

3rd Grade Lesson Plan

Matter: Build a Word

Standards:

- 1.h. *Students know* all matter is made of small particles called atoms, too small to see with the naked eye.
- i. *Students know* science experiments show that there are more than 100 different types of atoms, which are presented on the periodic table of elements.

Suggested Time Allotment: 45 minutes

Pressed for Time: 30 minutes

- Introduce matter, elements, and Periodic Table
- List words recognized by students
- Start “Build a Word” worksheet and allow students to finish it at home

Anticipatory set (engage):

What is pizza made of? Can you break it down into anything? (Dough, cheese, sauce, toppings) What are those made of? (Flour is made of eggs, water, milk) Can we go even smaller? What’s the smallest part of pizza? What’s that smallest part made of? All things in the universe are made of smaller parts.

Objective:

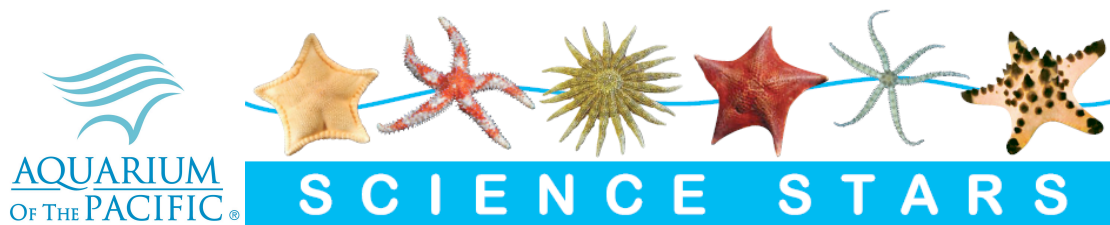
Increase students’ familiarity with the Periodic Table, and names of common elements.

Background:

Matter is anything that has mass and takes up space, and can be found in three different states (gas, liquid, and solid). Since matter can neither be created nor destroyed, they can only change forms. For example, water can turn to ice, or steam. In both cases matter isn’t lost or gained, it simply changes form.

All matter on the planet, whether solid, liquid, or gas, is made of atoms. Atoms are the smallest indivisible piece of matter. All types of atoms are listed and organized by their physical properties on the Periodic Table of Elements. While there are only about 100 elements (or types of atoms) these atoms can be combined to form molecules. Some commonly known molecules are salt (NaCl - one sodium atom (Na) and one chloride (Cl) atom), sand and glass (SiO₂), and water H₂O.

The Periodic Table of Elements lists familiar materials such as gold, silver, lead, oxygen, and neon. Therefore, these materials are elements. Materials like salt, water, sugar, and steel are not on the table, which means they are formed by putting atoms together to form molecules.



For each element on the Period Table there is a symbol, an atomic number, atomic mass, and more. While many names are long strange sounding names, most symbols are 1 or 2 letters (there are some elements that have been artificially created on a lab that have 3 letters). The first letter is always a capital letter, and the following are always lower case.

Vocabulary:

- Matter
- Atom
- Element
- Periodic Table of Elements

Modeling:

1. Introduce the term atom. If matter were cut into its smallest piece, it would be an atom. There are only about 100 types of atoms called elements.
2. Show students the classroom Periodic Table of Elements. Explain that all the known atoms in the world are on this chart. They are grouped in specific spots on the chart based on their physical properties. What makes up all matter? This cabinet full of ingredients. Similar to eggs, flour, milk, and water we have elements that make up all matter.
3. Write gold's number, name, and symbol on the board as an example. (Au #79)
4. Point out that symbols always begin with a capital letter, followed by lower case.
5. List the elements that students recognize on the poster.
6. Introduce "Build a Word" worksheets.
7. Model how to find the symbol of each atom and write the letters of the symbol from left to right on the lines below.

Guided Practice:

1. Pass out a periodic table of elements to each pair of students.
2. In pairs or individually, students will complete Build a Word worksheet. (p. 20 in 3rd grade journal)

Check for understanding:

What is an atom? Why isn't pizza on the periodic table? Can there be a pizza atom?
Can there be a gold atom? What is the symbol for gold?


Independent Practice:

*Have students complete the Matter Worksheet Crossword Puzzle (p. 22 in 3rd grade journal)
To review concepts.*




BUILD A WORD


Directions: Find the symbol of each element on the Periodic Table of Elements and write it in the box to create a word.

1. + + = Crab 

Carbon Radium Boron
2. + + + = _____

Flourine Iodine Sulfur Hydrogen
Fluorine Sulphur
3. + = _____ 

Selenium Aluminum
Aluminium
4. + = _____

Chlorine Americium
5. + + = _____ 

Barium Sulfur Sulfur
Sulphur Sulphur
6. + + + = _____

Tungsten Aluminum Ruthenium Sulfur
Aluminium Aluminium Sulphur
7. + + + + = _____

Selenium Aluminum Iodine Oxygen Nitrogen
Aluminium
8. + + + + = _____

Phosphorus Uranium Flourine Flourine Indium
Fluorine Fluorine




BUILD A WORD

Directions: Find the symbol of each element on the Periodic Table of Elements and write it in the box to create a word.

