Science Notebook

Glencoe Science

Florida Science

Grade 6

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Mc Graw Hill Glencoe

New York, New York Columbus, Ohio Chicago, Illinois Peoria, Illinois Woodland Hills, California

About the Consultant

Douglas Fisher, Ph.D., is a Professor in the Department of Teacher Education at San Diego State University. He is the recipient of an International Reading Association Celebrate Literacy Award as well as a Christa McAuliffe award for Excellence in Teacher Education. He has published numerous articles on reading and literacy, differentiated instruction, and curriculum design as well as books, such as *Improving Adolescent Literacy: Strategies at Work* and *Responsive Curriculum Design in Secondary Schools: Meeting the Diverse Needs of Students*. He has taught a variety of courses in SDSU's teacher-credentialing program as well as graduate-level courses on English language development and literacy. He also has taught classes in English, writing, and literacy development to secondary school students.

Mc Graw Hill Glencoe

The McGraw-Hill Companies

Send all inquiries to:
Glencoe/McGraw-Hill
8787 Orion Place
Columbus, Ohio 43240-4027

ISBN 0-07-869572-4

Printed in the United States of America

1 2 3 4 5 6 7 8 9 047 024 08 07 06 05

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Table of Contents

Note-Taking Tips

Your notes are a reminder of what you learned in class. Taking good notes can help you succeed in science. These tips will help you take better notes.

- Be an active listener. Listen for important concepts. Pay attention to words, examples, and/or diagrams your teacher emphasizes.
- Write your notes as clearly and concisely as possible. The following symbols and abbreviations may be helpful in your note-taking.

Word or Phrase	Symbol or Abbreviation
for example	e.g.
such as	i.e.
with	w/
without	w/o

Word or Phrase	Symbol or Abbreviation
and	+
approximately	≈
therefore	∴
versus	vs

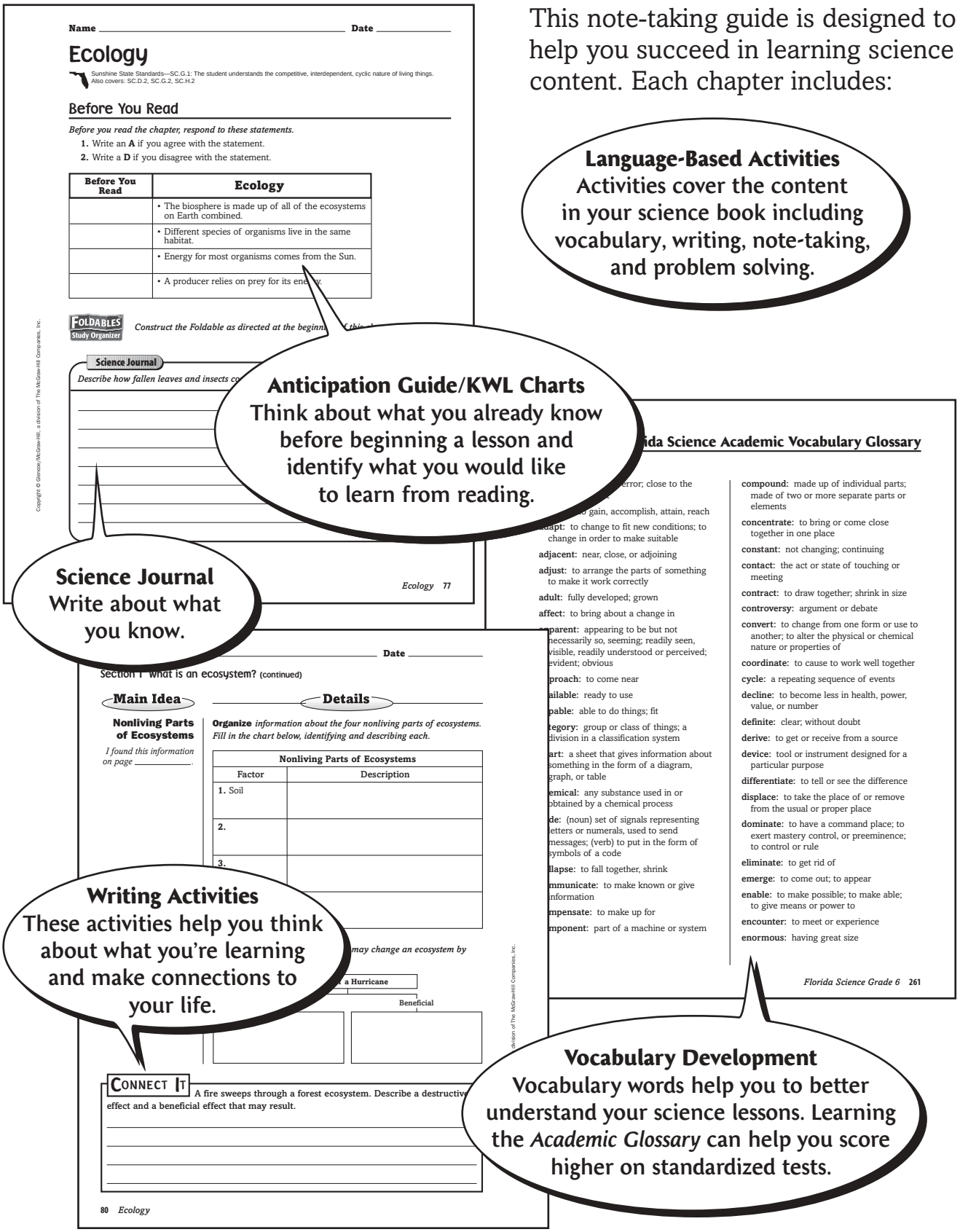
- Use a symbol such as a star (★) or an asterisk (*) to emphasis important concepts. Place a question mark (?) next to anything that you do not understand.
- Ask questions and participate in class discussion.
- Draw and label pictures or diagrams to help clarify a concept.

Note-Taking Don'ts

- **Don't** write every word. Concentrate on the main ideas and concepts.
- **Don't** use someone else's notes—they may not make sense.
- **Don't** doodle. It distracts you from listening actively.
- **Don't** lose focus or you will become lost in your note-taking.

Using Your Science Notebook

This note-taking guide is designed to help you succeed in learning science content. Each chapter includes:



Name _____ Date _____

Ecology

Sunshine State Standards—SC.G.1: The student understands the competitive, interdependent, cyclic nature of living things. Also covers: SC.D.2, SC.G.2, SC.H.2

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	Ecology
	• The biosphere is made up of all of the ecosystems on Earth combined.
	• Different species of organisms live in the same habitat.
	• Energy for most organisms comes from the Sun.
	• A producer relies on prey for its energy.

FOLDABLES Study Organizer *Construct the Foldable as directed at the beginning of this*

Science Journal

Describe how fallen leaves and insects co

Ecology 77

Language-Based Activities
Activities cover the content in your science book including vocabulary, writing, note-taking, and problem solving.

Anticipation Guide/KWL Charts
Think about what you already know before beginning a lesson and identify what you would like to learn from reading.

Science Journal
Write about what you know.

Date _____

Section 1 What is an ecosystem? (continued)

Main Idea — **Details**

Nonliving Parts of Ecosystems

I found this information on page _____.

Organize *information about the four nonliving parts of ecosystems. Fill in the chart below, identifying and describing each.*

Nonliving Parts of Ecosystems	
Factor	Description
1. Soil	
2.	
3.	

may change an ecosystem by

a Hurricane

Beneficial

CONNECT IT A fire sweeps through a forest ecosystem. Describe a destructive effect and a beneficial effect that may result.

80 Ecology

Writing Activities
These activities help you think about what you're learning and make connections to your life.

ida Science Academic Vocabulary Glossary

error; close to the

o gain, accomplish, attain, reach

adapt: to change to fit new conditions; to change in order to make suitable

adjacent: near, close, or adjoining

adjust: to arrange the parts of something to make it work correctly

adult: fully developed; grown

affect: to bring about a change in

apparent: appearing to be but not necessarily so, seeming; readily seen, visible, readily understood or perceived; evident; obvious

proach: to come near

ailable: ready to use

pable: able to do things; fit

tegory: group or class of things; a division in a classification system

art: a sheet that gives information about something in the form of a diagram, graph, or table

emical: any substance used in or obtained by a chemical process

de: (noun) set of signals representing letters or numerals, used to send messages; (verb) to put in the form of symbols of a code

llapse: to fall together, shrink

mmunicate: to make known or give information

mpensate: to make up for

mponent: part of a machine or system

compound: made up of individual parts; made of two or more separate parts or elements

concentrate: to bring or come close together in one place

constant: not changing; continuing

contact: the act or state of touching or meeting

contract: to draw together; shrink in size

controversy: argument or debate

convert: to change from one form or use to another; to alter the physical or chemical nature or properties of

coordinate: to cause to work well together

cycle: a repeating sequence of events

decline: to become less in health, power, value, or number

definite: clear; without doubt

derive: to get or receive from a source

device: tool or instrument designed for a particular purpose

differentiate: to tell or see the difference

displace: to take the place of or remove from the usual or proper place

dominate: to have a command place; to exert mastery control, or preeminence; to control or rule

eliminate: to get rid of

emerge: to come out; to appear

enable: to make possible; to make able; to give means or power to

encounter: to meet or experience

enormous: having great size

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Vocabulary Development
Vocabulary words help you to better understand your science lessons. Learning the *Academic Glossary* can help you score higher on standardized tests.

Name _____ Date _____

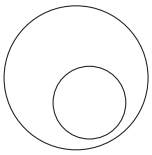
Section 2 Relationships Among Living Things (continued)

Main Idea — **Details**

Organizing Ecosystems

I found this information on page _____.

Complete *the Venn diagram below to represent the relationship between a* population *and a* community.



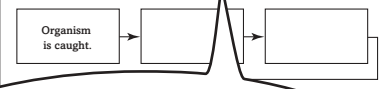
I found this information on page _____.

Summarize *the characteristics of populations that are studied by ecologists. Complete the sentence.*

The characteristics of a population include the size of the population, _____, and _____.

I found this information on page _____.

Sequence *the steps in the* mark and recapture method *of studying populations by completing the flow chart below.*



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Note-Taking Based on the Cornell Two-Column Format

Practice effective note-taking through the use of graphic organizers, outlines, and written summaries.

Chapter Wrap-Up

This brings the information together for you. Revisiting what you thought at the beginning of the chapter provides another opportunity for you to discuss what you have learned.

Name _____ Date _____

Ecology Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Ecology	After You Read
• The biosphere is made up of all of the ecosystems on Earth combined.	
• Different species of organisms live in the same habitat.	
• Energy for most organisms comes from the Sun.	
• A producer relies on prey for its energy.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts
- ☐ Review the Self Check at the end
- ☐ Look over the Chapter Revi

SUMMARIZE IT Aft

learned about ecology.

88 *Ecology*

Review Checklist

This list helps you assess what you have learned and prepare for your chapter tests.

Name _____ Date _____

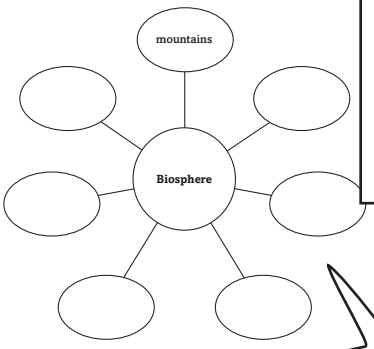
Section 1 What is an ecosystem? (continued)

Main Idea — **Details**

Ecosystems

I found this information on page _____.

Identify *some of the major* ecosystems *that make up the biosphe by completing the graphic organizer below.*



Living Parts of Ecosystems

I found this information on page _____.

Identify *the four key needs of organisms and list the*

Key Needs of Organ
1.
2.
3.
4.

Ecology 79

Graphic Organizers

A variety of visual organizers help you to analyze and summarize information and remember content.

