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DepED
DEPARTMENT OF EDUCATION

Learning Activity Sheet for Science

Quarter 2
Lesson
6

Learning Activity Sheet for Science Grade 8
Quarter 2: Lesson 6 of 6 (Week 8)
SY 2025-2026

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LEARNING ACTIVITY SHEET

Learning Area:	Science	**Quarter:**	2nd Quarter
Lesson No.:	Lesson 6 Subtopic 3	**Date:**	
Lesson Title/ Topic:	The Atom and the Periodic Table/ Electron Dot Diagram		
Name:		**Grade & Section:**	

I. **Activity No.:** Activity #1: Fill in the Dots (30 mins)

II. **Objective(s):** At the end of the activity, the learners are expected to express the electron dot diagrams of assigned elements through culinary creativity.

III. **Materials Needed:** bond paper, pencil, cupcakes (with no toppings), chocolate stick (like choco-choco or any brand), candy sprinkles, very small mallows (optional)

IV. **Instructions:**

- The class will be grouped into seven groups.
- Each group will have an assigned period.
  - Group 1 – Period 1
  - Group 2 – Period 2
  - Group 3 – Period 3
  - Group 4 – Period 4
  - Group 5 – Period 5
  - Group 6 – Period 6
  - Group 7 – Period 7
- Each group will draw the electron dot diagram of elements in the period that belongs to the representative elements on a separate sheet.
- Once done, this will act as a guide in decorating the cupcakes.
- Use the choco sticks (may use different flavors/colors) in writing the symbols of the elements on the cupcakes. Fluffy Mamon or any bread with the same form could be an alternative for cupcakes.
- Use the candy sprinkles or small mallows to represent the valence electrons around the atom.
- Once done, explain and present it to the class.

Rubrics

Category	Description	Points
Accuracy of Electron Dot Diagrams	All drawings in the cupcake are correctly written	5
Presentation	All cupcakes are visually captivating. (especially clean, it is still appealing to eat)	5
Explanation	The group was able to explain their answers accurately and with confidence.	10

LEARNING ACTIVITY SHEET

Learning Area:	Science	**Quarter:**	2nd Quarter
Lesson No.:	Lesson 6 Subtopic 4	**Date:**	
Lesson Title/ Topic:	The Atom and the Periodic Table/ Groups and Similar Properties		
Name:		**Grade & Section:**	

I. **Activity No.:** Activity #2: Row-Blocks (30 mins)

II. **Objective(s):** At the end of the activity, the learners are expected to:
   a. identify the block of a given element, and
   b. explain the arrangement of elements according to blocks.

III. **Materials Needed:** ruler, old folders, plastic cover, marker, scissors, pencil, tape, glue

IV. **Instructions:**

- The class will be divided into groups with 4 to 5 members.
- Using old folders, each group will prepare tiles with 19 by 19 millimeters square and 4 mm thickness.
- There will be two types of tiles, element tiles and block tiles.
  - Element tiles are comprised of at least four elements in each element group in the periodic table (except transition elements). They are randomly picked by the students.
    - S block elements – 8 tiles
    - P block elements - 16 tiles
    - D block elements – 8 tiles
    - F block elements – 8 tiles
  - There will be 48 element tiles.
  - Block tiles are for the s-p-d-f blocks.
  - There will be 10 block tiles:
    - S – 2 tiles
    - P – 4 tiles
    - D – 2 tiles
    - F – 2 tiles
- Once the tiles are prepared the group may commence the game.
- All element tiles must be placed on a table face-down.
- The block tiles must also be placed on the table face-down in a separate area or corner.
- The first three/four players will flip an element tile every turn.
- The fourth/fifth player will act as an arbiter. They will flip one block tile and
- hold a periodic table.
- Once the arbiter flips a block tile, the battle begins. The first player to grab and tell at least one element (revealed) belonging to the block tile gains a point.
- The flipping of element tiles continues as the players try to collect the elements.

- A player may snatch the collected elements of another player if they have elements of the same group. They need to tell the "group" after getting a tile to snatch a group.
- The first player to complete a block (either s,p,d,f) wins.
- If no one will be able to form a block, the player with the highest points within the given time frame will win.
  - S element – 1 point
  - P element – 2 points
  - D element – 2 points
  - F element – 2 points
- The arbiter will be the overseer of the game.
- The game may continue to championships depending on the teacher's discretion.

