



# Structure of Matter Unit Planner/Study Guide

Name: \_\_\_\_\_ Packet Score: \_\_\_\_\_/72



## Step 1: Guaranteed and Viable Things to Know?

**Content Standard(s):** Students will understand the structure of matter.

**Unit Story:** All matter is made up of atoms that are far too small to see. Atoms are always in motion and the more energy they contain the faster they move. Atoms combine to form molecules. Matter is made up of atoms and molecules that have measurable mass, volume, and density. Density is a measure of the compactness of matter. It is the amount of matter (mass) per unit of volume. Density determines the way materials in a mixture are sorted. Sorting according to density results in the layering and structure of Earth's atmosphere, water, crust, and interior. Models are used to describe the structure of Earth.

**BOLDED Text = Tested on CFA's**

**Normal Text = Not tested on CFA's**

**Quiz 1:** Describe the structure of matter in terms of atoms and molecules.

- Recognize that atoms are too small to see.**
- Relate atoms to molecules (e.g., atoms combine to make molecules).**
- Diagram the arrangement of particles in the physical states of matter (i.e., solid, liquid, gas).**
- Describe the limitations of using models to represent atoms (e.g., distance between particles in atoms cannot be represented to scale in models, the motion of electrons cannot be described in most models).
- Investigate and report how our knowledge of the structure of matter has been developed over time.**

**Quiz 3:** Investigate the motion of particles.

- Identify evidence that particles are in constant motion.**
- Compare the motion of particles at various temperatures by measuring changes in the volume of gases, liquids, or solids.**
- Design and conduct an experiment investigating the diffusion of particles.**
- Formulate and test a hypothesis on the relationship between temperature and motion.
- Describe the impact of expansion and contraction of solid materials on the design of buildings, highways, and other structures.**

**Quiz 2:** Accurately measure the characteristics of matter in different states.

- Use appropriate instruments to determine mass and volume of solids and liquids and record data.**
- Use observations to predict the relative density of various solids and liquids.**
- Calculate the density of various solids and liquids.**
- Describe the relationship between mass and volume as it relates to density.**
- Design a procedure to measure mass and volume of gases.

### Science PEAK Schedule:

**Monday** Science Priority Day (1's Only)

**Tuesday** Course Content Support (Any Ticket)

**Thursday** Course Content Support (Any Ticket)

**Friday** Team Naomi Study Hall (Any Ticket)

## Step 2: Evidence of Learning

Common Formative Assessments	1 <sup>st</sup> Time (In Class)	2 <sup>nd</sup> Time (In PEAK)	3 <sup>rd</sup> Time (In PEAK)
CFA Quiz 1			
CFA Quiz 2			
CFA Quiz 3			
Vocabulary Pre Test Score %	Vocabulary Post Test Score %	Improvement %	

Step 3: Tracking Assignments (Fill in the missing boxes as information is given).

## Assignments for Points (Blue)

ASSIGNMENT NAMES	ACTUAL DATE ASSIGNED	ACTUAL DUE DATE	POINTS POSSIBLE
1. Unit Tracker			10
2. Unit Vocabulary			44
3. Unit Essential Questions			40
4. Scientific Method Puzzle Homework			28
5. Drops on a Penny Lab			15
6. Matter Coloring			28
7. States of Matter Reading and Questions			38
8. Atomic Theory Flow Map Homework			48
9. Penny Boat Lab			25
10. Metric Mania Homework			21
11. Measurement of Matter Worksheet			40
12. Mass and Weight Lab			25
13. Volume and Density Lab			31
14. Density Block Lab			30
15. Particle Motion Argumentative Writing Homework			40
16. Density of Cylinders Lab			30