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DepED
DEPARTMENT OF EDUCATION

Learning Activity Sheet for Science

Quarter 1

Lesson

1

Learning Activity Sheet for Science 7
Quarter 1: Lesson 1 (Week 1)
S.Y. 2024-2025

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LEARNING ACTIVITY SHEET 1

Learning Area:	Science	**Quarter:**	1
Lesson No.:	1	**Date:**	
Lesson Title/ Topic:	**Introduction to Scientific Models**		
Name:		**Grade & Section:**	

I. Activity No. 1: Exploring Scientific Models: Journeying Through Atomic Structure (Take Home Activity)

II. Objective(s):

1. Gain insight into the applications of scientific models through the study of atomic models, providing a foundation for understanding complex scientific phenomena.
2. Explore the practical implications and real-world significance of scientific modeling by examining atomic models as representative examples.

III. Materials Needed:

1. Resource materials (books, internet sources)
2. Worksheet

IV. Instructions:

Task A. Atomic Model Quest: Uncovering the Building Blocks of Matter!

1. In this word search puzzle, you will find the names of five scientific models that explain the structure of the atom.
2. The words may appear horizontally, vertically, or diagonally, in any direction.
3. Scan the grid carefully to locate and circle each model name.
4. The identified model names in the word search puzzle will be used to fill out the table in Task B of the worksheet.

A	A	M	F	O	J	T	T	I	U	I	F	E	I
E	F	Y	F	N	K	U	T	E	E	W	R	K	Q
Q	H	K	C	O	O	K	Y	J	S	C	J	O	N
G	A	P	I	B	S	E	L	U	B	A	T	I	X
A	E	R	N	R	W	Y	M	A	J	V	D	O	J
O	O	I	A	N	K	R	R	P	A	D	R	G	G
E	H	W	K	E	S	C	Y	P	U	P	L	R	U
Y	M	E	B	N	A	Z	A	P	B	Q	J	Z	N
Y	M	R	N	W	V	Z	M	P	M	G	D	J	C
A	J	E	H	C	J	U	Q	U	S	J	R	T	P
X	D	H	W	S	L	W	E	V	P	R	O	D	T
M	Z	P	Y	P	M	N	K	F	M	A	F	D	F
E	N	S	A	D	H	E	G	V	C	T	R	B	X
C	G	D	J	H	V	J	E	P	Q	K	E	G	X

Task B. Atomic Model Spotlight: Illuminating the Secrets of the Atom

1. Examine the word search puzzle you completed to identify the names of five scientific models that explain the structure of the atom.
2. Fill in the first column of the table with the names of these atomic models. Each model name should correspond to one row in the table.
3. For each model, research and complete the remaining columns of the table:
4. Proponent and Year: Write down the name of the scientist or scientists who proposed the model, along with the year it was proposed.
5. Main Features: Summarize the key characteristics or features of the atomic model.
6. Contribution to the Understanding of Atomic Structure: Describe how the model contributed to our understanding of the structure of the atom.
7. Be thorough and accurate in your research, and ensure that each column of the table is completed with relevant information.
8. Once you have filled in all the details for each atomic model, review your work to ensure clarity and correctness.

Model (Answer taken from the word search)	**Proponent/ Year introduced**	**Main features**	**Contribution to understanding of atomic structure**

V. Extended Practice

- Compare and contrast two different atomic models, discussing their similarities, differences, and significance in understanding atomic structure. Present your comparison in a short-written essay or diagram.

LEARNING ACTIVITY SHEET 2

Learning Area:	Science	**Quarter:**	1
Lesson No.:	2	**Date:**	
Lesson Title/ Topic:	**Scientific Models in Focus: Atomic Models Through Time**		
Name:		**Grade & Section:**	

I. Activity No. 2: Crossword Puzzle: Atomic Models in Focus (15 minutes)

II. Objective(s):

1. Demonstrate understanding of scientific models and their importance in understanding atomic structure.
2. Summarize key concepts and historical evolution of atomic models.

III. Materials Needed:

1. Pen/Pencil
2. Worksheet

IV. Instructions:

1. The crossword puzzle contains terms related to atoms and atomic models that they have learned about in previous lessons. Fill in the puzzle with the correct terms based on the provided descriptions.
2. Pay attention to the number of letters in each word and the intersecting letters of the adjacent words to determine the correct answers.

Across:

4. Atomic model where electrons don't move around the nucleus in orbits. Electrons exist in specific energy levels as a cloud.