V. Synthesis:

To process what you have learned answer the following guide questions in the space provided.

1. What does each block in the periodic table represent?

   _____
   _____
   _____
   _____
   _____

2. What do elements in the s-block have in common?

   _____
   _____
   _____
   _____
   _____

3. Why does the p-block span six groups of elements?

   _____
   _____
   _____
   _____
   _____

4. Why does the d-block span ten groups of elements?

   _____
   _____
   _____
   _____
   _____

5. Why is the f-block comprised of 14 elements in a series?

   _____
   _____
   _____
   _____
   _____

LEARNING ACTIVITY SHEET

Learning Area:	Science	**Quarter:**	2nd Quarter
Lesson No.:	Lesson 6 Subtopic 5	**Date:**	
Lesson Title/ Topic:	The Atom and the Periodic Table/ Groups and Similar Properties		
Name:		**Grade & Section:**	

I. **Activity No.:** Activity #3: Bioaccuulation of Metals

II. **Objective(s):** At the end of the activity, the students can derive the meaning of bioaccumulation of metals based on the illustration.

III. **Materials Needed:** pen and worksheet

IV. **Instructions:** Using the illustration below, write your ideas on the space provided. Present your work in the class.

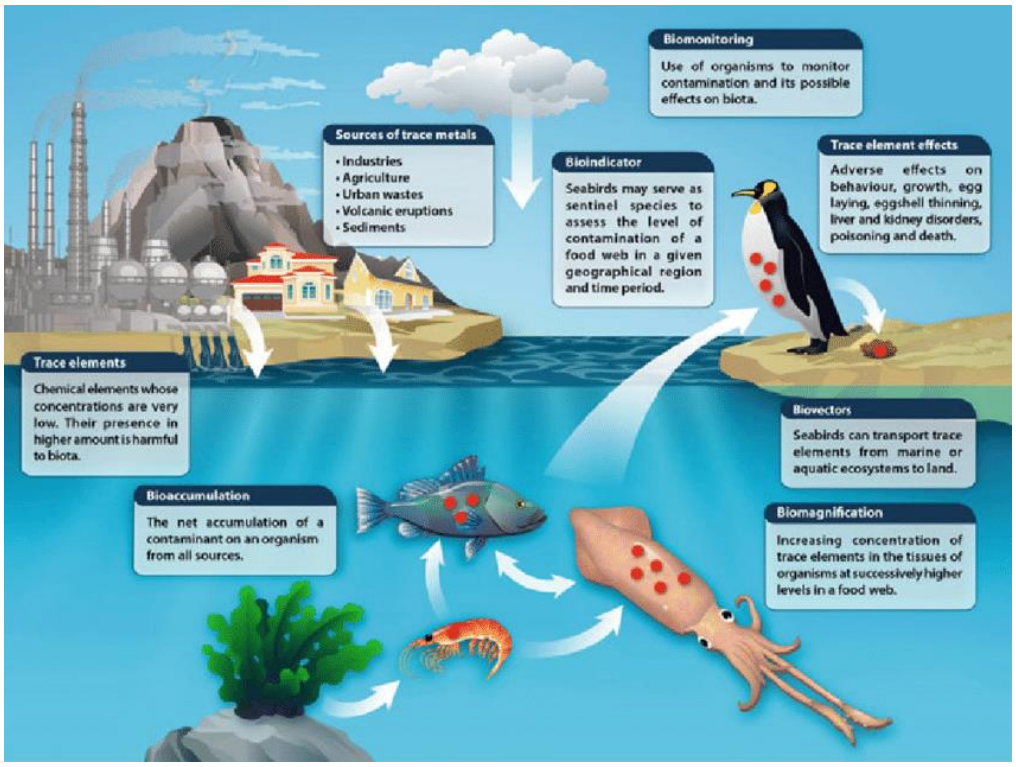

Image Source: Espejo, Winfred & Celis Hidalgo, Jose & González-Acuña, Daniel & Banegas, Andres & Barra, Ricardo & Chiang, Gustavo. (2017). A Global Overview of Exposure Levels and Biological Effects of Trace Elements in Penguins. 10.1007/398_2017_5.

