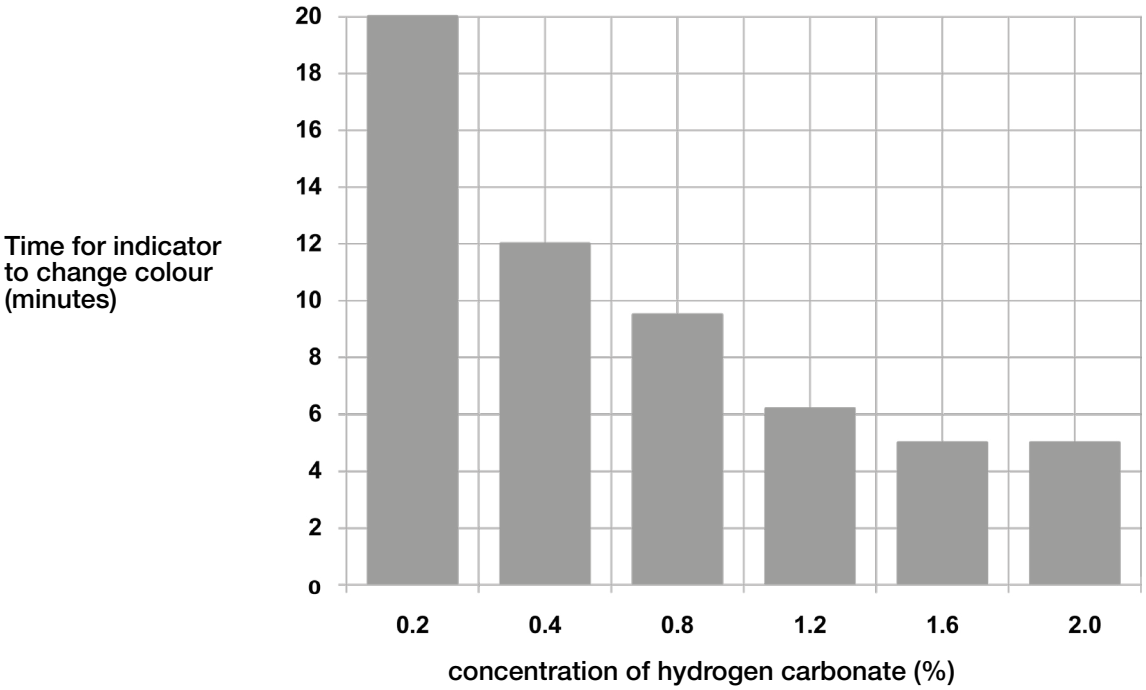
A water plant was placed in each of 6 test tubes containing water and different concentrations of hydrogen carbonate. The hydrogen carbonate releases carbon dioxide into the water.

An indicator was added to each test tube. The indicator changes from yellow to green when oxygen is released. Each test tube was illuminated by a lamp placed behind a measuring cylinder full of water.



The time for the indicator to change from yellow to green was recorded and plotted on a chart.

The bar chart shows the results of this investigation.



(1) What was the effect of increasing the hydrogen carbonate concentration from 0.2 to 0.4%?

[2]

(2) At what concentration of hydrogen carbonate was the rate of photosynthesis highest?

[1]

(3) Give an explanation for your answer.

[2]

(4) Outline how a similar experiment could be set up to investigate the effect of temperature on the rate of photosynthesis.

[4]