

Introduction to Chemistry

Section 4 Scientific Research

Main Idea

Details

Skim Section 4 of your text. Write three questions that come to mind from reading the headings, boldfaced terms, and illustration captions.

1. _____
2. _____
3. _____

New Vocabulary

Use your text to define each term.

pure research

applied research

Word Origin

Define the following term.

recover

Section 4 Scientific Research (continued)

Main Idea

Types of Scientific Investigations

Use with pages 17–18.

Students in the Laboratory

Use with pages 18–19.

Details

Describe *scientific investigations by completing the following sentences.*

Pure research becomes _____ when scientists develop a hypothesis based on the data and try to solve a specific problem.

_____ have been made when a scientist reaches a conclusion far different than anticipated. Some wonderful scientific discoveries have been made _____.

Review *Table 2 in your text. Write an A if you agree with the statement. Write a D if you disagree with the statement.*

_____ Return unused chemicals to the stock bottle.

_____ It is not safe to wear contact lenses in the lab.

_____ Only a major accident, injury, incorrect procedure, or damage to equipment needs to be reported.

_____ Graduated cylinders, burettes, or pipettes should be heated with a laboratory burner.

Analyze *laboratory safety by responding to the following situations.*

1. Explain in your own words why safety goggles and a laboratory apron must be worn whenever you are in the lab.

2. State why bare feet or sandals are not permitted in the lab.

Section 4 Scientific Research (continued)

Main Idea	Details
	<p>3. Describe how you would explain to another student why you should not return unused chemicals to the stock bottle.</p> <p>_____</p> <p>_____</p> <p>_____</p>
	<p>4. Explain why is it important to keep the balance area clean.</p> <p>_____</p> <p>_____</p> <p>_____</p>

SYNTHESIZE

Some students are conducting an experiment that involves combining sodium and water. Too much sodium is added, which causes a fire. A student reacts by throwing water on the fire, but this only causes the fire to spread. The teacher finally puts the fire out. Based on what you now know about chemistry and lab safety, explain how this could have been avoided.

Introduction to Chemistry Chapter Wrap-Up

Now that you have read the chapter, review what you have learned. Fill in the blanks below with the correct word or phrase.

Chemistry is the study of _____.

Matter is anything that has _____ and takes up _____. Mass is _____ and differs from weight in that it does not measure the effect of _____ on matter.

The steps of the scientific process include:

Two types of scientific investigation are:

Review

Use this checklist to help you study.

- Study your Science Notebook for this chapter.
- Study the vocabulary words and scientific definitions.
- Review daily homework assignments.
- Reread the chapter and review the tables, graphs, and illustrations.
- Answer the Section Review questions at the end of each section.
- Look over the Study Guide at the end of the chapter.

REAL-WORLD CONNECTION

Explain three ways you use chemistry in daily life.

1. _____
2. _____
3. _____