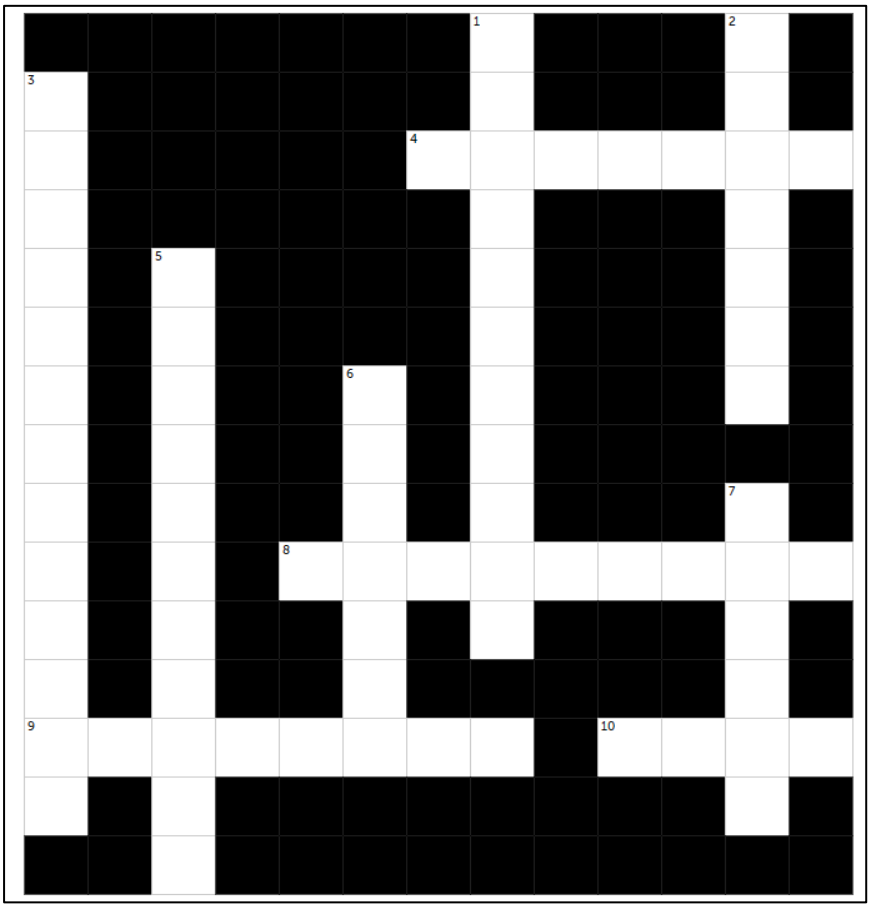
8. Electrons reside in orbits. They move between each shell when gaining or losing energy.

9. Negatively charged particles

10. Building block of matter that cannot be broken apart using any chemical means

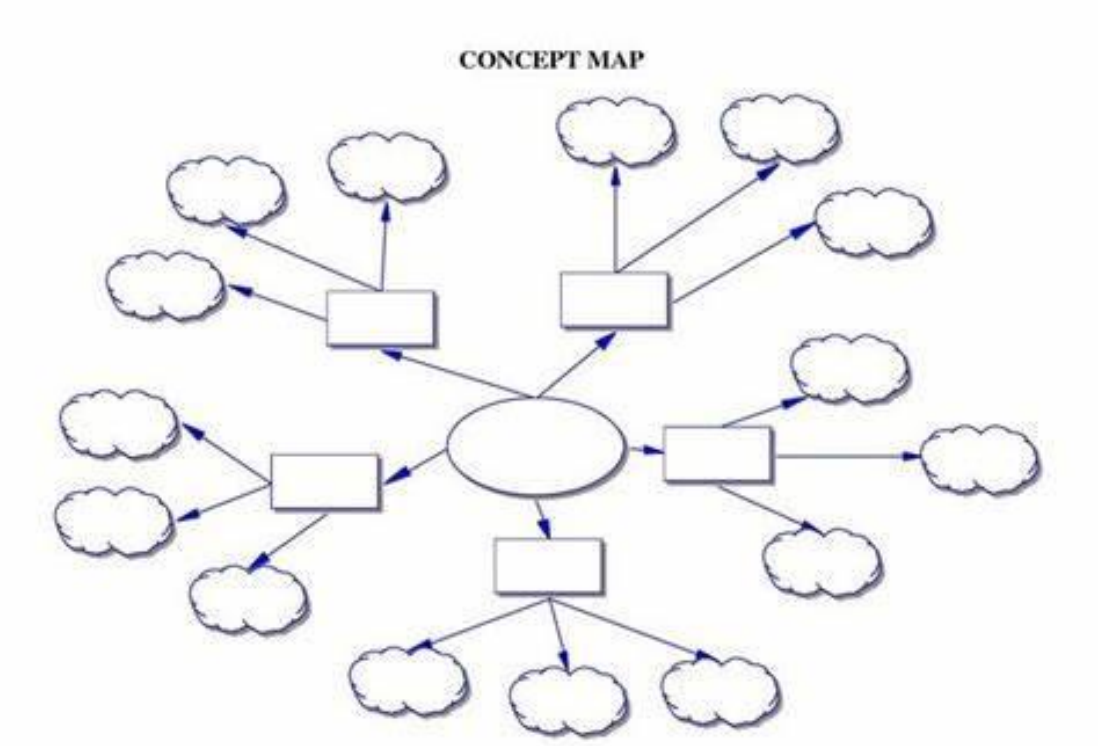
Down:

