

Name

Date

Year 3 · Science · Mixing materials · 2.3 Dissolving

Think like a Scientist: Speedy Sugar!



Does a sugar cube dissolve faster in warm water or in cold water? Plan a fair test and find out at home.

What I will learn

- I can plan a fair test.
- I can record my results in a table and a bar chart.
- I can say whether my prediction was right.

Key words

dissolve

fair test

prediction

results

temperature

My question

Does a sugar cube dissolve faster in **warm** water than in **cold** water?

What do I already know?

Name two things that dissolve in water and one thing that does not.

Dissolve: _____ and _____ Does not dissolve: _____

My prediction

I think the sugar cube will dissolve fastest in _____ water,
because

Step 1

Get ready

You will need

- | | |
|---|--|
| ☐ 3 clear cups, all the same | ☐ 3 sugar cubes |
| ☐ cold water from the fridge | ☐ water at room temperature |
| ☐ warm water from the tap | ☐ a measuring jug or 1 cup |
| ☐ a clock or timer | ☐ labels A, B and C |



Keep it fair

Change only **one** thing: how warm the water is.

Keep everything else the same: the same amount of water, one sugar cube in each cup, and **no stirring**.

Stay safe

- Ask an adult to pour the warm water. Never use boiling water.
- Do not drink your mixtures.
- Wipe up any spills straight away.

Step 2

What to do (tick each step when you have done it)

- 1 Label the cups A, B and C. ☐
- 2 Pour 1 cup of **cold** water into cup A and 1 cup of water at **room temperature** into cup B. ☐
- 3 Ask an adult to pour 1 cup of **warm** water into cup C. ☐
- 4 Drop one sugar cube into each cup at the same time. Start the timer. ☐
- 5 Watch without stirring. Write down the time when each cube has completely gone. ☐
- 6 Stop after 15 minutes. If a cube is still there, write “more than 15”. ☐

Step 3

Record what happens

Cup	Time to dissolve (minutes)	What I saw
Cup A cold		
Cup B room temperature		
Cup C warm		

Draw cup C

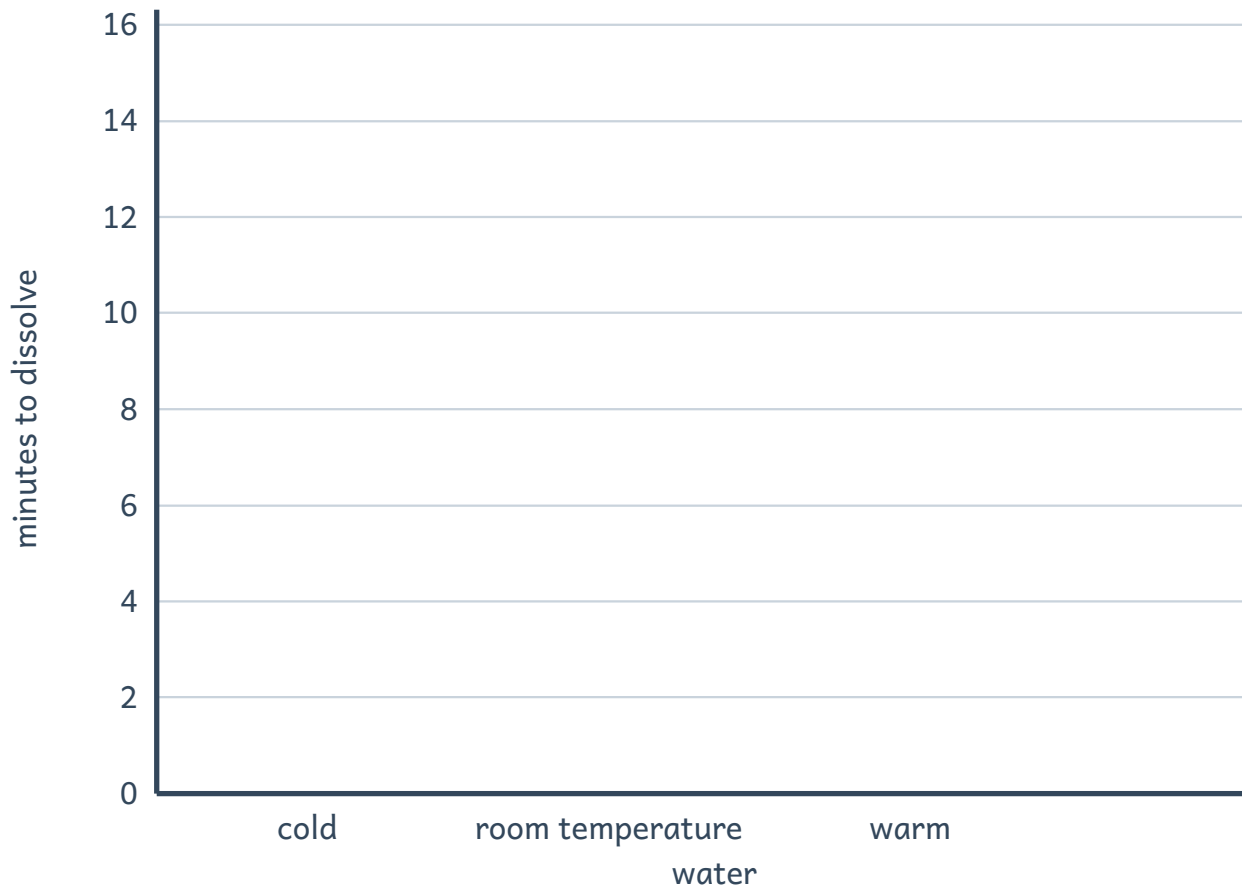
At the start

After 5 minutes

Step 4

Show and explain your results

Draw a bar for each cup to show how many minutes its sugar cube took to dissolve.



The sugar cube dissolved fastest in _____ water.

Was my prediction right? ☐ Yes ☐ No

How do I know?

One way I could make my test even better:

Think like a Scientist: Speedy Sugar! Answers

Notes for grown-ups: what should happen and how to check the work.

What should happen

The cube in **warm** water dissolves fastest and the cube in **cold** water slowest. Without stirring, a cube in warm water often takes about 3 to 6 minutes and in cold water well over 10 minutes, but times vary a lot with the sugar and the cups. What matters is the order: warm, then room temperature, then cold.

Checking the work

Prediction: any prediction with a reason is fine; it does not have to be right.

Fair test: the child should say only the water temperature changed, and the amount of water, the size of the sugar cube and no stirring stayed the same.

Results table: a time (or “more than 15”) for each cup, and something they saw, such as “the cube got smaller” or “wavy lines in the water”.

Bar chart: three bars whose heights match the table.

Conclusion: “warm”, and a reason that uses the results (“it took the fewest minutes”).

Making it better: e.g. repeat the test and take an average; use a thermometer; measure the water exactly; watch more closely.

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