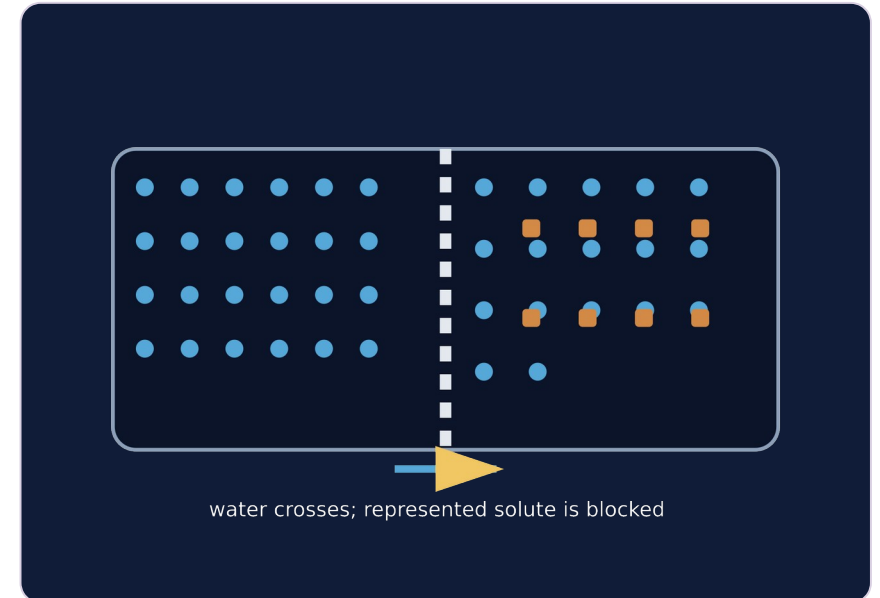


Osmosis

I can define osmosis and predict net water movement through a partially permeable membrane.

Notice. Recall. Be ready to explain.

- 1 What does net movement mean?
- 2 What can a membrane control?



Retrieval answers

Make a prediction

A membrane lets water through but blocks large solute particles. Which substance can show osmosis in this model?

A Only the solute

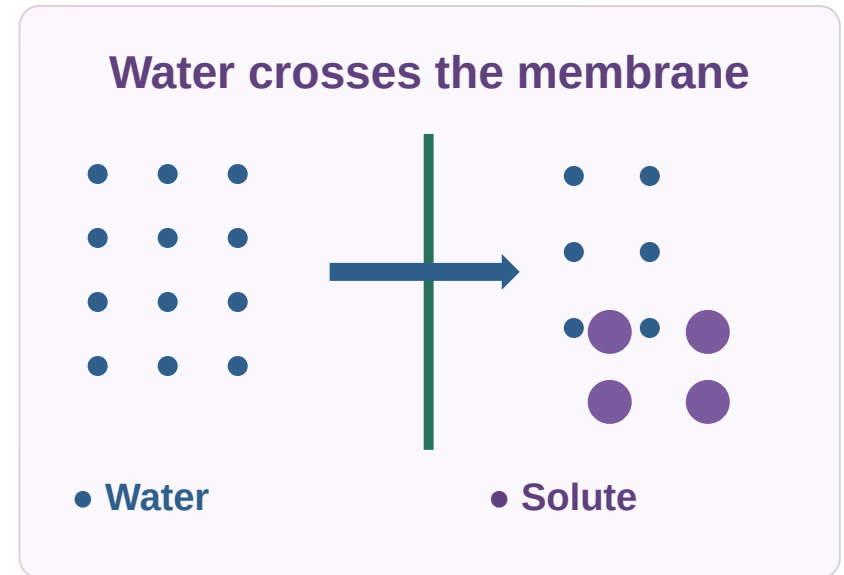
B Water

C Both must cross together

Commit, then check

Watch the model

- 1 Water particles move randomly on both sides of the membrane.
- 2 The partially permeable membrane allows water through but blocks the represented solute.
- 3 Net water movement is from the more dilute solution to the more concentrated solution in this model.



[View labelled diagram](#)

[Optional video](#)

Choose and justify

Which definition is specific to osmosis?