1.

 +

 +

 = Crab 

Carbon Radium Boron

2.

 +

 +


 +

 = Fish

Flourine
Fluorine Iodine Sulfur
Sulphur Hydrogen

3.

 +

 = Seal 

Selenium Aluminum
Aluminium

4.

 +


 = Clam

Chlorine Americium

5.

 +

 +

 = Bass 

Barium Sulfur
Sulphur Sulfur
Sulphur

6.

 +

 +

 +

 = Walrus

Tungsten Aluminum
Aluminium Ruthenium Sulfur
Sulphur

7.

 +

 +

 +

 +

 = Sea Lion

Selenium Aluminum
Aluminium Iodine Oxygen Nitrogen

8.

 +

 +

 +

 +

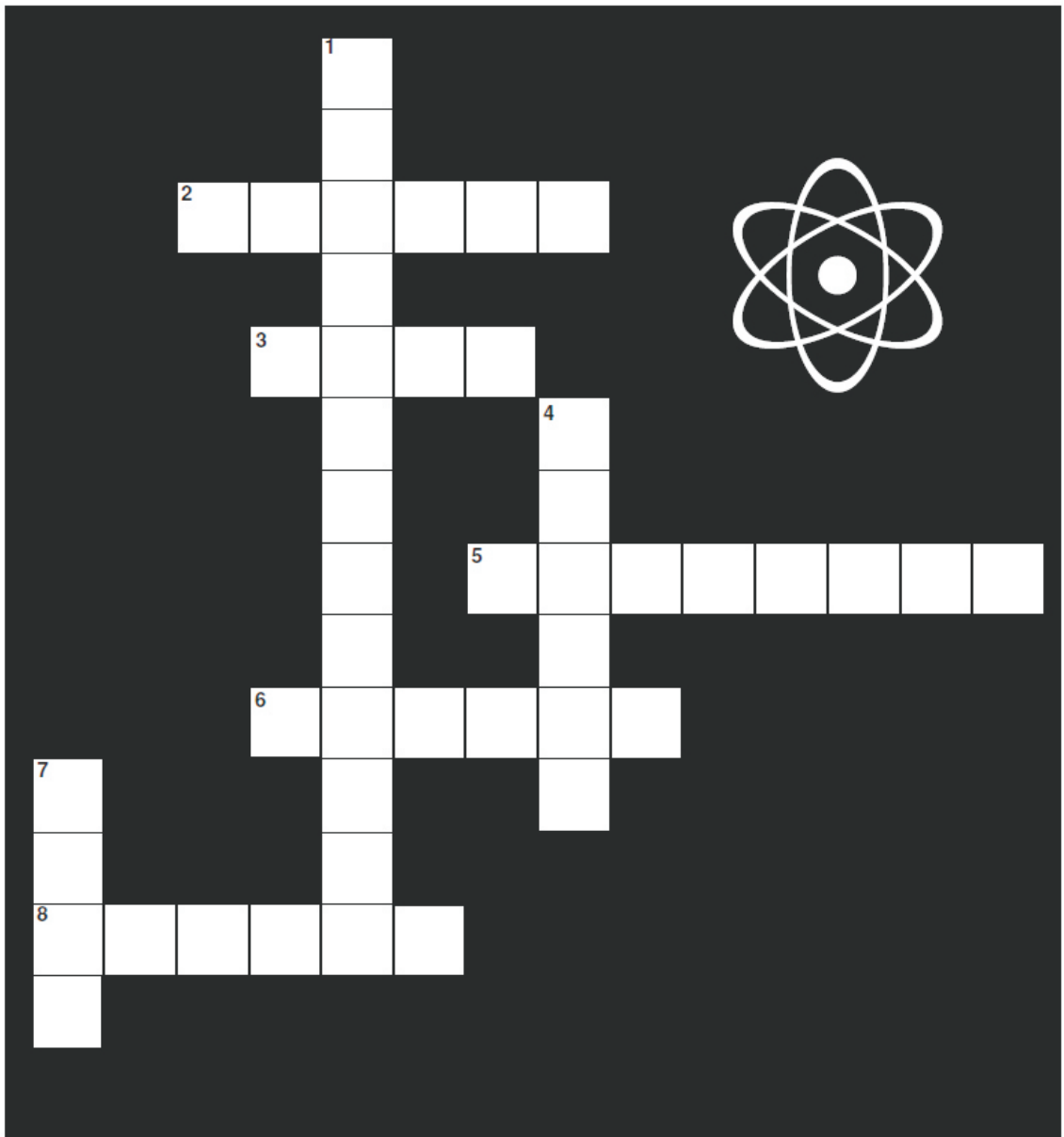
 = Puffin

Phosphorus Uranium Flourine
Fluorine Flourine
Fluorine Indium

MATTER WORKSHEET CROSSWORD PUZZLE

Directions: Use the words below to answer the questions and fill in the crossword puzzle.

