

# States of Water

## The Water Molecule

- The water molecule is made up of two atoms of hydrogen and one atom of oxygen bonded together.
- Hydrogen ions are on the opposite side of the oxygen ion, meaning that water is a polar molecule.
  - **Polar Molecule:** Molecule with uneven electrical charge.
    - Side with hydrogen ions has more positive charge.
    - Side with no hydrogen ions has more negative charge.
- Water Properties
  - Water expands when it freezes.
  - High surface tension. (Because of water's polar nature, molecules stick together.)

### Study Tip

Knowing the three stages of water is important in learning Earth science, as it helps explain the water cycle and various weather properties.

## Three States of Matter

- Water is the only substance on Earth that is present in all three states of matter (solid, liquid or gas), and Earth is the only planet where water is present in all three states.
- The state of water depends on the temperature in specific locations. As a result, all phases may be in the same area.
- The three phases are:
  - Solid, commonly seen through ice or snow.
  - Liquid, commonly seen through water.
  - Gas, commonly seen through water vapor.

## Concept Check

- What are the properties of water?
- What does a “polar molecule” mean?
- What are the three states of water? Where can we see them?