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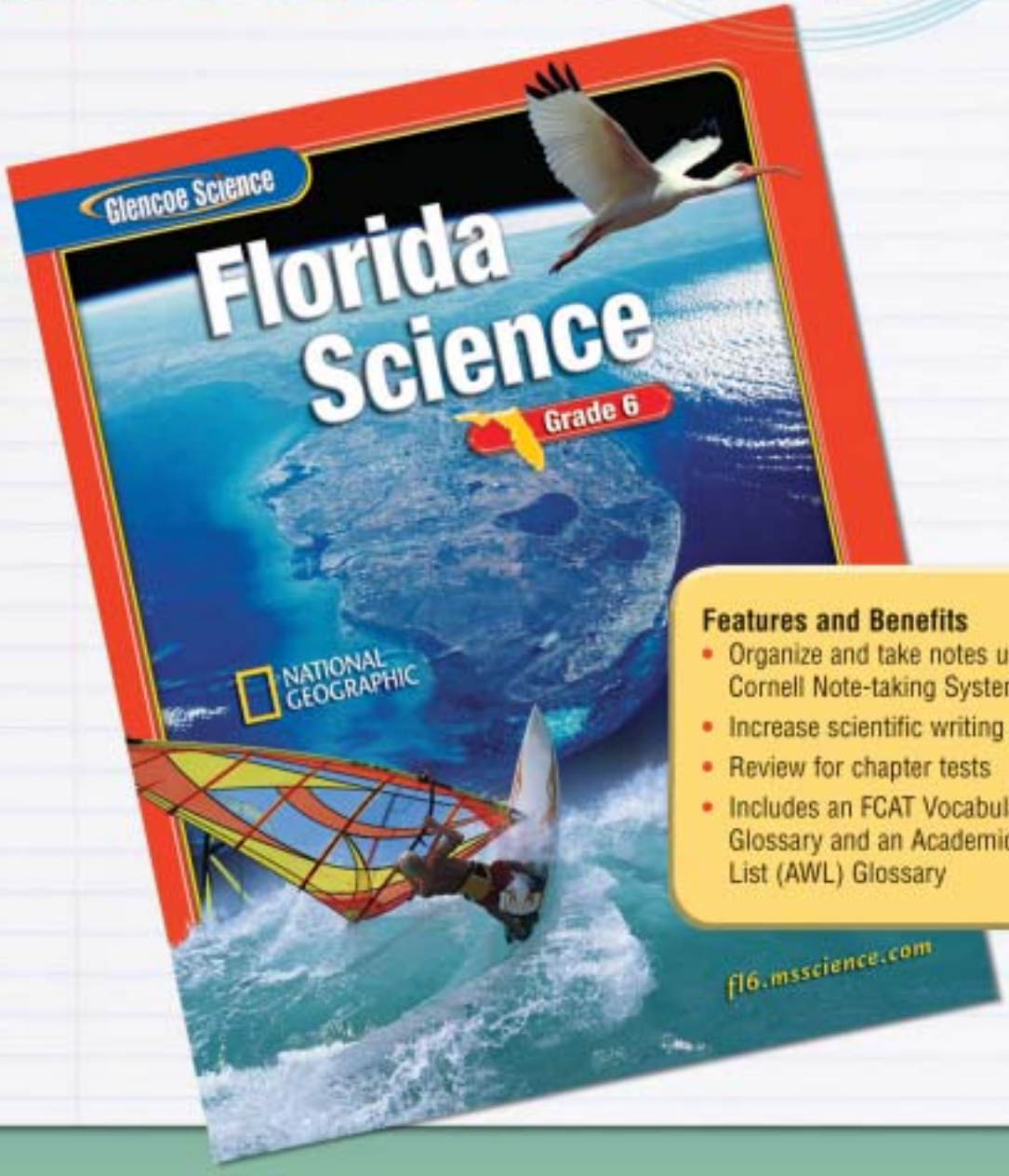
Science Notebook



Features and Benefits

- Organize and take notes using the Cornell Note-taking System
- Increase scientific writing skills
- Review for chapter tests
- Includes an FCAT Vocabulary Glossary and an Academic Word List (AWL) Glossary

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Name _____ **Date** _____

Exploring and Classifying Life

Sunshine State Standards—SC.H.1: The student uses the scientific processes and habits of mind to solve problems. Also covers: SC.F.1, SC.G.1

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	Exploring and Classifying Life
	• All science takes place in laboratories.
	• All of the changes that take place during an organism's life are called responses.
	• Spontaneous generation is the idea that living things come from nonliving things.
	• Organisms are classified into groups based on their similarities.

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

List three characteristics that you would use to classify underwater life.

Name _____ **Date** _____

Exploring and Classifying Life

Section 1 What is science?

Benchmarks—SC.H.1.3.1: The student knows that scientific knowledge is subject to modification as new information challenges prevailing theories and as a new theory leads to looking at old observations in a new way. Also covers: SC.H.1.3.3, SC.H.1.3.4, SC.H.1.3.5, SC.H.3.3.2

Scan *the list below to preview Section 1 of your book.*

- Read all section headings.
- Read all bold words.
- Read all charts and graphs.
- Think about what you already know about how to solve problems.

Write three facts you discovered about scientific methods as you scanned the section.

1. _____

2. _____

3. _____

Review Vocabulary

experiment

Write a paragraph describing scientific methods. Use all of the vocabulary words in your description. Underline each vocabulary word.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

New Vocabulary

scientific methods
hypothesis
control
variable
theory
law

Academic Vocabulary

reject

Name _____ **Date** _____

Section 1 What is science? (continued)

Main Idea | **Details**

The Work of Science

I found this information on page _____.

Define science *using information from this section.*

_____

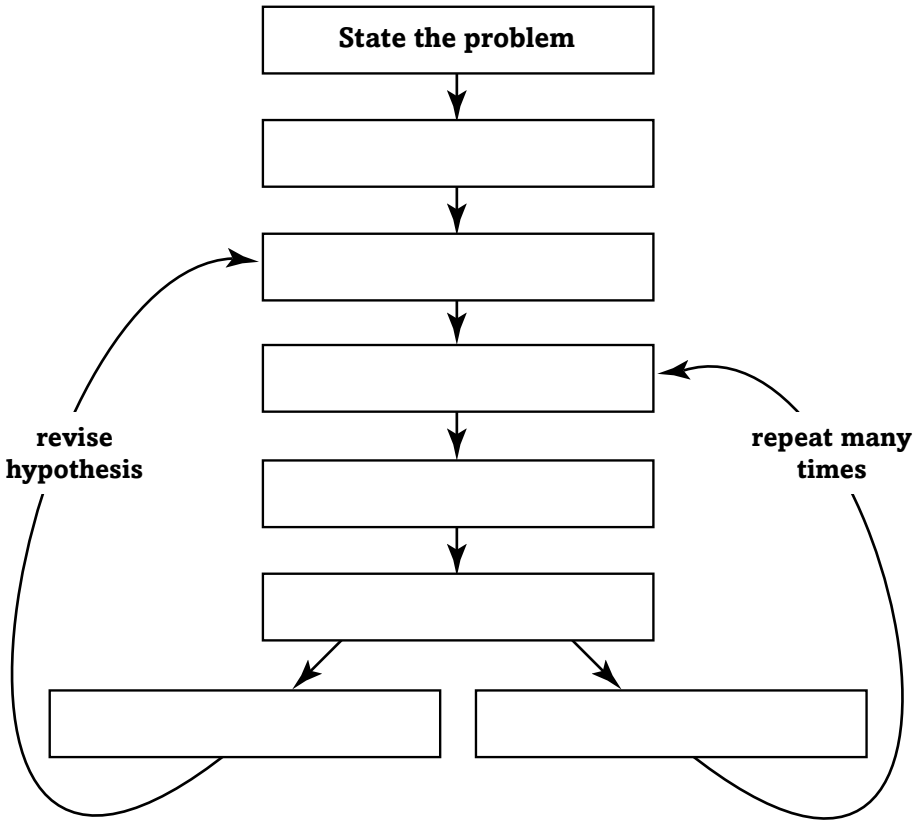
_____

_____

Solving Problems

I found this information on page _____.

Sequence ***the steps scientists use to solve problems. Study the figure in your book, then close your book and try to fill in the figure. Check your work by looking back at your book.***



I found this information on page _____.

Analyze ***the role of controls and variables in an experiment. Fill in the missing words.***

A control is the _____ to which the _____ of a test is _____. A variable is _____ that can be _____. The number of variables that should be changed during an experiment is _____.

Name _____ **Date** _____

Section 1 What is science? (continued)

Main Idea

Details

Developing Theories

I found this information on page _____.

Contrast *an* opinion, a scientific theory, *and a* scientific law. *Complete the table.*

	Opinion	Scientific Theory	Scientific Law
What it is			
What it is based on			

Measuring with Scientific Units

I found this information on page _____.

Summarize *the metric units for each quantity below by listing them.*

Length: _____

Volume: _____

Mass: _____

Safety First

I found this information on page _____.

Identify *two important safety practices to follow in a laboratory.*

1. _____

2. _____

SYNTHESIZE IT

A scientist collects data about ducks' migration patterns every year between November and April. After 5 years, she draws conclusions and publishes a scientific paper. Describe the scientific methods she might have used. State why it was important to wait 5 years before publishing her results.

_____

_____

_____

Name _____ **Date** _____

Exploring and Classifying Life

Section 2 Living Things

Benchmarks—SC.F.1.3.1: The student understands that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation. Also covers: SC.F.1.3.2, SC.F.1.3.3, SC.F.1.3.5, SC.F.1.3.7, SC.G.1.3.5

Predict *what you will learn in Section 2. Read the title and main headings. List three topics that you predict will be discussed in the section.*

1. _____

2. _____

3. _____

Review Vocabulary

Use raw materials *in a sentence to show its scientific meaning.*

raw materials _____

_____

New Vocabulary

Find a sentence in Section 2 that uses each vocabulary term.

organism _____

_____

cell _____

_____

homeostasis _____

_____

Academic Vocabulary

Define respond *using a dictionary. Then find a sentence in Section 2 that uses the term.*

respond

Definition: _____

Sentence: _____

_____

Name _____ **Date** _____

Section 2 Living Things (continued)

Main Idea

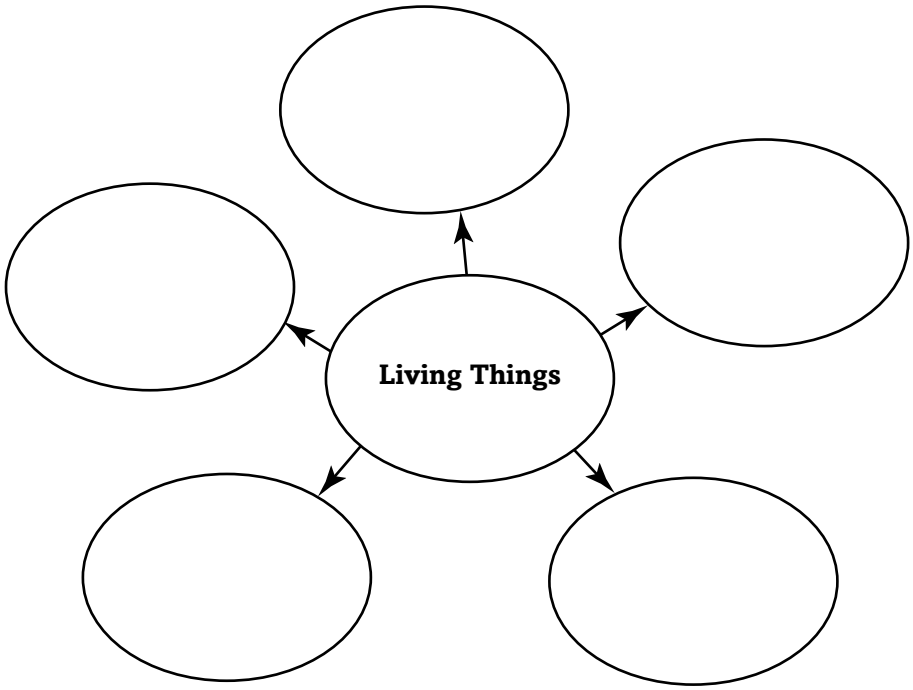
What are living things like?

I found this information on page _____.

I found this information on page _____.

