

PS02A -Teach About Water and Solutions

Use with BrishLab PS02A
Done By: Coach

[Image Link](#)

1- How many sides to a container do you
need for a liquid and why?

Page 1
Para 2

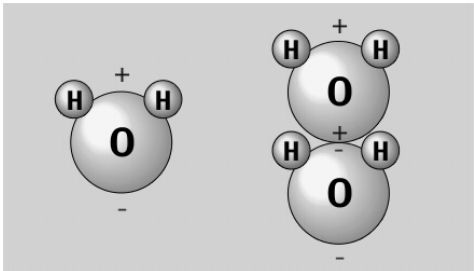


5 out of 6 - no top needed. Gravity holds it in.

[Image Link](#)

2- Explain a polar molecule.

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Para 4

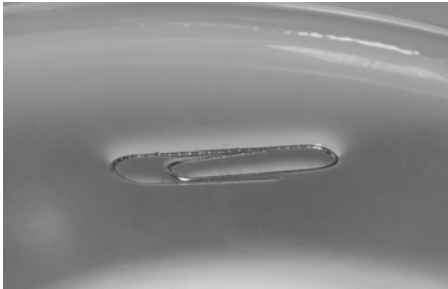


The different ends of a water molecule
have charges - like the poles of a magnet.

[Image Link](#)

3- Why is water a "special" molecule?
Use the word "skin".

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Para 5



A paper clip can "float" on the skin of the water.

[Image Link](#)

4- Why does ice float?

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Para 6

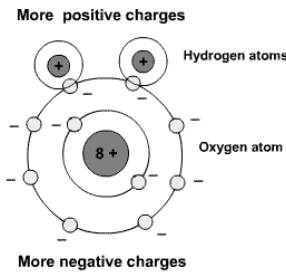


Ice is less dense than water.

[Image Link](#)

5- Why does a water molecule have a slight
charge at both poles?

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Para 7



Atoms are not the same on each end of a
water molecule so there is a slight charge.

[Image Link](#)

6- What two things happen to water at 100° C (212° F)?

Page 2
Para 10

The diagram shows three states of water: ICE, WATER, and STEAM. Between ICE and WATER, the temperature is 32°F. Between WATER and STEAM, the temperature is 212°F. Below these, the Celsius equivalents 0°C and 100°C are shown. Arrows indicate transitions: HEATING (Ice to Water, Water to Steam) and COOLING (Steam to Water, Water to Ice). Text boxes explain that at 0°C, ice can only be heated to 32°F before melting, and at 100°C, water can only be heated to 212°F before boiling. Continued heating causes a change of state. A note at the bottom states: 'Water either evaporates or condenses at 100° C'.

Image Link

7- What happens to water to make it solid and then into a liquid?

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Para 11

This diagram illustrates the energy changes during phase transitions. It shows Solid Water, Liquid Water, and Water Vapor. Freezing (Solid to Liquid) releases 80 Calories, and melting (Liquid to Solid) absorbs 80 Calories. Condensation (Vapor to Liquid) releases 600 Calories, and evaporation (Liquid to Vapor) absorbs 600 Calories. A large arrow at the bottom points left, labeled 'Heat Energy Released', and a smaller arrow points right, labeled 'Heat Energy Absorbed'.

Removing heat turns liquid water into solid water (ice). Adding heat turns solid water (ice) into liquid water.

Image Link

8- Why do we use salt on an icy street?

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Para 12

A black and white photograph of a snowplow truck equipped with a salt spreader, driving on a snowy street. The truck is spreading a layer of salt onto the pavement.

Salt lowers the freezing point of water so ice does not form.

Image Link

9- Salt in water is a solution. Salt is the solute and water is the solvent - there is more water than salt.

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Para 12

How can you remember this?

The diagram shows three containers. The first is labeled 'WATER' and 'Solvent'. The second is labeled 'HOT CHOCOLATE' and 'Solute'. The third, which contains the mixture, is labeled 'WATER HOT CHOCOLATE' and 'Solution'.

The 'u' in Solute is what 'u' put into the larger solvent.

Image Link

10- Why is water known as the "Universal Solvent"?

Page 2
Para 13

A photograph showing several glasses filled with water. Some glasses contain lemon slices, and others contain sugar cubes, demonstrating water's ability to dissolve many different substances.

Because so many things can be dissolved into water.

Image Link

Wrap It Up: - Draw and color a water molecule and the polar charge.

Page 1
Para 4

The diagram shows a water molecule (H₂O) with a central Oxygen atom (large sphere) and two Hydrogen atoms (smaller spheres). The bond angle is labeled as 105°. The top of the molecule is labeled 'Positive side' and the bottom is labeled 'Negative side'.

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