Solubility **Quick Assessment**

1. Write the keyword next to each definition:

a. The liquid a substance is being dissolved in. _____

b. The solid substance being dissolved. _____

c. A substance that will not dissolve. _____

d. A mixture of a solute and solvent that will not separate out. _____

e. A substance that will dissolve. _____

f. A solution that won't dissolve anymore solute at that temperature. _____

g. A measure of how much solute will dissolve. _____

2. Use some of the keywords from question 1 to identify the substances in each scenario.

a. Klaudia makes some gravy.

The gravy granules are the... _____

The water is the... _____

The gravy is a... _____

b. Romario watches his teacher add a dark powder called potassium permanganate to water.

The potassium permanganate is the... _____

The water is the... _____

The purple mixture afterwards is a... _____

c. Victor adds sodium chloride (salt) to water to make brine.
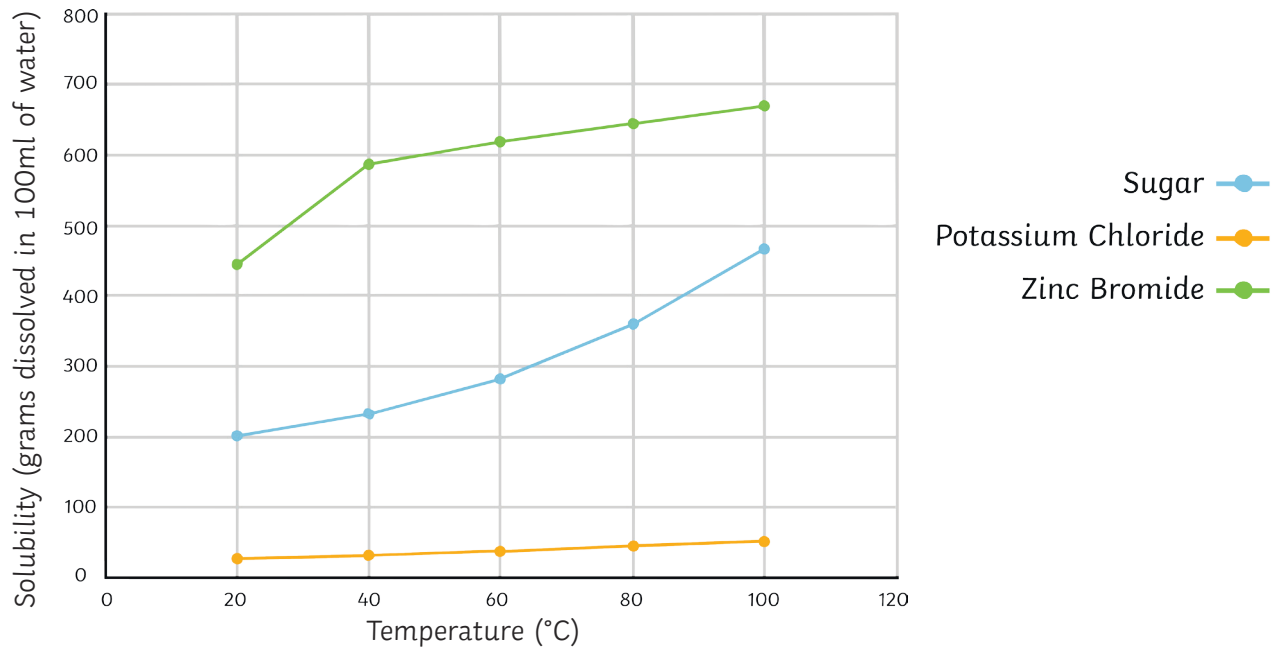
The water is the... _____

The sodium chloride is the... _____

The brine is a... _____

3. Parminder added three different solutes to different temperatures of water. She recorded how many grams could be added until the solution became fully saturated and then plotted this on the graph below.

a. Which substance has the highest solubility at 100°C?

_____

b. Which substance has the lowest solubility at 50°C?

_____

c. Why do you think Parminder did not choose to use sand or chalk for this experiment?

_____

d. Describe the curve for zinc bromide. **Tip**: When you describe a pattern on a graph in science, try to structure your sentence to include a verb, adverb and two pieces of data.

_____

_____

_____

_____

Learning Objectives:

☐ I can identify keywords.

☐ I can apply keywords to new situations.

☐ I can extract information from a graph.

☐ I can describe patterns on graphs.

Solubility Quick Assessment **Answers**

1.

a. The liquid a substance is being dissolved in. **solvent**

b. The solid substance being dissolved. **solute**

c. A substance that will not dissolve. **insoluble**

d. A mixture of a solute and solvent that will not separate out. **solution**

e. A substance that will dissolve. **soluble**

f. A solution that won't dissolve anymore solute at that temperature. **saturated**

g. A measure of how much solute will dissolve. **solubility**

2.

a. The gravy granules are the... **solute**

The water is the... **solvent**

The gravy is a... **solution**

b. The potassium permanganate is the... **solute**

The water is the... **solvent**

The purple mixture afterwards is a... **solution**

c. The water is the... **solvent**

The sodium chloride is the... **solute**

The brine is a... **solution**

3.

a. Which substance has the highest solubility at 100°C? **zinc bromide**

b. Which substance has the lowest solubility at 50°C? **potassium chloride**

c. Parminder did not choose to use sand or chalk for this experiment as they are **insoluble**.

d. Describe the curve for zinc bromide: The solubility of zinc bromide is 447g in 100ml of water at 20°C and rises sharply to 591g at 40°C, then continues to rise but more gradually to 672g at 100°C.

The key teaching point here is to prepare students for GCSE style questions and to start using verbs and adverbs, alongside data points.

Solubility Quick Assessment Teacher Feedback

Effort: 1   2   3   4   5

You can identify **some** keywords from their definitions.	You can identify **most** keywords from their definitions.	You can identify **all** keywords from their definitions.
With guidance, you can apply **some** keywords to new situations.	You can independently apply **most** keywords correctly to new situations.	You can independently apply **all** keywords correctly to new situations.
With guidance, you can **identify** substances with high and low solubility.	You can independently **identify** substances with high and low solubility.	You can independently **identify** substances with high and low solubility and **suggest** why some substances were not used.
With guidance you can find at least one piece of data on a graph.	You can independently find at least one piece of data from a graph.	You can independently find data on a graph and use units in your answer.
With guidance you can use basic verbs to describe the pattern of the graph.	You can independently use verbs to describe the pattern of a graph.	You can independently use verbs and adverbs to describe the pattern of a graph.

Next Steps:

_____

_____

_____

_____

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Secondary