Details

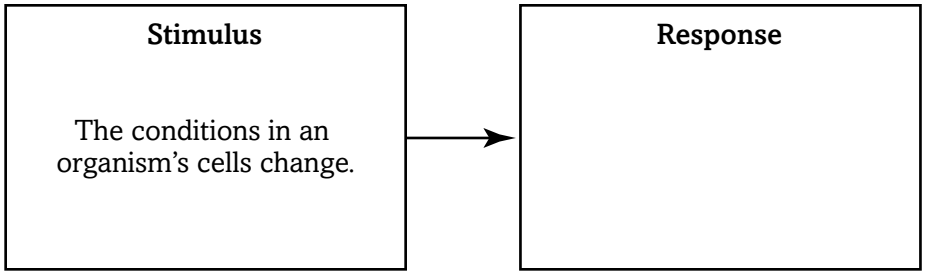
Organize *the characteristics that define living things. Complete the graphic organizer.*



Describe *the relationship between a stimulus and a response. Complete the table. Then complete the flowchart to describe homeostasis.*

	What It Is	Example
Stimulus		
Response		

Homeostasis



Name _____ **Date** _____

Section 2 Living Things (continued)

Main Idea

I found this information on page _____.

What do living things need?

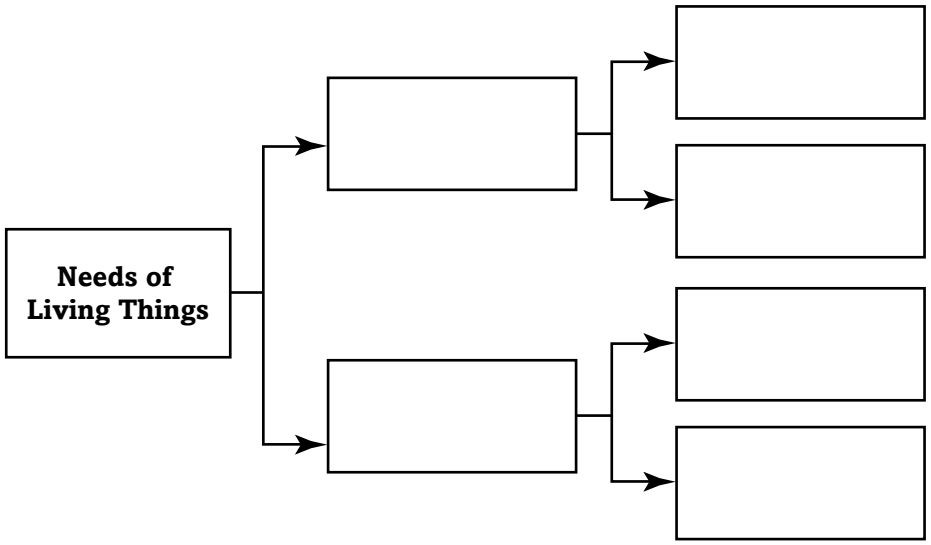
I found this information on page _____.

Details

Contrast *the ways organisms obtain energy in the table.*

Organism	How It Obtains Energy
Plants	
Animals	
Bacteria in places sunlight cannot reach	

Classify *the needs of all living things. Complete the concept map.*



Summarize It

Choose one living thing and one nonliving thing with which you are familiar. Use the five characteristics of living things to explain how you know that each is living or nonliving. Complete the chart to organize your information.

Object	Has cells?	Uses energy?	Grows and develops?	Responds to stimuli?	Reproduces?

Name _____ **Date** _____

Exploring and Classifying Life

Section 3 Where does life come from?

Benchmarks—SC.H.1.3.1: The student knows that scientific knowledge is subject to modification as new information challenges prevailing theories and as a new theory leads to looking at old observations in a new way. Also covers: SC.F.2.3.4, SC.H.1.3.2, SC.H.1.3.5, SC.H.1.3.6, SC.H.3.3.5

Skim *Section 3, and write three questions that you have.*

1. _____

2. _____

3. _____

Review Vocabulary

contaminate

Define contaminate *and use it in an original sentence.*

_____

_____

_____

New Vocabulary

Write the vocabulary term that matches each definition.

_____ the idea that living things come from nonliving things

_____ the idea that living things come only from other living things

Academic Vocabulary

estimate

Use a dictionary to define **estimate** *as both a noun and a verb.*

noun: _____

_____

verb: _____

_____

Name _____ **Date** _____

Section 3 Where does life come from? (continued)

Main Idea | **Details**

Life Comes from Life

I found this information on page _____.

Contrast *the theories of* spontaneous generation *and* biogenesis. *Complete the table.*

	Spontaneous Generation	Biogenesis
Source of life		

I found this information on page _____.

Sequence *experiments that were conducted about the theory of spontaneous generation. Complete the time line.*

1800s
Who: _____
What: _____
_____

1700s
Who: _____
What: _____
_____

1668
Who: _____
What: _____
_____

Life's Origins

I found this information on page _____.

Complete *key events in the evolution of life on Earth. Identify the event that scientists believe occurred at each time.*

about 5 billion years ago: _____

_____

about 4.6 billion years ago: _____

more than 3.5 billion years ago: _____

_____

Name _____ **Date** _____

Section 3 Where does life come from? (continued)

Main Idea

Life's Origins

I found this information on page _____.

Details

Organize *information about Oparin's hypothesis. Complete the outline.*

I. Oparin's hypothesis of Earth's early atmosphere composition

A. _____

B. _____

C. _____

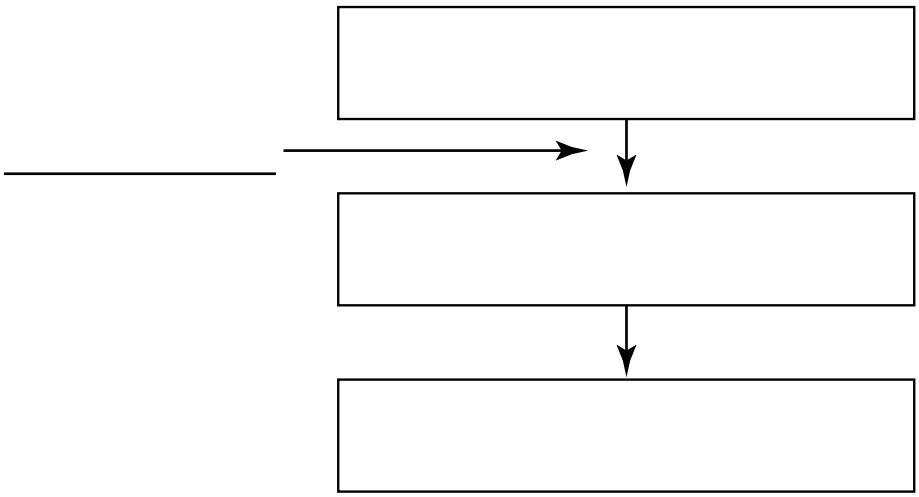
D. _____

II. What happened in the atmosphere

A. _____

B. _____

Complete *the graphic organizer summarizing Stanley Miller and Harold Urey's experiment.*



CONNECT IT

Scientists' theories of the origin of life have changed over time. How do these changes show the use of scientific methods?

_____

_____

_____

_____

Name _____ **Date** _____

Exploring and Classifying Life

Section 4 How are living things classified?

Benchmarks—SC.G.1.3.3: The student understands that the classification of living things . . . set of criteria . . . tool for understanding biodiversity and interrelationships. Also covers: SC.H.1.3.1, SC.H.1.3.4, SC.H.1.3.5, SC.H.1.3.6, SC.H.3.3.5

Read *the* **What You'll Learn** *statements for Section 4. Rewrite each statement as a question. As you read, look for the responses to your questions.*

1. _____

2. _____

3. _____

4. _____

Review Vocabulary

Describe how an organism's common name is different from its scientific name.

common name _____

_____

_____

New Vocabulary

Read the definitions below. Write the vocabulary term that matches each definition.

_____ first and largest category used to classify organisms

_____ evolutionary history of an organism

_____ group of similar species

_____ two-word scientific naming system

Academic Vocabulary

Define **similar** *using a dictionary.*

similar _____

_____

_____

Name _____ **Date** _____

Section 4 How are living things classified? (continued)

Main Idea | **Details**

Classification

I found this information on page _____.

Contrast *historic classification systems. Identify the categories or criteria used in each system.*

	Early classification	Aristotle	Linnaeus
Categories or criteria			

I found this information on page _____.

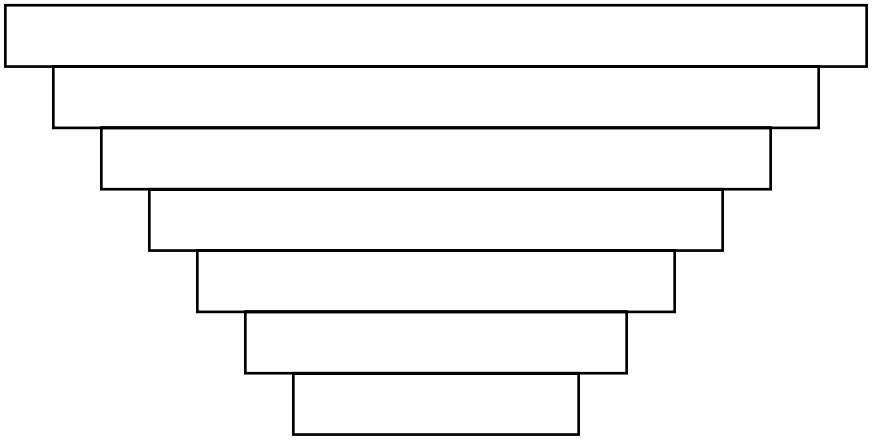
Summarize *the 6 types of information that modern scientists use to determine an organism's phylogeny.*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

I found this information on page _____.

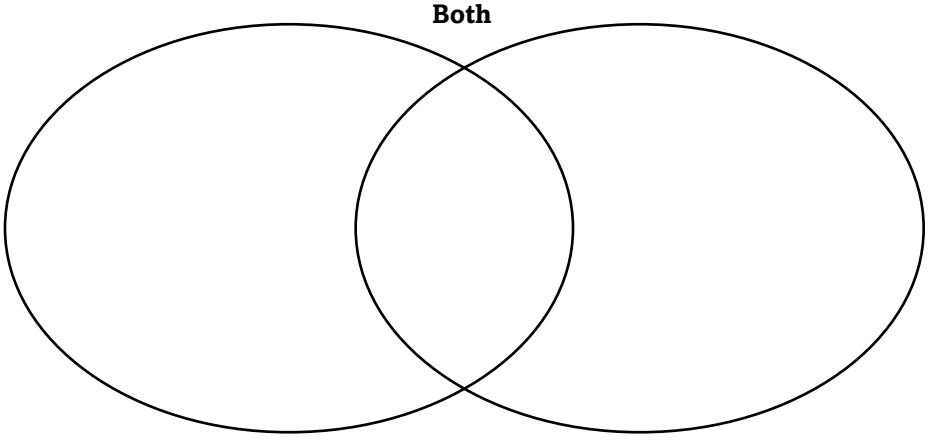
Label *the groups used to classify organisms from least specific to most specific. Use the word bank to complete the diagram.*

class genus order species
family kingdom phylum



Name _____ **Date** _____

Section 4 How are living things classified? (continued)

Main Idea	Details
Scientific Names *I found this information on page* _____.	**Summarize** binomial nomenclature. *Complete the sentences.* The first word of an organism's scientific name is its _____. The second word might _____. **Identify** *four reasons the system of binomial nomenclature is useful.* **1.** _____ **2.** _____ **3.** _____ **4.** _____
Tools for Identifying Organisms *I found this information on page* _____.	**Distinguish** *between a* field guide *and a* dichotomous key. *Complete the Venn diagram.* **Field Guide** **Both** **Dichotomous Key** 

SYNTHESIZE IT

Choose five similar plants or animals. Use what you know about their structures and features to develop your own dichotomous key to classify your choices. Use a dictionary to find the scientific name of each plant or animal to include in your key.

