

Combining Atoms and Molecules

Lesson 2 Forming Solids

Grade 8 Science Content Standards—3.c: Students know atoms and molecules form solids by building up repeating patterns, such as the crystal structure of NaCl or long-chain polymers. Also covers: 7.c

Scan Lesson 2 of your book. Predict three topics that might be discussed.

1. _____
2. _____
3. _____

Review Vocabulary

Define element using your book or a dictionary.

element

New Vocabulary

Read the definitions below. Write the correct vocabulary term on the blank to the left of each definition.

bond formed when many metal atoms share their pooled electrons

ability of a substance to be pulled into wires

ability of a material to be hammered or rolled into sheets

regular, repeating arrangement of atoms, ions, or molecules

element that is usually shiny, a good conductor of heat and electricity, and a solid at room temperature

covalent compound made up of many small, repeating units linked together in a chain

small molecule that forms a link in a polymer chain

Academic Vocabulary

Use a dictionary to define the verb conduct as it applies to heat or electricity. Then use it in a sentence.

conduct

Lesson 2 Forming Solids (continued)

Main Idea

Details

Metals

I found this information on page _____.

I found this information on page _____.

Crystals

I found this information on page _____.

Organize information about metals in the table.

Some Types of Metal	Examples of Uses
Gold	
Copper	
Aluminum	
Steel (iron)	

Create a spider diagram that shows the 5 physical properties of metals.

Distinguish between the types of bonds that can form crystals.

Bonds That Can Form Crystals	
Type of Bond	Example of Crystal
	table salt

SUMMARIZE IT

Summarize two of the main points of the above sections.

Lesson 2 Forming Solids (continued)

Main Idea

Crystals

I found this information on page _____.

What is a polymer?

I found this information on page _____.

I found this information on page _____.

Details

Model the unit cell for sodium chloride and quartz in the spaces below.

Sodium Chloride

Quartz

Complete the paragraph below about polymers.

A _____ is a covalent compound made of many small, repeating units linked together in a _____. The word polymer means _____. A _____ is a small molecule that forms a link in a polymer chain. The monomer _____ links together to form polyethylene.

Classify the examples of polymers in the table as synthetic or natural, and name the monomer that makes up each.

Example	Type of Polymer	Monomer
Polyethylene		ethene
DNA		
Protein		
Carbohydrate		

SUMMARIZE IT

Highlight the main idea of this section below.

Polymers are covalent compounds made up of repeating monomers. Polymers can be synthetic or natural. Examples of polymers include polyethylene, DNA, and carbohydrates.