

The Scientific Method

3

When scientists are asked questions, they may not know the answers. They think of possible answers, called hypotheses, and experiment to find the correct answer. Using the results of the experiment, they may need to form another hypothesis and test it. This way of solving a problem is called the scientific method.

Strategy

You will predict whether or not red cabbage juice will remain red when chemicals are added to it.

You will test your prediction with an experiment.

You will observe what happens and record your observations.

You will draw conclusions based on your observations.

Materials

3 droppers

graduated cylinder (25 mL)

labels

40 mL red cabbage juice

test tube rack

4 test tubes (18 × 150 mm)

chemical X

chemical Y

chemical Z

(CAUTION: Do not spill chemicals X, Y, or Z on clothes or skin.)

Procedure

1. In the space below, predict what will happen to the red cabbage juice when chemicals X, Y, and Z are added to it. _____

2. Label four test tubes, 1, 2, 3, and 4.
3. Add 10 mL of red cabbage juice to each test tube.
4. Add 10 drops of chemical X to test tube 1.
5. Add 10 drops of chemical Y to test tube 2.
6. Add 10 drops of chemical Z to test tube 3.
7. Do not add anything to test tube 4. This is the control. The control is the part of an experiment that is not tested.