Name _____ **Date** _____

Exploring and Classifying Life

Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Exploring and Classifying Life	After You Read
• All science takes place in laboratories.	
• All of the changes that take place during an organism's life are called responses.	
• Spontaneous generation is the idea that living things come from nonliving things.	
• Organisms are classified into groups based on their similarities.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things you have learned.**

_____

_____

_____

_____

Name _____ **Date** _____

The Living Cell

Sunshine State Standards—SC.F.1: The student describes patterns of structure and function in living things.
Also covers: SC.H.2

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	The Living Cell
	• Bacteria are the smallest organisms on Earth.
	• All living things are made up of one or more cells.
	• Cells are organized into systems to perform functions that keep an organism alive.
	• All bacteria are harmful.

FOLDABLES™ Study Organizer

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

List features common to small, plastic building blocks. Predict whether plastic building blocks or cells have the greater number of features in common.

Name _____ **Date** _____

The Living Cell

Section 1 The World of Cells

Benchmarks—SC.F.1.3.2: The student knows that the structural basis of most organisms is the cell and most organisms are single cells, while some, including humans, are multicellular. Also covers: SC.F.1.3.5, SC.F.1.3.6, SC.G.1.3.1, SC.H.1.3.4

Skim *through Section 1 of your text. Write two questions that come to mind.*

1. _____

2. _____

Review Vocabulary

Use the term theory *in a sentence to illustrate its scientific meaning.*

theory _____

_____

New Vocabulary

Define *the following key terms using your book or a dictionary.*

cell membrane _____

_____

nucleus _____

_____

mitochondria _____

_____

photosynthesis _____

_____

chloroplast _____

_____

Academic Vocabulary

Use a dictionary to define exclude *as a verb.*

exclude _____

Name _____ **Date** _____

Section 1 The World of Cells (continued)

Main Idea | **Details**

Importance of Cells

I found this information on page _____.

Summarize *the three main ideas of the cell theory.*

	Cell Theory
1.	All living things are made up of one or more cells.
2.	
3.	

What are cells made of?

I found this information on page _____.

Organize *information you have learned about parts of a cell.*

Parts of a cell

I. The outside of the cell

A. Cell membrane

1. _____

2. _____

B. _____ (plants only)

supports and _____

II. The inside of the cell

A. _____

1. gelatin-like substance

2. _____

B. _____

1. _____

a. stores _____ in chromosomes

b. _____

2. Vacuoles store _____, _____, _____, and _____

3. _____ converts food energy into _____

Name _____ **Date** _____

Section 1 The World of Cells (continued)

Main Idea

Details

What are cells made of?

I found this information on page _____.

Model *an* animal cell. *Use your book to help you sketch an animal cell and label its parts.*

cell membrane	cytoplasm	nucleus
chromosomes	mitochondrion	vacuole

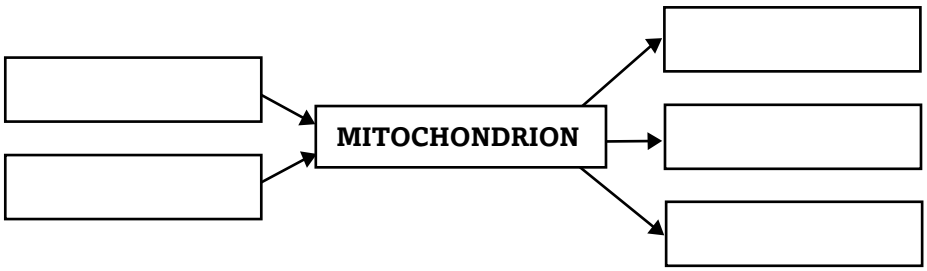
Energy and the Cell

I found this information on page _____.

Compare cellular respiration *and* photosynthesis. *Label each input and output flow chart with these same five labels.*

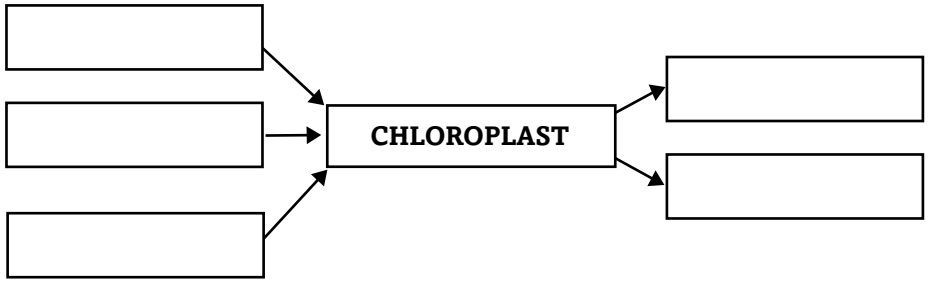
carbon dioxide food energy oxygen water

Cellular Respiration



I found this information on page _____.

Photosynthesis



Name _____ **Date** _____

The Living Cell

Section 2 The Different Jobs of Cells

Benchmarks—SC.F.1.3.6: The student knows that the cells with similar functions have similar structures, whereas those with different structures have different functions. Also covers: SC.F.1.3.4, SC.F.1.3.5

Skim *the section. Read the headings and the figure captions. Predict three topics that might be discussed in this section.*

1. _____

2. _____

3. _____

Review Vocabulary

Define **organism** *using a dictionary.*

organism _____

_____

New Vocabulary

Read the definitions below. Write the key term on the blank in the left column.

_____ group of similar cells that do the same type of work

_____ different types of tissues working together

_____ group of organs that works together to do a certain job

Academic Vocabulary

Use a dictionary to define **function**. *Then use the term in a scientific sentence.*

function _____

_____

_____

Name _____ **Date** _____

Section 2 The Different Jobs of Cells (continued)

Main Idea | **Details**

Special Cells for Special Jobs

I found this information on page _____.

Summarize *information from your book about* human cells.

Type of Cell	Description
Bone	
	long and have many branches to send and receive messages quickly
	usually long and have many fibers that can contract and relax
Skin	
Fat	

I found this information on page _____.

Identify *three functions of plant cells.*

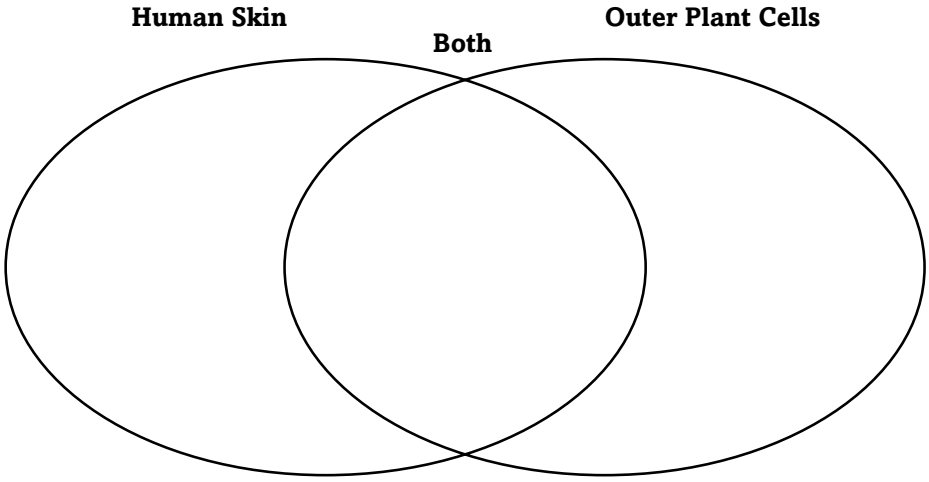
1. _____ **3.** _____

2. _____

I found this information on page _____.

Compare and contrast ***human skin cells and the cells on the outside of a plant stem. Put the statements into the Venn diagram.***

- cells are flat and close together
- part of the outer layer of the organism
- cells are short and thick
- provide protection against sun and disease
- cells provide structure



Name _____ **Date** _____

Section 2 The Different Jobs of Cells (continued)

Main Idea	Details
Cell Organization *I found this information on page* _____.	**Complete** ***the outline about cell organization.*** Cell organization of many-celled organisms **I.** Tissues **A.** Definition: _____ **B.** Example: _____ **II.** Organs **A.** Definition: _____ **B.** Example: _____ Specific examples of tissue systems **1.** _____ **2.** _____ **3.** _____ **III.** Organ systems **A.** Definition: _____ _____ **B.** Example: _____ Specific examples of organs in system **1.** _____ **2.** _____ **3.** _____

CONNECT IT

Create an analogy between the jobs of nerve cells and fat cells to real-life careers. For example, skin cells help protect the body, and police officers help protect people.

_____

_____

_____

Name _____ **Date** _____

The Living Cell

Section 3 Bacteria, Protists, and Fungi

Benchmarks—SC.F.1.3.2: The student knows that the structural basis of most organisms is the cell and most organisms are single cells, while some, including humans, are multicellular. Also covers: SC.A.2.3.3, SC.D.1.3.4, SC.G.1.3.3, SC.H.1.3.4, SC.H.1.3.6

Scan *Section 3 of your book. Write three facts that you discovered about bacteria, protists, and fungi as you scanned the section.*

1. _____

_____

2. _____

_____

3. _____

_____

Review Vocabulary

Define life cycle *using your book or a dictionary.*

life cycle _____

_____

New Vocabulary

Read the definitions below. Write each vocabulary term on the blank in the left column.

_____ a process that is used to kill most harmful bacteria in a food product

_____ a one- or many-celled organism that lives in moist or wet surroundings

_____ a chemical that limits the growth of or kills other bacteria

_____ a one-celled, animal-like protist

_____ formed when a fungus and either a green alga or a cyanobacteriam live together

_____ plantlike protists

Academic Vocabulary

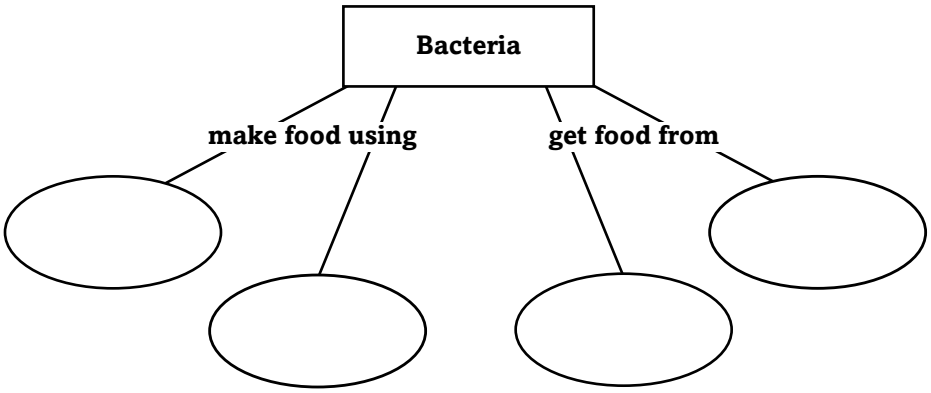
Use a dictionary to define **sphere.**

sphere _____

_____

Name _____ **Date** _____

Section 3 Bacteria, Protists, and Fungi (continued)

Main Idea	Details
Bacteria *I found this information on page* _____.	**Compare and contrast** *the ways that* bacteria *obtain food.* 
I found this information on page _____.	**Model** ***the three shapes of bacteria. Identify the shape and the special name of each one. Use the figure in your book to help you.***  _____ _____ _____ _____ _____ _____
I found this information on page _____.	**Summarize** ***how bacteria can be harmful and healthful.***

Name _____ **Date** _____

Section 3 Bacteria, Protists, and Fungi (continued)

Main Idea

Details

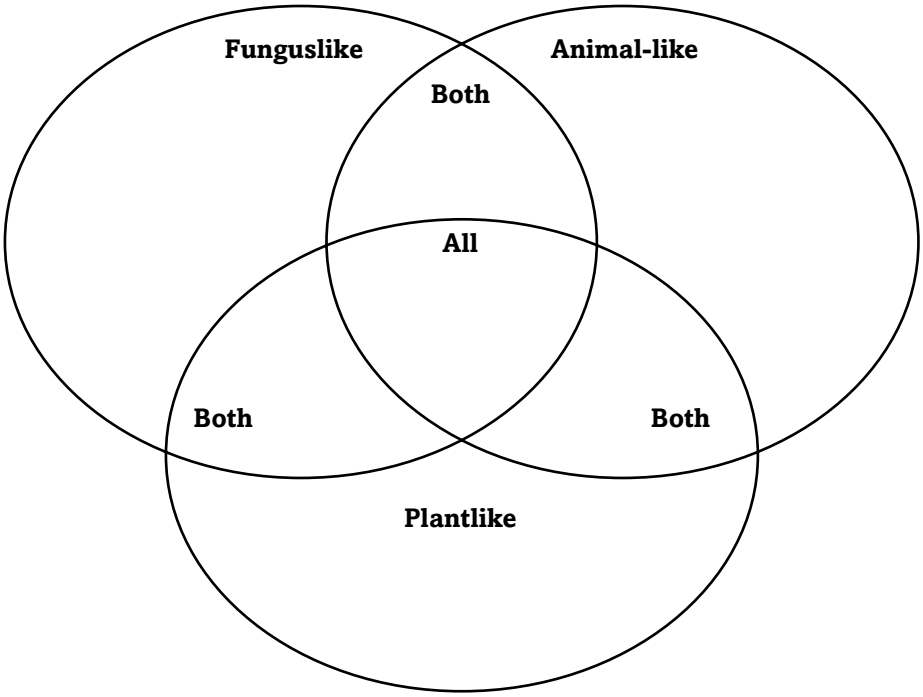
Protists

I found this information on page _____.

