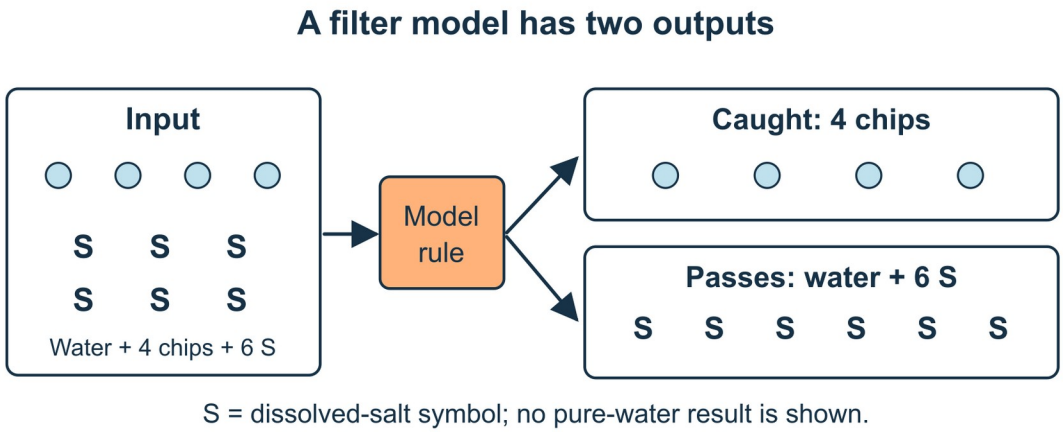
Plan a separation on paper

Which property would a proposed separation use, and what remains assumed?

Trace a paper filter model and explain why removing visible solids would not remove a dissolved substance.

Investigate | 10-20 minutes, or one trace | The supplied example, read or heard, Optional scrap paper and a pen or pencil

Start here Use a fictional mixture diagram containing four large blue chip symbols and six S symbols for dissolved salt in water. All of it stays on paper.



Two outputs, with every symbol accounted for

1 State the model rules

In this supplied model, a filter catches the large chips but allows water and the dissolved salt to pass. These are declared model rules, not results of a performed test.

2 Trace both outputs

Move or redraw all four chip symbols into ‘caught by filter’. Put all six S symbols with the water in ‘passes through’. Keep each kind of symbol accounted for.

3 Name what remains mixed

The passed-through liquid still contains dissolved salt. Removing the visible chips does not turn it into pure water or make it suitable to drink.

4 Keep a next method separate

If separating salt from water is a new goal, it needs a different justified process. State that question without heating, evaporating or trying anything physically.

Constructed filter model account for both parts

The four chip symbols represent an insoluble large-particle component; the six S symbols mark portions of dissolved salt, not individual molecules.

• Input: four chips plus water containing six S symbols.

• Caught: four chips. Passed through: water containing all six S symbols.

• The model separates the chips, while the salt-water mixture remains.

What this example can show Actual filtration depends on material properties and filter size. This diagram is not a water-treatment instruction or a claim that a real filter was tested.

A different way

Follow the symbols by pointing or explain where they go aloud. No filter, salt, water, containers or scissors are required.

If you want to go further

Change the model so the solid chips are smaller than its stated filter openings. Explain why the previous 'caught' output would no longer follow.

Something to notice

Did every symbol reach an output, and did I confuse clear-looking with pure?

Read or explore more

Horizon topic Mixtures Separation

https://launchhorizonhq.com/learn/mixtures-separation/

Horizon topic Solutions Dissolving

https://launchhorizonhq.com/learn/solutions-dissolving/

Horizon topic Chemistry

https://launchhorizonhq.com/learn/chemistry/

OpenStax, Rice University 1.2 Phases and Classification of Matter

https://openstax.org/books/chemistry-2e/pages/1-2-phases-and-classification-of-matter

Science Learning Hub, University of Waikato Soluble

https://www.sciencelearn.org.nz/glossary/soluble