1. An atom is made out of a sphere of positive charges with negatively charged electron embedded in it.
2. Subatomic particle with a neutral charge
3. A tangible model.
4. Matter is made of small indivisible atoms.
5. Most of the mass is concentrated in the center of atom. This tiny, dense, positively charged core called a nucleus.
6. Positively charged particles



V. Synthesis

- Create a cloud concept map summarizing atomic models, using key terms and relationships learned in previous lessons. Sample map is found below.



Your Concept Map here:

LEARNING ACTIVITY SHEET 3

Learning Area:	Science	**Quarter:**	1
Lesson No.:	3	**Date:**	
Lesson Title/ Topic:	**Particle Model of Matter**		
Name:		**Grade & Section:**	

I. Activity No 3: The Sneaky Particle Party! (30-40 minutes)

II. Objective(s):

a. Students will be able to describe the basic principles of the particle model of matter.
b. Students will be able to explain how the movement and arrangement of particles affect the state of matter (solid, liquid, gas).
c. Students will be able to model behavior of particles in different states of matter

III. Materials Needed:

- Worksheet

IV. Instructions:

Part 1

1. You will be assigned in groups of 4-5 students. Get ready to move like tiny water molecules! Today, we'll pretend to be water particles and act out how they move in different states: ice, liquid water, and steam!

Here's what you'll do:

Group Up! Each group will represent a bunch of water molecules.

- Ice Crystals: Imagine you're a tiny water molecule stuck in ice! Stand close together with your group, arms linked or holding hands. Try to form a stiff structure, like a block of ice. Water molecules in ice are packed tightly and can't move around much.

- Melting Time! Uh oh, the ice is getting warmer! What do you think happens to the water molecules? Slowly wiggle and vibrate in place with your group, but try to stay connected to your neighbors a little bit. Water molecules start to move more as the ice melts.

- Liquid Water Party! The ice has melted completely, and now you are liquid water! Break free from your stiff formation and move around the designated area with your group. Bump gently into your classmates from other groups, just like water molecules bumping into each other.

- Boiling Point! The water is getting super-hot! It's about to boil! Time to move like crazy! With your group, take a big jump apart and move around freely in a larger space. Some of you can even leave the designated area entirely! This represents water molecules escaping as steam when water boils.

- Cooling Down: Phew, things are calming down. The water is starting to cool. How do you think the water molecules move now? Gradually slow down your movements and come closer to your group again. Don't clump together too much though, there should still be some space between you. Water molecules slow down and get closer together as the water cools.

Rubric for Rating Group Performance

Criteria	Excellent (4 points)	Good (3 points)	Needs Improvement (2 points)	Unsure (1 point)
Ice Crystals	Students form a rigid structure with minimal movement, representing tightly packed water molecules.	Students form a structure with some movement, but it's not entirely rigid.	Students struggle to form a structure or movement is excessive.	Students don't participate or concept is unclear.
Melting	Students slowly increase movement while maintaining some connection, representing increased vibration of molecules.	Students increase movement but connection is inconsistent or excessive.	Movement is too rapid or students don't maintain any connection.	Students don't participate or concept is unclear.
Liquid Water	Students break formation and move freely within the designated area, bumping gently.	Students move freely but bumping is excessive or lacking.	Movement is restricted or students clump together excessively.	Students don't participate or concept is unclear.
Boiling	Students take a big jump apart with some leaving the designated area, representing rapid movement and escape of steam.	Students move apart but remain mostly within the area, or some leave but others don't.	Movement is insufficient or students don't leave the designated area.	Students don't participate or concept is unclear.
Cooling Down	Students gradually slow down and come closer together but maintain some space, representing slower movement of molecules.	Students slow down but movement is inconsistent or spacing is not clear.	Movement is too rapid or students clump together excessively.	Students don't participate or concept is unclear.
Engagement	All students actively participate and demonstrate understanding throughout the activity.	Most students participate and show some understanding.	Some students are not engaged or understanding is limited.	Students are not engaged or disruptive.

Part 2. You are provided with a table with three columns. Answer State of Matter and Particle Movement using words. You may describe particle arrangement by drawing.

State of Matter	Particle Movement	Particle Arrangement

V. Synthesis

- Answer the question below using your knowledge on principles of particle model of matter. You may use a separate sheet when necessary.

  Question: Could you explain how the particle model explains why a balloon inflates when filled with air?

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