Compare and contrast *the three* protist *groups by inserting each characteristic listed below within the Venn diagram.*

- consumers
- contain chlorophyll
- eukaryotic
- grouped by how they move
- live in wet surroundings
- producers
- saprophytes or parasites
- some have pseudopods

Protists



I found this information on page _____.

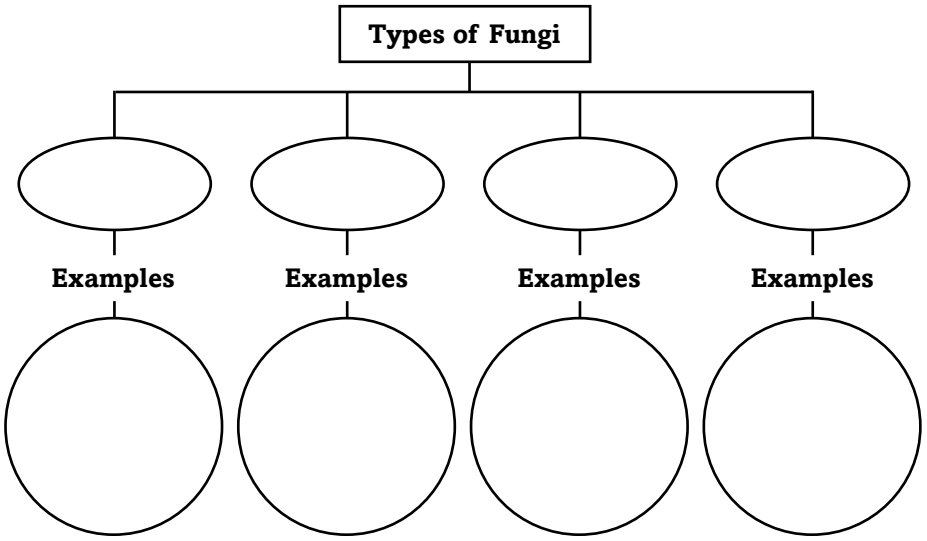
Summarize *how protists can be harmful and helpful.*

Protists	
Harmful Effects	**Helpful Effects**
1.	**1.**
2. Protists cause diseases such as malaria	**2.**
3.	**3.** Algae produce oxygen.
4.	**4.**

Name _____ **Date** _____

Section 3 Bacteria, Protists, and Fungi (continued)

Main Idea	Details
Fungi *I found this information on page* _____.	**Organize** *information about* **fungi** *by completing these sentences.* **1.** Most fungi are _____ and have _____. **2.** Most fungi are _____, but some are _____. **3.** Fungi reproduce using structures called _____. **4.** Fungi are common in _____.
I found this information on page _____.	**Classify** *fungi by completing the graphic organizer below.*



SYNTHESIZE IT

Write a short paragraph about how fungi that live in close association with other organisms help the environment.

_____

_____

_____

_____

_____

Name _____ **Date** _____

The Living Cell Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

The Living Cell	After You Read
• Bacteria are the smallest organisms on Earth.	
• All living things are made up of one or more cells.	
• Cells are organized into systems to perform functions that keep an organism alive.	
• All bacteria are harmful.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things that you have learned about cells.**

_____

_____

_____

_____

Name _____ **Date** _____

The Role of Genes in Inheritance

Sunshine State Standards—SC.F.2: The student understands the process and importance of genetic diversity. Also covers: SC.F.1

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	The Role of Genes in Inheritance
	• Offspring always show the dominant traits of their parents.
	• Some organisms can regrow parts of their bodies if these parts are lost.
	• Traits are passed from one generation to the next.
	• The environment cannot affect the way a person appears.

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Write three traits of horses that you could trace from parents to offspring.

Name _____ **Date** _____

The Role of Genes in Inheritance

Section 1 Continuing Life

Benchmarks—SC.F.2.3.1: The student knows the patterns and advantages of sexual and asexual reproduction in plants and animals. Also covers: SC.F.1.3.3, SC.F.2.3.2, SC.F.2.3.3, SC.G.1.3.2, SC.H.1.3.1, SC.H.1.3.4, SC.H.1.3.5, SC.H.2.3.1

Skim *the headings, illustrations, and charts in Section 1. Write three concepts that you predict this section will describe.*

1. _____
2. _____
3. _____

Review Vocabulary

Define chromosome *to show its scientific meaning.*

chromosome _____

_____

New Vocabulary

Write sentences that contain both terms in each pair.

asexual reproduction/ mitosis _____

_____

DNA/cloning _____

_____

sexual reproduction/ fertilization _____

_____

meiosis/sex cells _____

_____

Academic Vocabulary

Use your book or a dictionary to define the term identical.

identical _____

_____

Name _____ **Date** _____

Section 1 Continuing Life (continued)

Main Idea	Details
Reproduction *I found this information on page _____.*	**State** ***two reasons that reproduction is important.*** **1.** _____ _____ **2.** _____ _____
I found this information on page _____.	**Complete** ***the following paragraph.*** _____ is in all cells. It is shaped like a _____. The sides support the steps, or rungs, of the ladder. Each rung is made up of _____. There are _____ bases, and they pair _____. The order of the bases forms a _____ that provides the cell with _____ about what materials to make, how to make them, and when to make them.
Cell Division *I found this information on page _____.*	**Model** ***the steps of*** **mitosis** ***and*** **cell division,** ***beginning with a cell that has four chromosomes. Then complete the caption below.***

In a plant or animal cell, cell division results in _____ and the _____ of aging or _____ cells.

Name _____ **Date** _____

Section 1 Continuing Life (continued)

Main Idea

Details

Reproduction by One Organism

I found this information on page _____.

Complete *the information below about some important processes that rely on cell division.*

_____: Some organisms can replace body parts that have been lost.

Budding: _____

_____

_____: A copy of the original organism is made.

Sex Cells and Reproduction, Production of Sex Cells, and Sex Cells in Plants

I found this information on page _____.

Organize *the information about* **sex cells** *by completing the outline.*

I. Types of human sex cells

A. _____: sperm

B. _____: _____

II. Production of sex cells

A. Sex cells are formed through _____.

B. Sex cells have _____ the genetic information of _____.

III. Sex cells in flowering plants

A. After sperm and egg join, _____ _____.

B. A _____ that contains _____ may then develop.

Synthesize It

Describe why it is important that sex cells are produced by meiosis and not by mitosis.

_____

_____

_____

_____

_____

Name _____ **Date** _____

The Role of Genes in Inheritance

Section 2 Genetics—The Study of Inheritance

Benchmarks—SC.F.2.3.2: The student knows that the variation in each species is due to the exchange and interaction of genetic information as it is passed from parent to offspring. Also covers: SC.H.1.3.3, SC.H.1.3.5, SC.H.1.3.6, SC.H.1.3.7, SC.H.2.3.1, SC.H.3.3.1

Scan *Section 2. Read all of the section headings and bold terms. Write two facts that you discovered about genetics as you scanned the section.*

1. _____

2. _____

Review Vocabulary

Define *the term* **genotype** *to show its scientific meaning.*

genotype _____

_____

New Vocabulary

Write the correct vocabulary word next to each definition.

_____ passing of traits from parents to offspring

_____ study of how traits are passed from parents to offspring

_____ small section of DNA on a chromosome that has information about a trait

_____ different way that a certain trait appears that results from permanent changes in an organism's genes

_____ change in a gene or chromosome

Academic Vocabulary

Define **feature** *as it is used in the following sentence.*

Eye color, nose shape, and other features are traits that are inherited from one's parents.

feature _____

_____

Name _____ **Date** _____

Section 2 Genetics—The Study of Inheritance (continued)

Main Idea | **Details**

Heredity

I found this information on page _____.

Synthesize ***information about heredity by describing how traits are passed from parent to offspring.***

_____

_____

_____

_____

_____

What determines traits?

I found this information on page _____.

Analyze **hybrid** ***and*** **pure** ***traits by filling in the blanks.***

Each gene of a gene pair is called a(n) _____. If a gene pair contains different _____ for a trait, that trait is called a(n) _____. If a gene pair contains identical _____ for a trait, that trait is called _____.

I found this information on page _____.

Identify ***whether the*** **dominant** ***or*** **recessive** ***form of the trait will be expressed in each case.***

Alleles	Form of the Trait Expressed
two dominant alleles	
one dominant allele, one recessive allele	
two recessive alleles	

I found this information on page _____.

Summarize ***how environment can affect the expression of traits.***

_____

_____

_____

_____

Name _____ **Date** _____

Section 2 Genetics—The Study of Inheritance (continued)

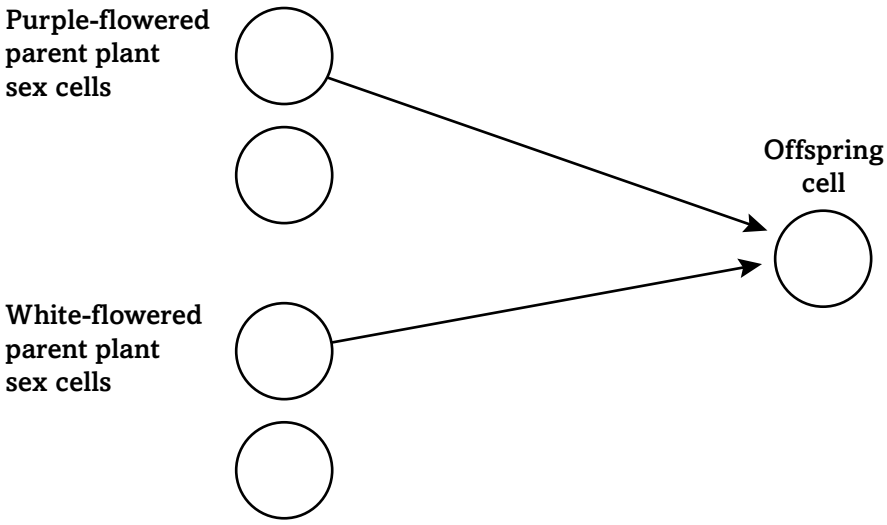
Main Idea

Details

Passing Traits to Offspring

I found this information on page _____.

Analyze *how a hybrid purple-flowered plant and a white-flowered plant can produce a purple-flowered plant. Fill in the correct allele(s) in each cell below.*



Differences in Organisms

I found this information on page _____.

Complete *the table that shows causes of variation in a species.*

	Description	Example(s)
Multiple alleles	There are more than two alleles for a trait in a population.	
Multiple genes		
Mutations		four-leaf clover

Synthesize It

The allele that codes for the presence of dimples is a dominant allele. Explain why a girl might not have dimples even though both her parents have dimples.

_____

_____

Name _____ **Date** _____

The Role of Genes in Inheritance

Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

The Role of Genes in Inheritance	After You Read
• Offspring always show the dominant traits of their parents.	
• Some organisms can regrow parts of their bodies if these parts are lost.	
• Traits are passed from one generation to the next.	
• The environment cannot affect the way a person appears.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things you have learned about the role of genes in inheritance.**

_____

_____

_____

_____

Name _____ **Date** _____

Support, Movement, and Responses

Sunshine State Standards—SC.F.1: The student describes patterns of structure and function in living things.