A Movement of any particles from high to low concentration

B Net movement of water through a partially permeable membrane from a more dilute to a more concentrated solution

C Movement against a gradient using energy

D Water moving because it wants to dilute solute

Give the deciding clue before checking.

Check the reasoning

Connect the science

- 1 A more dilute solution has a higher concentration of water in the simplified GCSE model.
- 2 Water can move both ways, but the net movement follows the difference between sides.
- 3 Cells and tissues gain or lose water depending on the surrounding solution.

Mass is evidence of net water movement

4.00 g → 3.60 g Change = -0.40 g

$(-0.40 \div 4.00) \times 100 = -10\%$

Negative change: net water loss from cells.

Make a membrane decision

Predict net water movement. State which solution you are comparing with the cell solution.

- 1** A Surroundings are more dilute.
- 2** B Surroundings have equal concentration.
- 3** C Surroundings are more concentrated.

Reveal shared reasoning

Your independent evidence

A plant cell is placed in sugar solution more concentrated than its cell solution. Explain the net movement of water and why the solute representation does not cross the membrane in this model. Then distinguish the process from active transport.

Optional support

Name the substance that moves. Check which solution is more dilute. Add the membrane and net direction. Start: “Water moves...”

Make one precise correction to the same work after feedback.

[Open worksheet pages](#)[Model after first attempt](#)

What changed in your thinking?

Which substance and membrane condition distinguish osmosis?

- 1 Point to one improvement in your work.
- 2 Choose what you want to revisit.
- 3 Tell your teacher; agree the next step together.

Retrieval and prediction check

- 1 The overall difference between movements in opposite directions.
- 2 Which substances can pass into or out of a cell.

Water

[Return to Starter](#)

Check the deciding clue

Net movement of water through a partially permeable membrane from a more dilute to a more concentrated solution

Accurate GCSE phrasing for this course.

Compare your reason. Correct one step if needed.

[Return to We Do](#)

Our shared reasoning

A: net water movement into the cell.

B: no net movement; water still moves both ways.

C: net water movement out of the cell.

Osmosis needs a partially permeable membrane.

[Return to shared task](#)

Compare after your first attempt

Water moves out of the plant cell by osmosis because the surrounding sugar solution is more concentrated and the cell membrane is partially permeable. Water can cross the membrane in the model, but the larger solute particles are blocked. Unlike active transport, osmosis does not move solute against a concentration gradient using cellular energy.

Use the model to improve your explanation in your own words.

[Return to independent task](#)

Your lesson resources

Worksheet pages are stored inside this PowerPoint.

[Worksheet · page 1](#)[Worksheet · page 2](#)[Standard PDF](#)[Supported PDF](#)[Depth PDF](#)[Editable Word worksheet](#)[Open online lesson / model](#)

Named files are in this week's folder. Online lesson and video need internet.

[Optional concept video](#)

Worksheet · page 1

Use your printed copy.
Keep the first attempt.

MADE BY MATT / LAUNCH SCIENCE

W5L1 | Membrane decisions

Monday | 09:30–10:10 | Introduce | Editable pupil sheet

Name: _____ Date: _____

Core first. Write, speak, point or dictate your own words. Keep the first attempt so you can improve it.

Optional support: Name the substance that moves. Check which solution is more dilute. Add the membrane and net direction. Start: “Water moves...”

Work together

Draw a plant cell in each of three labelled surroundings: more dilute than its cell solution, equal, and more concentrated.

Your labelled sketch / arrows:

More dilute outside	Equal concentrations	More concentrated outside

1. Predict net water movement in the three cases, in order.

2. Explain why the potato may lose mass in a solution more concentrated than its cell solution.

Return to task

Worksheet · page 2

Continuation is optional.
Improve the same work.

MADE BY MATT / LAUNCH SCIENCE

W5L1 | Continue and improve

Use after the core questions when directed

3. If water can mix freely and there is no separating membrane, why is “osmosis” not the precise name?

Optional transfer

At equal concentrations, has water stopped moving?

Depth: name an assumption or limit, then say what evidence would strengthen your answer.

