

Name _____

It's Your Turn : Keystone Review Basic Chemistry and Water

1. Which statement describes an example of capillary action?

- A. Sodium chloride dissolves in water.
- B. An insect walks on the surface of a pond.
- C. Water enters the atmosphere from the surface of the ocean.
- D. A tree draws water through tubes of tissues to supply its leaves.

2. Which property of water allows fallen leaves to float on a lake, providing food for organisms living near its surface?

- A. cohesion
- B. adhesion
- C. capillary action
- D. high boiling point

3. A scientist studies two unicellular organisms under a microscope. Which of these statements is a testable hypothesis?

- A. Each organism has a diameter of less than 12 micrometers.
- B. All living organisms seek raw materials for growth and reproduction.
- C. If a nutrient is added to the slide, both organisms will move toward it.
- D. Both organisms have homeostatic mechanisms to regulate their activities.

4. Which statement correctly describes one way that the properties of water affect heat and temperature?

- A. Water retains more heat than other materials, making coastal ecosystems warmer year-round.
- B. Water absorbs heat when it freezes, helping to insulate lakes and ponds from cold temperatures.
- C. Water absorbs heat when it changes to vapor, helping to keep animals cool through perspiration.
- D. Water retains less heat than other materials, keeping aquatic ecosystems cooler than those on land.

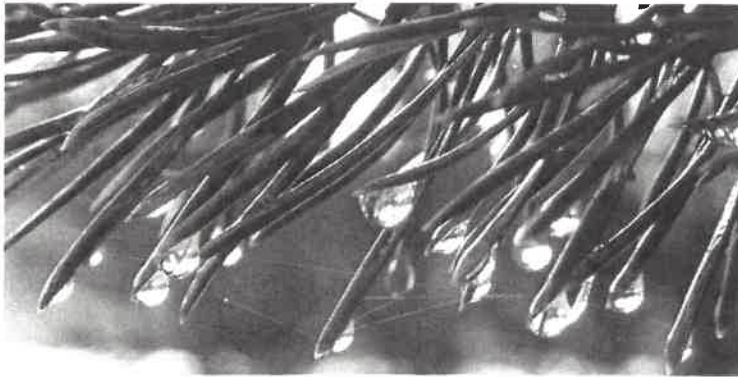
5. Which property of water molecules explains the other properties listed below?

- A. adhesion
- B. cohesion
- C. hydrogen bond
- D. polar covalent bond

6. One property of water that makes it unique is its density. Which example describes a result of this property?

- A Polar bears float on ice floes to hunt for food.
- B Trees transport water from their roots to their leaves.
- C Water strider insects walk on the surface of pond water.
- D Plants receive enough light to grow under the surface of a lake.

Use the picture below to answer question 3.



7. The picture shows water droplets hanging on the tips of pine needles. How do the physical properties of water result in the image shown?

- A Cohesion allows droplets to form, and adhesion keeps the droplets on the needles.
- B Adhesion allows droplets to form, and cohesion keeps the droplets on the needles.
- C Cohesion allows droplets to form, and capillarity keeps the droplets on the needles.
- D Adhesion allows droplets to form, and capillarity keeps the droplets on the needles.

8. Which of the following combinations of atoms is a molecule but not a compound?

- A. H_2
- B. H_2O
- C. CO_2
- D. C_2H_2

9. How is the density of water different from that of most substances?

- A. It is the same in the solid, liquid, and gas states.
- B. It is the same in the solid and liquid states.
- C. It is greater in the liquid state than in the solid state.
- D. It is greater in the solid state than in the liquid state.

10.

Which of these properties of water most directly contributes to capillary action?

- A. high freezing point
- B. high boiling point
- C. high specific heat
- D. strong adhesion

11.

Which property of water allows it to dissolve many different substances?

- A. adhesion
- B. cohesion
- C. high specific heat
- D. high boiling point

12.

Which of the following is an effect of water's high specific heat?

- A. the ability of plants to take up water
- B. the moderation of temperatures near bodies of water
- C. the formation of large water drops from tiny droplets
- D. the availability of substances for chemical reactions

OCR on Back

Open Constructive Response - OCR - Basic Chemistry & Water

■ A tree absorbs water from its roots and loses water that evaporates from leaves. Inside the tree, capillary action allows water to flow upwards through tissue called *xylem*, which is composed of tubes made from cell walls.

A Identify and explain how two (2) properties of water contribute to capillary action within the xylem.

B A tree can experience *cavitation*, which occurs when a bubble of air forms inside a xylem tube. Explain how cavitation affects a tree's ability to conduct water.