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	Support, Movement, and Responses
	• Your skin is the largest organ of your body.
	• No matter how still you might be, some muscles in your body are always moving.
	• Living bone is an organ made of several different tissues.
	• The basic working units of the nervous system are nerve cells.

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Imagine for a moment that your body does not have a support system. How will you perform your daily activities? Explain your reasoning.

Name _____ **Date** _____

Support, Movement, and Responses

Section 1 The Skin

Benchmarks—SC.F.1.3.1: The student understands that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation. Also covers: SC.F.1.3.2, SC.F.1.3.3, SC.F.1.3.4, SC.F.1.3.6, SC.F.1.3.7, SC.H.1.3.4, SC.H.1.3.5, SC.H.3.3.1

Scan *the section by following the checklist below.*

- ☐ Read all of the section headings.
- ☐ Read all of the bold words.
- ☐ Read all charts and graphs.
- ☐ Look at all of the pictures.
- ☐ Think about what you already know about the skin.

Write three facts that you discovered about the skin as you scanned this section.

1. _____

2. _____

3. _____

Review Vocabulary

Define organ *as it relates to the body, and use it in an original sentence.*

organ _____

_____

_____

New Vocabulary

Use your book to define the following terms.

epidermis _____

_____

melanin _____

_____

Academic Vocabulary

Use a dictionary to define regulate.

regulate _____

_____

Name _____ **Date** _____

Section 1 The Skin (continued)

Main Idea	Details
Skin Structures *I found this information on page _____.*	**Model** *the skin by drawing and labeling its parts.*
Skin Functions *I found this information on page _____.*	**Create** *a graphic organizer to identify the five major functions of the skin.*

Name _____ **Date** _____

Section 1 The Skin (continued)

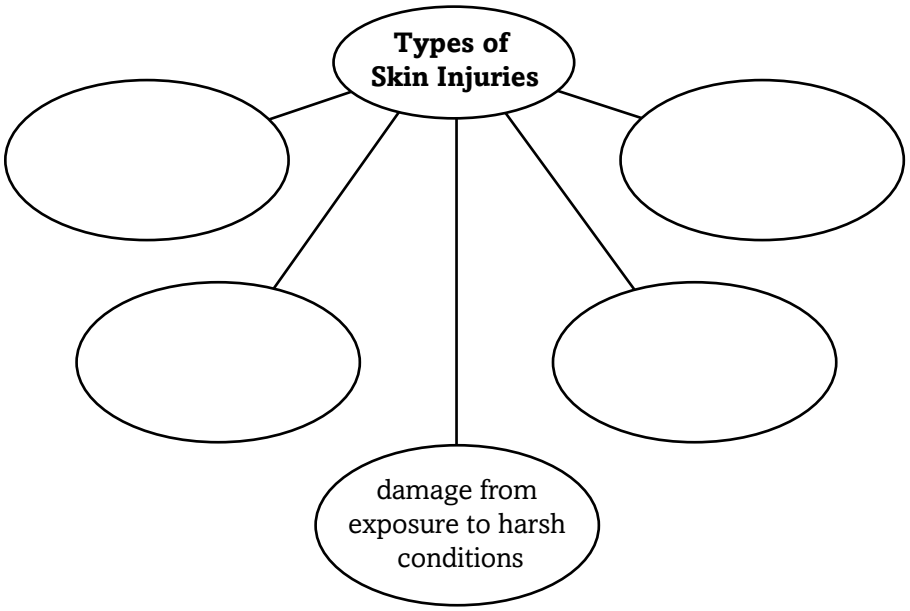
Main Idea

Skin Injuries and Repair

I found this information on page _____.

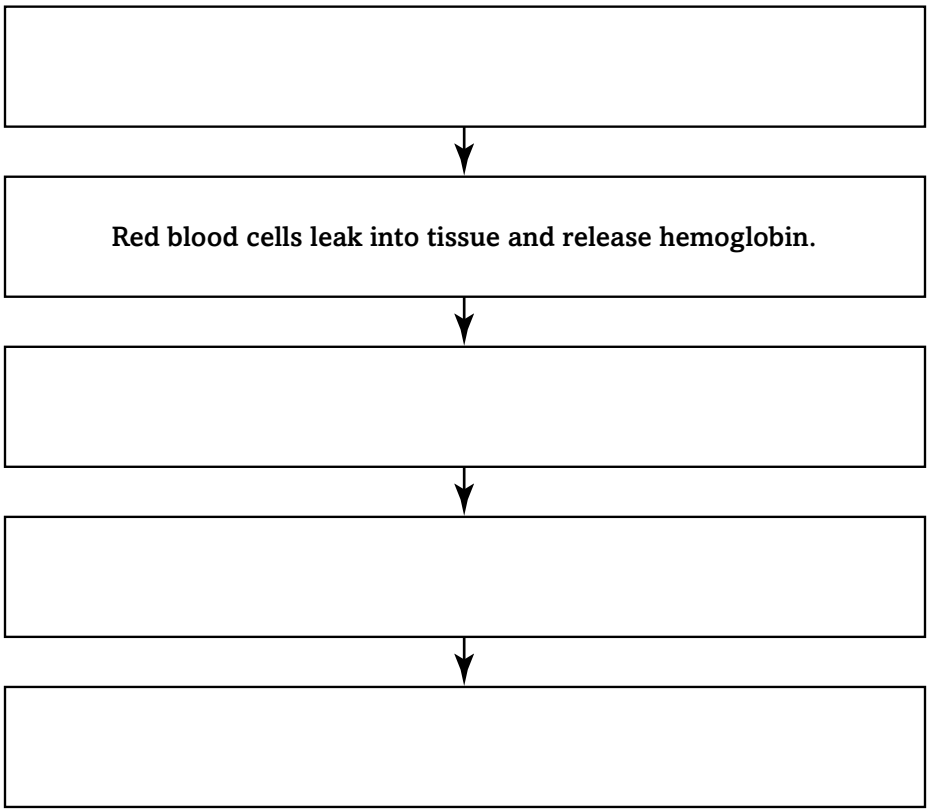
Details

Complete *the graphic organizer to identify types of skin injuries.*



I found this information on page _____.

Sequence *the steps involved in the formation of a bruise and its healing.*



Name _____ **Date** _____

Support, Movement, and Responses

Section 2 The Muscular System

Benchmarks—SC.F.1.3.1: The student understands that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation. Also covers: SC.F.1.3.2, SC.F.1.3.4, SC.F.1.3.6, SC.H.2.3.1

Scan *the headings in Section 2. Read the headings and examine the illustrations. Write three questions that come to mind.*

1. _____

2. _____

3. _____

Review Vocabulary

Use your book or a dictionary to define muscle.

muscle _____

_____

New Vocabulary

Use your book to define the following terms. Then write a sentence for each term.

voluntary muscle _____

_____

_____

involuntary muscle _____

_____

_____

tendon _____

_____

_____

Academic Vocabulary

Use a dictionary to define voluntary.

voluntary _____

_____

Name _____ **Date** _____

Section 2 The Muscular System (continued)

Main Idea

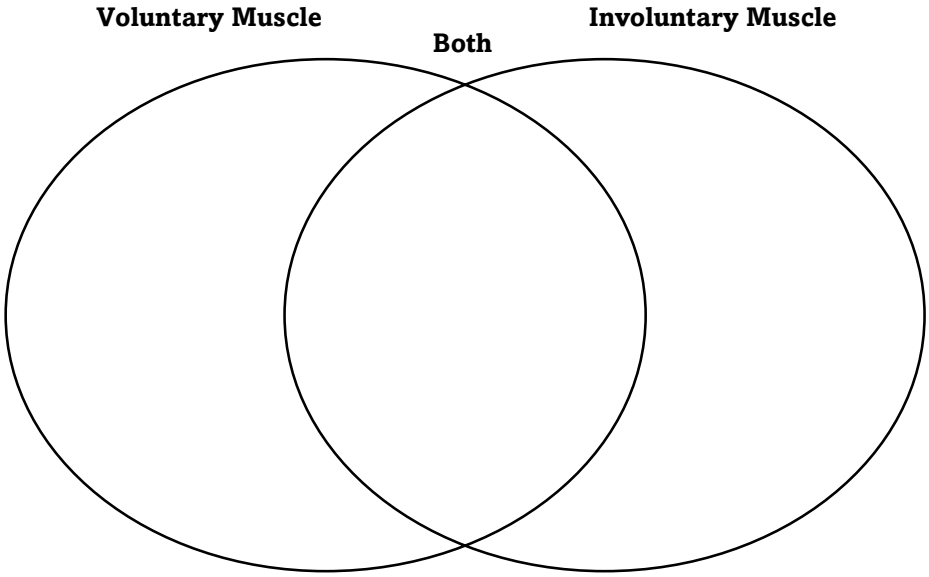
Details

Movement of the Human Body

I found this information on page _____.

Compare and contrast *movements of* **voluntary** *and* **involuntary** *muscles by using the terms provided to complete the Venn diagram.*

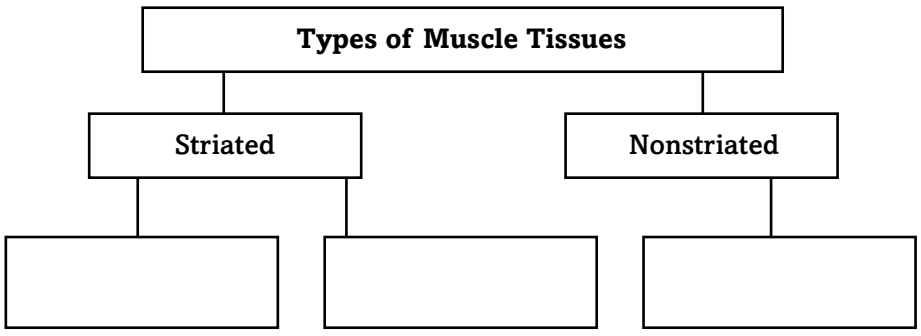
- able to relax
- controlled consciously
- able to contract
- cannot control consciously
- provides force for movement
- face muscle
- stomach muscle



Classification of Muscle Tissue

I found this information on page _____.

Classify *the types of muscle tissues inthe graphic organizer.*



Name _____ **Date** _____

Section 2 The Muscular System (continued)

Main Idea

Working Muscles

I found this information on page _____.

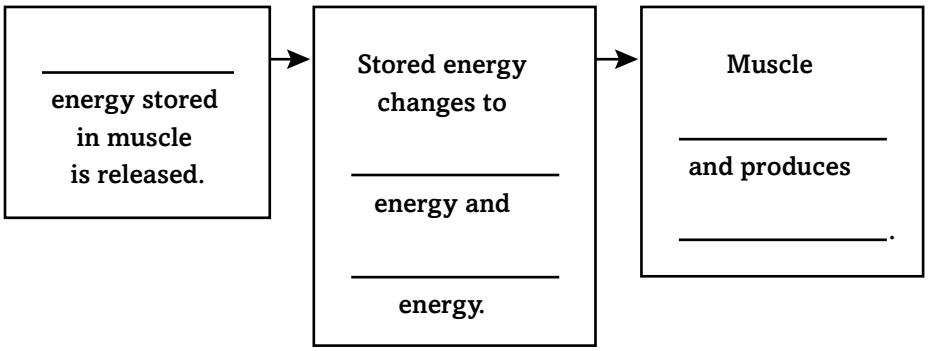
I found this information on page _____.

Details

Complete ***the following paragraph about how muscles work by filling in the missing words or phrases.***

Muscles work together in _____ so that your body can move. As one muscle _____, the other _____. Muscles _____ push; they always _____. When the muscles on the back of your upper leg contract, they _____ and pull your lower leg back and up. When you straighten your leg, the muscles on the back of your upper leg _____ and lengthen, and the muscles on the front of your upper leg _____.

Analyze ***how energy is changed during the contraction of muscle by completing the graphic organizer below.***



Synthesize It

Explain why a runner may have difficulty walking steadily after a long race.