LEARNING ACTIVITY SHEET

Learning Area:	Science	**Quarter:**	2nd Quarter
Lesson No.:	Lesson 6 Subtopic 5	**Date:**	
Lesson Title/ Topic:	The Atom and the Periodic Table/ Groups and Similar Properties		
Name:		**Grade & Section:**	

I. Activity No.: Activity #4: Trendy Groups (40 mins)

II. Objective(s): At the end of the activity, the learners are expected to explain how valence electrons are involved in the trend of properties observed in elements of the same group.

III. Materials Needed:

- test tubes
- test tube holder
- testtube racks
- solutions of: $Ca(NO_3)_2$, NaCl, K_2SO_4, $CaCl_2$, $BaCl_2$**,** $Fe(NO_3)_2$, $Fe(NO_3)_3$, $Cu(NO_3)_2$, NaF, NaCl, NaBr, NaI

IV. Instructions: Follow the safety precaution guidelines of the school laboratory for safety purposes. Always wear the complete laboratory safety attire (laboratory gown, gloves, goggles) whenever necessary.

- **Reaction of Group 1A (alkali metal)**
  - Pour 2mL of NaCl solution in tube 1 and 2mL of K2SO4 in tube 2.
  - Make sure to label each tube.
  - Add 3 mL of NH4OH in each tube. Swirl for even distribution.
  - Document the test and take note of your observation.
- **Reaction of Group 2A (alkaline earth metal)**
  - Pour 2mL of CaCl2 solution in tube 1 and 2mL of BaCl2 in tube 2.
  - Make sure to label each tube.
  - Add 3 mL of NH4OH in each tube. Swirl for even distribution.
  - Document the test and take note of your observation.
- **Reaction of Group Transition Metals**
  - Pour 2mL of $Fe(NO_3)_2$, $Fe(NO_3)_3$, $Cu(NO_3)_2$ solutions in separate test
  - tubes.
  - Make sure to label each tube.
  - Add 3 mL of NaOH in each tube. Swirl for even distribution.
  - Document the test and take note of your observation.
- **Reaction of Halogens**
  - Pour 2mL of NaF, NaCl, NaI, and NaBr solutions into separate test tubes.
  - Make sure to label each tube.
  - Add $Ca(NO_3)_2$ in each tube. Swirl for even distribution.
  - Document the test and take note of your observation.

Experiment Sheet

Group/Family	Target Element	Reagent	Observation of the Test
1A	Na	NaCl	
	K	K_2SO_4	
2A	Ca	$CaCl_2$	
	Ba	$BaCl_2$	
Transition Metals	Fe2+	$Fe(NO_3)_2$	
	Fe3+	$Fe(NO_3)_3$	
	Cu2+	$Cu(NO_3)_2$	
Halogens	F	NaF	
	Cl	NaCl	
	Br	NaBr	
	I	NaI	

- **Additional Notes:**

V. Synthesis:

Answer the following questions based on your observations.

1. Are there any similar observations with alkali and alkaline earth metals? What does it so?

   _____
   _____
   _____

2. How would you describe the reactivity of Halogens to $Ca(NO_3)_2$?

   _____
   _____
   _____

3. Does the number of valence electrons contribute to the reactivity of the elements? Explain.

   _____
   _____
   _____

VI. Extend:

Divide the class into groups. Create a scientific booklet that will show the similarities among the representative elements of the same group (Group 1A to 8A). The following information must be seen:

- Family
- Element symbols
- Element sample photo
- Similar physical properties
- Similar chemical reactivities
- Contribution of valence electrons
- Exemptions to the trend within the group
- Proper Handling
- Helpful Uses in Different Fields
- List of references

Rubrics

Category	Description	Points
Content	All information presented was accurate with at least three reliable sources.	10
Presentation	The booklet is easy to use/follow, and sustainable, and students' creativity was observed	15
Teamwork	There was no report of noncollaborative groupmates. All members completed their assigned tasks.	10
Timeliness	The activity was submitted on time	5