

## I Can Statement Sheet for Atoms

1. I can define atom and explain how atoms are similar and different.

Answer: Atoms are the smallest particle that has all the properties of the element. .

Similar: All are made of empty space, have same structure (nucleus and electron cloud), very small

Different: Different properties for different elements (atoms), different sizes.

2. I can describe protons, electrons, and neutrons.

Answer: Protons – positive charge found in the nucleus. Determines which element is present.

Electrons – negative charge found outside the nucleus. Involved in chemical reactions. Neutrons – no charge found inside the nucleus.

3. I can describe of solids, liquids, and gases.

Phase	Shape	Volume	Movement	Spacing
Solids	Definite	Definite	Vibrates	Very Close
Liquids	No Definite	Definite	Slide past	Close
Gases	No Definite	No Definite	Fast and random	Far apart

4. I can explain the change in particle movement and energy during a phase change.

Phase Change	Energy Change	Particle Movement
Solid to Liquid	Increase	Increase
Liquid to Gas	Increase	Increase
Gas to Liquid	Decrease	Decrease
Liquid to Solid	Decrease	Decrease

5. I can give the definition of boiling point, melting point, freezing point, and maximum condensation point.

Boiling Point – Temperature at which a liquid becomes a gas.

Maximum Condensation Point – Highest temperature at which a gas becomes a liquid. Same as boiling point.

Melting Point – Temperature at which a solid becomes a liquid.

Freezing Point – Temperature at which a liquid becomes a solid. Same as Melting Point.

6. I can define and give examples of characteristic properties.

A characteristic property is a trait that does not depend upon the amount of material present. Ex. Density, solubility, boiling points, melting points.

7. I can define and give examples of chemical properties.

Chemical properties are traits that can only be seen when a chemical reaction occurs. Ex. Flammability or Reactivity

8. I can define and give examples of physical properties.

Physical properties are traits that can be seen without a chemical reaction. Ex. Phase changes, shape changes, solubility

9. I can define mass, volume, and weight.

Mass is the amount of matter in an object. It does not vary with the location. Weight is a measure of the force of gravity. It varies with the location. Volume is the amount of space an object occupies.

10. I can define and find the density of a substance.

Density is the amount of matter in a certain amount of space.  $\text{Density} = \text{mass} / \text{volume}$ . It tells you how tightly packed the molecules are in an object.

11. I can define and give two factors that determine the solubility of a substance.

Solubility is the ability of a substance to be dissolved. It depends upon the temperature of the solution (heat increases solubility) and the solvent used (water is the most common)

12. I can define and identify solute, solvent, and solution.

Solute – the substance being dissolved (sugar)      Solvent – the substance which is doing the dissolving (water)      Solution – the mixture that occurs when the solute and solvent are combined.