_____

_____

_____

_____

Name _____ **Date** _____

Support, Movement, and Responses

Section 3 The Skeletal System

Benchmarks—SC.F.1.3.1: The student understands that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation. Also covers: SC.1.3.2, SC.F.1.3.3, SC.F.1.3.4, SC.F.1.3.6

Predict *three things that will be discussed in Section 3. Read the section's headings to help you make your predictions.*

1. _____
2. _____
3. _____

Review Vocabulary

Define skeleton.

skeleton _____

_____

New Vocabulary

Find a sentence in Section 3 that includes each vocabulary term.

periosteum _____

_____

cartilage _____

_____

joint _____

_____

ligament _____

_____

Academic Vocabulary

Use a dictionary to define internal.

internal _____

_____

Name _____ **Date** _____

Section 3 The Skeletal System (continued)

Main Idea

Details

Functions of Your Skeletal System

I found this information on page _____.

Summarize *the functions of the* skeletal system *on the lines below.*

1. _____
2. _____
3. _____
4. _____
5. _____

Bone Structure

I found this information on page _____.

Distinguish compact bone *from* spongy bone *by identifying a characteristic and the importance of each type of bone.*

Type of Bone	Characteristic	Importance

I found this information on page _____.

Create *a graphic organizer to identify five characteristics of* cartilage *that make it important in joints.*

Name _____ **Date** _____

Section 3 The Skeletal System (continued)

Main Idea

Details

Bone Formation

I found this information on page _____.

Compare *the roles of* osteoblasts *and* osteoclasts *in the formation and breakdown of bone tissue.*

Osteoblasts _____

_____

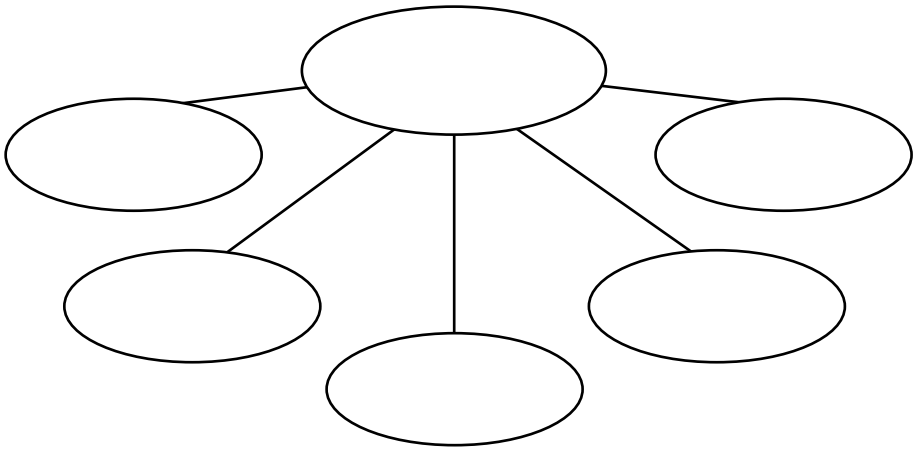
Osteoclasts _____

_____

Joints

I found this information on page _____.

Organize *the different types of joints in a graphic organizer.*



Your Body's Simple Machines–Levers

I found this information on page _____.

Model *the three types of levers found in the body by providing simple drawings to illustrate the positions of the fulcrum, effort force, and load in each type.*

first-class lever	second-class lever	third-class lever

Name _____ **Date** _____

Support, Movement, and Responses

Section 4 The Nervous System

Benchmarks—SC.F.1.3.1: The student understands that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation. Also covers: SC.F.1.3.4, SC.F.1.3.5, SC.F.1.3.6, SC.F.1.3.7, SC.H.1.3.2, SC.H.1.3.4, SC.H.1.3.5, SC.H.1.3.6, SC.H.2.3.1

Scan *the headings in Section 3 to identify the body's senses.*

1. _____
2. _____
3. _____
4. _____
5. _____

Review Vocabulary

Define homeostasis.

homeostasis _____

_____

New Vocabulary

Scan *within the section for bold words and their meanings. Then write the correct term next to its definition.*

_____ nerve cell

_____ small space in which an impulse crosses from one neuron to another

_____ brain and spinal cord

_____ all of the nerves that connect the brain and spinal cord to other body parts

Academic Vocabulary

Use a dictionary to define **adjust**.

adjust _____

_____

Name _____ **Date** _____

Section 4 The Nervous System (continued)

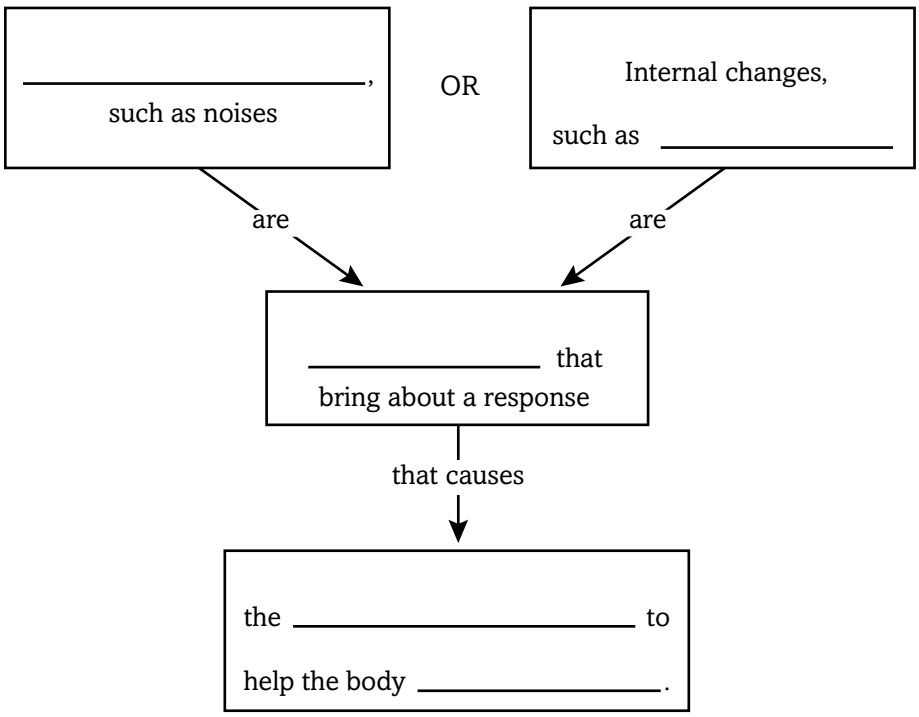
Main Idea

Details

How the Nervous System Works

I found this information on page _____.

Complete *the graphic organizer below to illustrate how the* nervous system *acts as a control system for the body.*



Nerve Cells

I found this information on page _____.

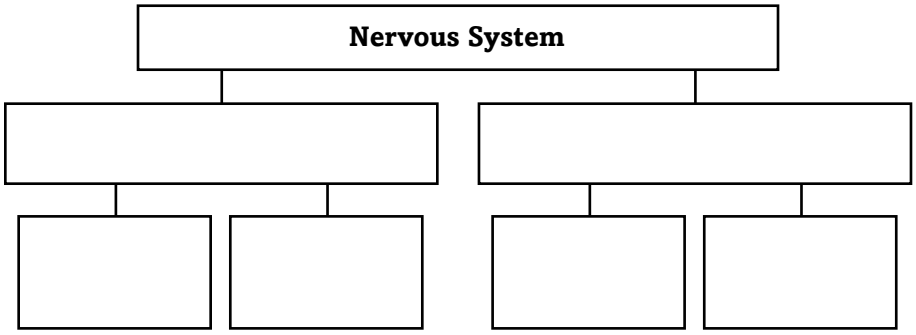
Sequence *the structures of a* neuron *in the order in which an impulse travels.*

1. _____ **2.** _____ **3.** _____

The Division of the Nervous System

I found this information on page _____.

Organize *the parts of the* nervous system *in this graphic organizer.*



Name _____ **Date** _____

Section 4 The Nervous System (continued)

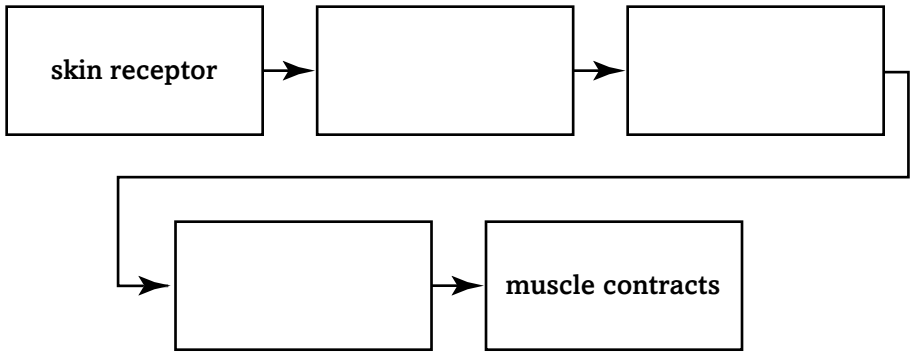
Main Idea

Details

Safety and the Nervous System

I found this information on page _____.

Sequence *the reflex arc by tracing the path of an* impulse, *for example after a person touches a hot object.*



The Senses

I found this information on page _____.

Identify *the sensory organs and their* receptors *for each sense.*

Sense	Sensory Organ	Sensory Receptors
Smell		
Taste		
Vision		
Hearing		

Drugs Affect the Nervous System

I found this information on page _____.

Summarize *the effects of* depressants *and* stimulants *on the body.*

1. Depressants _____

_____

2. Stimulants _____

_____

CONNECT IT

Evaluate how alcohol use could affect the ability of a person riding a bicycle.

_____

_____

_____

Name _____ **Date** _____

Support, Movement, and Responses

Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Support, Movement, and Responses	After You Read
• Your skin is the largest organ of your body.	
• No matter how still you might be, some muscles in your body are always moving.	
• Living bone is an organ made of several different tissues.	
• The basic working units of the nervous system are nerve cells.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **Identify three things that you learned about body systems.**

_____

_____

_____

Name _____ **Date** _____

Digestion, Respiration, and Excretion

Sunshine State Standards—SC.F.1: The student describes patterns of structure and function in living things.

Before You Read

Preview the chapter title, the section titles, and the section headings. List at least one idea for each section in each column.

K What I know	W What I want to find out

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Write a paragraph describing what you do to help your body recover after an active game.

Name _____ **Date** _____

Digestion, Respiration, and Excretion

Section 1 The Digestive System

Benchmarks—SC.F.1.3.1: The student understands that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation. Also covers: SC.H.2.3.1

Scan *the title and headings in Section 1. Predict three topics that might be discussed in this section.*

1. _____

2. _____

3. _____

Review Vocabulary

Write an original sentence to show the scientific meaning of the word bacteria.

bacteria _____

New Vocabulary

Find a sentence in Section 1 that uses each vocabulary term or a form of the term.

nutrient _____

_____

enzyme _____

_____

peristalsis _____

_____

chyme _____

_____

villi _____

_____

Academic Vocabulary

Use a dictionary to define chemical *as an adjective.*

chemical _____

Name _____ **Date** _____

Section 1 The Digestive System (continued)

Main Idea

Functions of the Digestive System

I found this information on page _____.

Details

Sequence *the steps of the digestive process. Identify what occurs during each step.*

Step: _____

What happens: _____

↓

Step: Digestion

What happens: _____

Chemical: _____

Mechanical: _____

↓

Step: _____

What happens: _____

↓

Step: _____

What happens: _____

Enzymes

I found this information on page _____.

Summarize *how enzymes are important by completing the statements below.*

Enzymes _____ and help you digest _____.

They are produced in _____

_____.

Enzymes also are important because they _____

_____ and

_____.

Name _____ **Date** _____

Section 1 The Digestive System (continued)

Main Idea	Details
Organs of the Digestive System *I found this information on page _____.*	**Model and label** *the organs involved in digestion. Circle the labels of organs that are part of the digestive tract.*
Bacteria Are Important *I found this information on page _____.*	**Identify** *two ways bacteria in the digestive system help the body.* **1.** _____ _____ **2.** _____ _____

SUMMARIZE IT

Suppose you eat a sandwich that provides protein, carbohydrates, and fat. Describe what happens to the sandwich as it moves through your digestive system.