ATOM
CARBON
ELEMENTS
GOLD
MATTER
OXYGEN
PERIODIC
TABLE
SILVER



ACROSS:

2. Number 6 on the Periodic Table (C)
3. A valuable metal (first place in the Olympics)
5. Types of atoms
6. Anything that takes up space
8. The atoms we need to breathe (number 8)

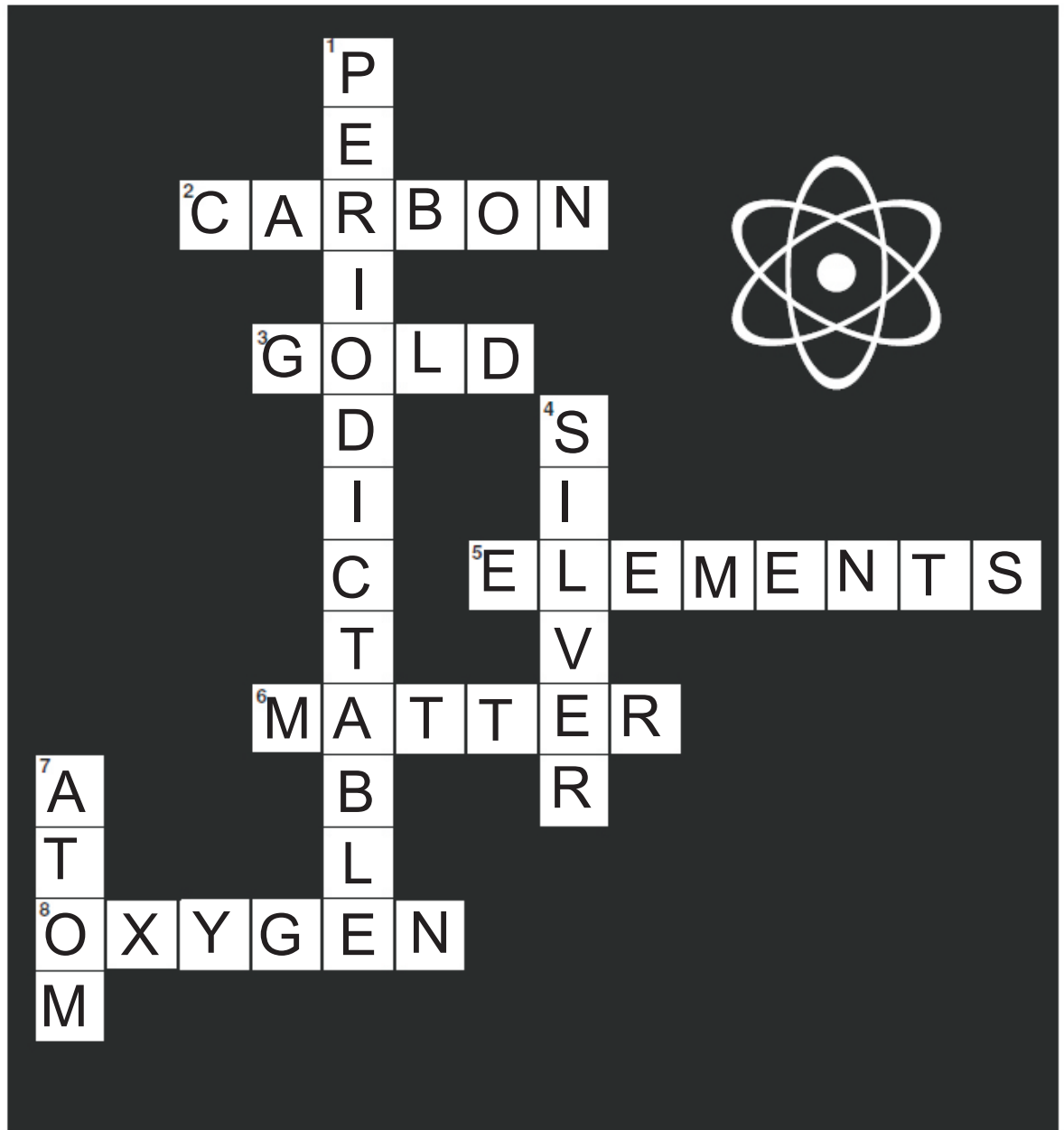
DOWN:

1. A chart where all the types of atoms are listed
4. A valuable metal (second place in the Olympics)
7. The smallest piece of matter

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- ELEMENTS
- GOLD
- MATTER
- OXYGEN
- PERIODIC TABLE
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DOWN:

1. A chart where all the types of atoms are listed
4. A valuable metal (second place in the Olympics)
7. The smallest piece of matter