

5th Grade Curriculum

**By Robert Schinske, Max
vonBlankenburg, Ananya
Somasekar**

Schedule for Chemistry Unit

- Day 1: Learn basics of atoms, protons, neutrons, and electrons.
- Day 2: Size of atom project.
- Day 3-5: Introduce periodic table and introduce periodic table project.
- Day 6: Bingo.
- Day 7: Structure/ groups of periodic table and finish periodic table.
- Day 8-9: Edible model project.
- Day 10: Explaining molecules.
- Day 11-12: Chemical reactions/ elephant toothpaste.
- Day 13: Final Assessment.

Curriculum Outline: Atoms, Protons, Neutrons, Electrons

- Explain the concept of atoms (break it to them slowly and try not to blow their minds). Explain what they are made of. Include protons, neutrons, and electrons.
- Use beads to describe how an atom works and how the different parts of the atom work together.
- Have them define proton, neutron, and electron.

Project: Size of atom

- Take a Basketball and marbles out to the field.
- Place basketball at one end of the field.
- Run to other end and hold marbles up.
- The basketball is the nucleus and the marbles are electrons.
- You have just made a scale model of an atom.

Periodic Table Introduction

- Explain how elements are arranged according to their atomic #, explain atomic #.
- Periodic table project: put kids into groups, give them a big poster paper and let them draw a periodic table to their best ability. Have them number each square from 1 to wherever, left to right, top to bottom.
- Give them a list of elements along with their atomic numbers, have them label on their periodic table in their corresponding squares.
- Hydrogen-1, Helium-2, Carbon-6, Nitrogen-7, Oxygen-8, Neon-10, Sodium-11, Chlorine-17, Potassium-19, Iron-26, Copper-29, Gold-79, Mercury-80.

Project: How to Read a Periodic Table

- Refer to doc.
- Activity: Periodic Table Bingo (see handout).

Structure/Groups of Periodic Table

- list and briefly define groups: Hydrogen, alkali metals, alkaline metals, transition metals, metalloids, nonmetals, noble gases.
- Use the big periodic poster table.
- Color code each of the sections of the periodic table on the paper first, then have the kids show you and if it is correct they recolor on the big table.

Project: Edible Models

- Assign each kid an element. Then have them create something to eat for the class and bring a microwave to cook it in.
- Like a pizza or candy model. Different toppings could be used to demonstrate protons, neutrons, and electrons with correct amount of each.
- Then, assign two small paragraphs about their element.

Elemental Bonds Create Molecules

- Explain how atoms combine to make molecules. Don't have to go into ions or magnetism.
- Use a Powerpoint slide show and have them fill in blanks in a worksheet based on what the presentation consists of.

Chemical Reactions

- Show them reaction between vinegar and baking soda.
- Have them match up chemical reactants with their products on a worksheet.
- Elephant toothpaste.

Project: Elephant Toothpaste

(see handout)



Final Assessment

(Refer to handout)

Unit Assessment

1. What is an atom?
 - a. your friend's name
 - b. a small bug
 - c. a thing that makes up all other things in the universe
 - d. the biggest thing in the universe
2. What is a nucleus?
 - a. the core of an atom, a mix of protons and neutrons
 - b. particles that surround an atom
 - c. atoms bonded together
 - d. a nuclear power plant
3. What is the charge of an electron?
 - a. positive
 - b. both positive and negative
 - c. no charge
 - d. negative
4. What is the charge of a proton?
 - a. positive
 - b. both positive and negative
 - c. no charge
 - d. negative
5. What is the charge of a neutron?
 - a. positive
 - b. both positive and negative
 - c. no charge
 - d. negative
6. What element has atomic number 1?
 - a. Helium
 - b. Nitrogen
 - c. Hydrogen
 - d. Carbon

7. What element has atomic number 5?
 - a. Helium
 - b. Nitrogen
 - c. Hydrogen
 - d. Carbon
8. How many protons does Helium have?
 - a. 1
 - b. 2
 - c. 4
 - d. 7
9. What is matter?
 - a. Matter is everything that exists.
 - b. Matter is something of importance.
 - c. Matter is an idea.
 - d. Matter is something you cook with.
10. How many groups are in the periodic table?
 - a. 18
 - b. 7
 - c. 15
 - d. 9
11. How many periods are there?
 - a. 8
 - b. 7
 - c. 10
 - d. 12
12. Using a periodic table, what group is Calcium (Ca) in?
 - a. 5
 - b. 12
 - c. 13
 - d. 2
13. Which of the elements is a transition metal (Group 3-12)?

Using a periodic table, what group is Calcium (Ca) in?

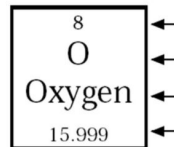
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- b. 12
- c. 13
- d. 2

13. Which of the elements is a transition metal (Group 3-12)?

- a. Silver
- b. Iron
- c. Aluminum
- d. All of the above

14. Label the different parts:



Word Bank:
Element Name
Atomic Mass
Charge
Atomic Number
Element Symbol