Improve the same work

One correction I made, and why:

My request for next time: _____

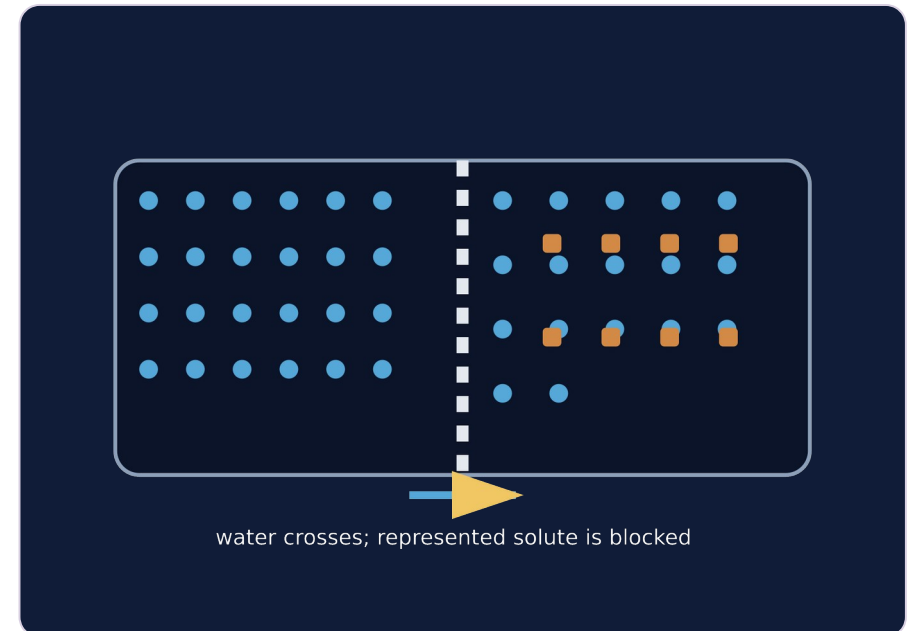
Return to task

Watch, pause and explain

Osmosis

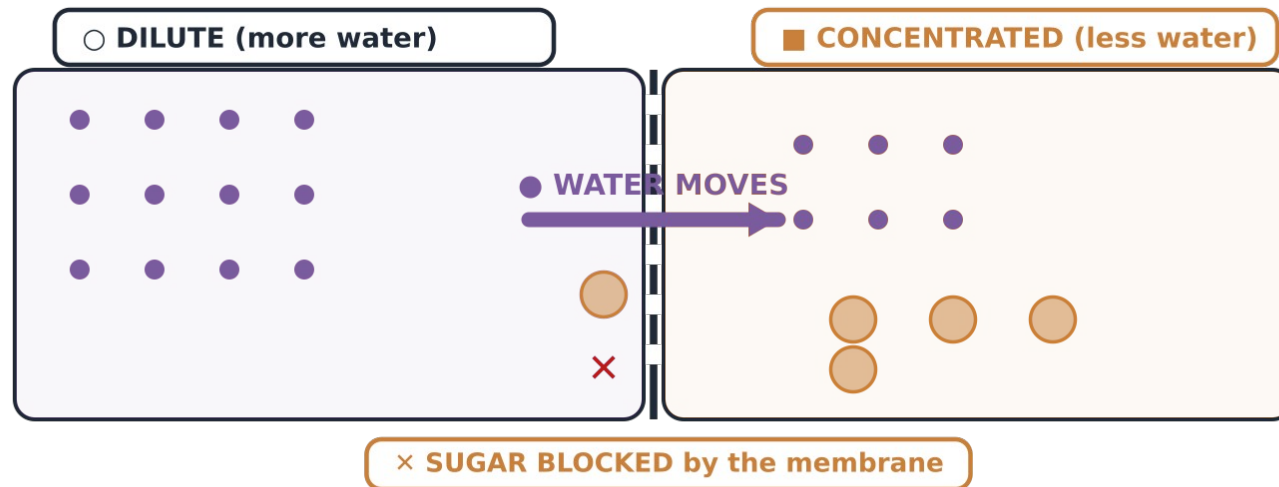
Which substance moves, through what, and in which net direction?

[Play freesciencelessons video](#)



No connection? Use the still model and explain the same question.

Look closely at the model



A model illustration: use the stated data for calculations.

[Return to I Do](#)