**Elements and the Periodic Table**

**8th Grade Science**

**Textbook Chapters:**

3. Elements and the Periodic Table

**Sections:**

1. Introduction to Atoms
2. Organizing the Elements
3. Metals
4. Nonmetals and Metalloids

**State Standards:**

**Section 1:**

8.1.4 Describe the structure of an atom and relate the arrangement of electrons to how that atom interacts with other atoms.

8.4.1 Understand how the strength of attractive forces between particles helps to explain many physical properties of the material.

8.NS.1 Make predictions and develop testable questions based on research and prior knowledge.

8.NS.8 Analyze data

8.NS.10 Compare the results of an experiment with the prediction.

**Section 2:**

8.1.2 Understand that elements are organized on the periodic table based on atomic number.

8.1.3 Explain how the arrangement of atoms and molecules determines chemical properties of substances.

8.NS.1 Make predictions and develop testable questions based on research and prior knowledge.

8.NS.8 Analyze data

**Section 3:**

8.1.1 Explain that all matter is composed of particular arrangements of atoms.

8.1.3 Explain how the arrangement of atoms and molecules determines chemical properties.

8.1.6 Explain that elements have characteristic properties.

8.4.3 Investigate the properties of natural materials.

8.NS.8 Analyze data.

**Section 4:**

8.1.1 Explain that all matter is composed of particular arrangements of atoms.

8.1.3 Explain how the arrangement of atoms and molecules determines chemical properties.

8.1.6 Explain that elements have characteristic properties.

8.4.3 Investigate the properties of natural materials.

8.NS.8 Analyze data.

**Objectives:**

1. Describe how atomic theory developed. (Section 1)
2. Describe the modern model of the atom. (Section 1)
3. Explain how Mendeeleev discovered the pattern that led to the periodic table. (Section 2)
4. Identify the data about elements found in the periodic table. (Section 2)
5. Explain how the periodic table is useful. (Section 2)
6. Summarize the properties of metals. (Section 3)
7. Describe how metals are classified in the periodic table. (Section 3)
8. Summarize the properties of nonmetals. (Section 4)
9. Describe the families that contain nonmetals. (Section 4)

**Learning Activities:**

1. Periodic Table and Elements Discussion
2. Mystery Boxes
3. Atomic Model Foldable
4. Periodic Table Basics
5. Periodic Table Coloring
6. Build an Atom: Interactive Art (Build an Atom)
7. Periodic Table of QR codes
8. Adopt an Element
9. Preventing Rusting Quick Lab Activity
10. Chapter Review Pg. 125-126
11. ISTEP prep Pg. 127
12. Discovery of the Elements Pg. 128
13. Elements of the Human Body Pg. 129