_____

_____

_____

_____

Name _____ **Date** _____

Digestion, Respiration, and Excretion

Section 2 Nutrition

Benchmarks—SC.F.1.3.5: The student explains how the life functions of organisms are related to what occurs within the cell; SC.H.2.3.1: The student recognizes that patterns exist within and across systems.

Scan *the illustrations in Section 2. Write three questions that come to mind. As you read, look for answers to your questions.*

1. _____

2. _____

3. _____

Review Vocabulary

Define molecule *to show its scientific meaning.*

molecule _____

_____

New Vocabulary

Use your book to define the following terms.

amino acid _____

_____

carbohydrate _____

_____

vitamin _____

_____

mineral _____

_____

Academic Vocabulary

Use a dictionary to define source. *Then write an original sentence using the term.*

source _____

_____

_____

Name _____ **Date** _____

Section 2 Nutrition (continued)

Main Idea

Details

Why do you eat?

I found this information on page _____.

Complete *the paragraph to summarize the importance of food.*

Food provides _____.

The _____ of food is its most important quality, but many people choose food based on _____ and _____.

Classes of Nutrients

I found this information on page _____.

Identify *the 6 major classes of nutrients.*

1. _____ **3.** _____ **5.** _____

2. _____ **4.** _____ **6.** _____

Summarize *why proteins are important nutrients.*

_____

_____

I found this information on page _____.

Organize *information about the 3 types of carbohydrates.*

Type	Food Sources	Use in Body
Sugar		
Starch		
Fiber		

I found this information on page _____.

Summarize *four functions that fat has in the body.*

1. _____

2. _____

3. _____

4. _____

Name _____ **Date** _____

Section 2 Nutrition (continued)

Main Idea

Details

I found this information on page _____.

Distinguish ***between*** **water-soluble** ***and*** **fat-soluble vitamins.**

Water-Soluble Vitamins	Fat-Soluble Vitamins

I found this information on page _____.

Label ***each description with the mineral it describes.***

_____ helps clot blood and maintain strong teeth and bones.

_____ helps muscle contraction.

_____ allows oxygen to be transported by red blood cells.

Food Groups

I found this information on page _____.

Model ***serving sizes for different food categories.***

Group	Recommended Servings per Day	Examples of 1 Serving Size
Bread and cereal		
Fruits		
Vegetables		
Milk, yogurt, or cheese		
Meat, beans, and eggs		

Connect It

Plan a daily menu that provides the recommended servings from each food group. Identify some nutrients that each food in your menu provides.

_____

_____

_____

Name _____ **Date** _____

Digestion, Respiration, and Excretion

Section 3 The Respiratory System

Benchmarks—SC.F.1.3.1: The student understands that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation. Also covers: SC.F.1.3.4, SC.F.1.3.5, SC.G.1.3.1

Scan *Section 3 using the checklist below.*

- ☐ Read all headings.
- ☐ Read all bold words.
- ☐ Look at each illustration.
- ☐ Think about what you already know about breathing.

Write two predictions you have for subjects that will be covered in this section.

1. _____

2. _____

Review Vocabulary

Define diaphragm *as it relates to the respiratory system.*

diaphragm _____

_____

New Vocabulary

Write the vocabulary term that matches each definition.

_____ tiny, thin-walled sacs at the end of bronchioles

_____ air-conducting tube that connects the larynx with the bronchi

_____ airway to which the vocal cords are attached

_____ two short tubes that carry air into the lungs

Academic Vocabulary

Read the sentence below. Analyze what **coordinate** ***means in this sentence.***

Your brain coordinates the movement of the muscles in your throat, tongue, cheeks, and lips when you talk.

coordinate _____

_____

Name _____ **Date** _____

Section 3 The Respiratory System (continued)

Main Idea	Details
Functions of the Respiratory System *I found this information on page _____.*	**Sequence** *the process of breathing and cellular respiration.*

Breathing in brings oxygen into the body.

↓

Blood _____.

↓

Cells _____.

↓

Cells produce carbon dioxide and water as waste.

↓

Blood _____.

↓

Breathing out _____.

Organs of the Respiratory System

I found this information on page _____.

Create *a drawing of the respiratory system. Label the* nasal cavity, larynx, pharynx, trachea, lungs, bronchi, *and* alveoli. *Write a caption explaining the function of each part of the system.*

Name _____ **Date** _____

Section 3 The Respiratory System (continued)

Main Idea

Details

Why do you breathe?

I found this information on page _____.

Analyze *how carbon dioxide in the blood affects breathing rate.*

_____

_____

Model *the role of the diaphragm in breathing. Make one diagram of the lungs and diaphragm for when a person inhales and one for exhaling. Use arrows to show how the lungs and diaphragm move.*

Diseases and Disorders of the Respiratory System

I found this information on page _____.

Classify *respiratory diseases and disorders. Complete the table.*

Disease or Disorder	Cause or Contributing Factors
Respiratory infections	
Chronic bronchitis	
Lung cancer	
Asthma	

Synthesize It

Describe how emphysema affects cellular respiration and cell function.

_____

_____

_____

Name _____ **Date** _____

Digestion, Respiration, and Excretion

Section 4 The Excretory System

Benchmarks—SC.F.1.3.1: The student understands that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation. Also covers: SC.F.1.3.4, SC.H.1.3.5, SC.H.1.3.6, SC.H.3.3.5, SC.H.2.3.1

Read *the* What You'll Learn *statements for Section 4. Rewrite each statement as a question. As you read, look for the answers to your questions.*

1. _____

_____

2. _____

_____

3. _____

_____

Review Vocabulary

Define capillary *to show its scientific meaning.*

capillary _____

New Vocabulary

Use your book to define the following terms.

nephron _____

ureter _____

bladder _____

_____

Academic Vocabulary

Use a dictionary to define eliminate. *Then rewrite the following sentence, substituting the meaning you found for the word* eliminate.

You eliminate some salts when you sweat.

eliminate _____

_____

Name _____ **Date** _____

Section 4 The Excretory System (continued)

Main Idea

Details

Functions of the Excretory System

I found this information on page _____.

Summarize *the ways in which the body excretes, or removes, waste. Complete the table to show what each body system excretes.*

Excretion	
Digestive System	Respiratory System
Skin	Urinary System

Analyze *the importance of excretion by completing the sentence.*

If the body did not excrete wastes, _____

_____

The Urinary System

I found this information on page _____.

Summarize *the function of each part of the urinary system.*

Kidneys: _____

Renal arteries: _____

Renal veins: _____

Ureters: _____

Bladder: _____

Urethra: _____

Name _____ **Date** _____

Section 4 The Excretory System (continued)

Main Idea

I found this information on page _____.

Details

Sequence ***the steps of filtration in the kidneys.***

1.	Blood enters the kidneys through the renal artery.
2.	
3.	
4.	
5.	
6.	The liquid left behind flows into collecting tubules and then into ureters.

Urinary Diseases and Disorders

I found this information on page _____.

Identify ***the effects of kidney failure.***

_____

_____

_____

_____

Synthesize It

Identify some effects of excretory system malfunction.

_____

_____

_____

_____

_____

Name _____ **Date** _____

Digestion, Respiration, and Excretion

Chapter Wrap-Up

Review the ideas you listed in the table at the beginning of the chapter. Cross out any incorrect information in the first column. Then complete the table by filling in the third column. How do your ideas compare with those you provided at the beginning of the chapter?

K What I know	W What I want to find out	L What I learned

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT

Identify the three most important ideas from this chapter.

_____

_____

_____

_____

Name _____ **Date** _____

Circulation and Immunity

Sunshine State Standards—SC.F.1: The student describes patterns of structure and function in living things. Also covers: SC.G.1, SC.H.2

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	Circulation and Immunity
	• All blood cells are the same.
	• Your heart is an organ made of muscle tissue.
	• White blood cells help your body fight disease.
	• Washing a small wound with soap and water is helpful in preventing an infection.

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Write three questions you have about blood, circulation, or how diseases are spread.

Name _____ **Date** _____

Circulation and Immunity

Section 1 Blood

Benchmarks—SC.F.1.3.3: The student knows that in multicellular organisms cells grow and divide to make more cells in order to form and repair various organs and tissues. Also covers: SC.F.1.3.1, SC.F.1.3.2, SC.F.1.3.4, SC.F.1.3.5, SC.F.1.3.6, SC.H.1.3.1, SC.H.3.3.6

Scan *Section 1 of your book. Write two facts you discovered about blood while scanning the section.*

1. _____

2. _____

Review Vocabulary

Define diffusion *to show its scientific meaning.*

diffusion _____

_____

_____

New Vocabulary

Use your book or a dictionary to define the following terms.

plasma _____

_____

hemoglobin _____

_____

platelet _____

_____

Academic Vocabulary

Use a dictionary to define the term factor. *Find a sentence in the section in which the word is used and write the sentence below.*

factor

Definition: _____

_____

Sentence: _____

_____

Name _____ **Date** _____

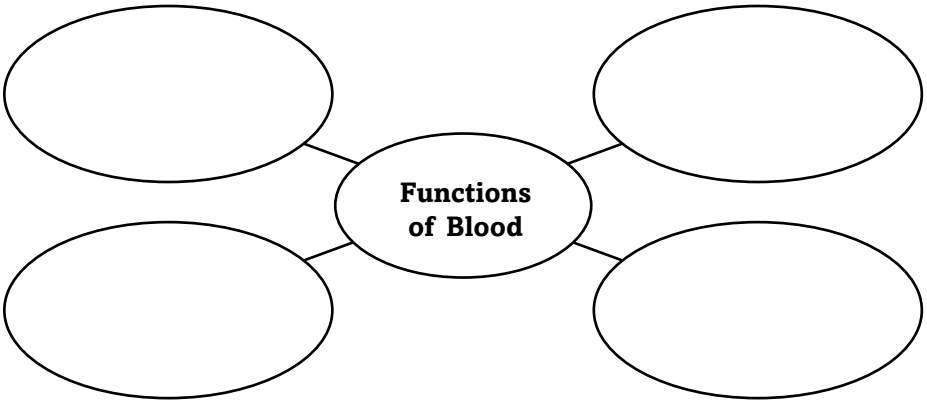
Section 1 Blood (continued)

Main Idea	Details

Functions of Blood

I found this information on page _____.

Organize *information about the* functions of blood *by completing the graphic organizer.*



Parts of Blood

I found this information on page _____.

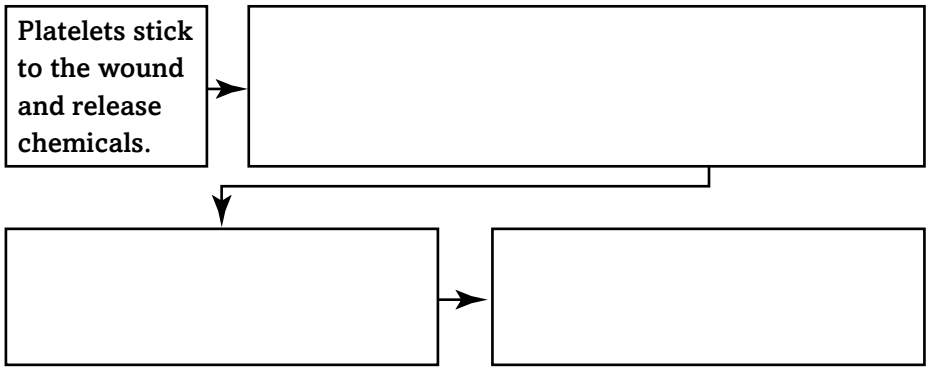
Compare *the* parts of blood *by completing the chart.*

Parts of Blood	
Part	**Function**
Plasma	
Red blood cells	
White blood cells	
Platelets	

Blood Clotting

I found this information on page _____.

Sequence *events that happen as a cut begins to heal.*



Name _____ **Date** _____

Section 1 Blood (continued)

Main Idea

Details

Blood Types

I found this information on page _____.

Define antigens *and* antibody.

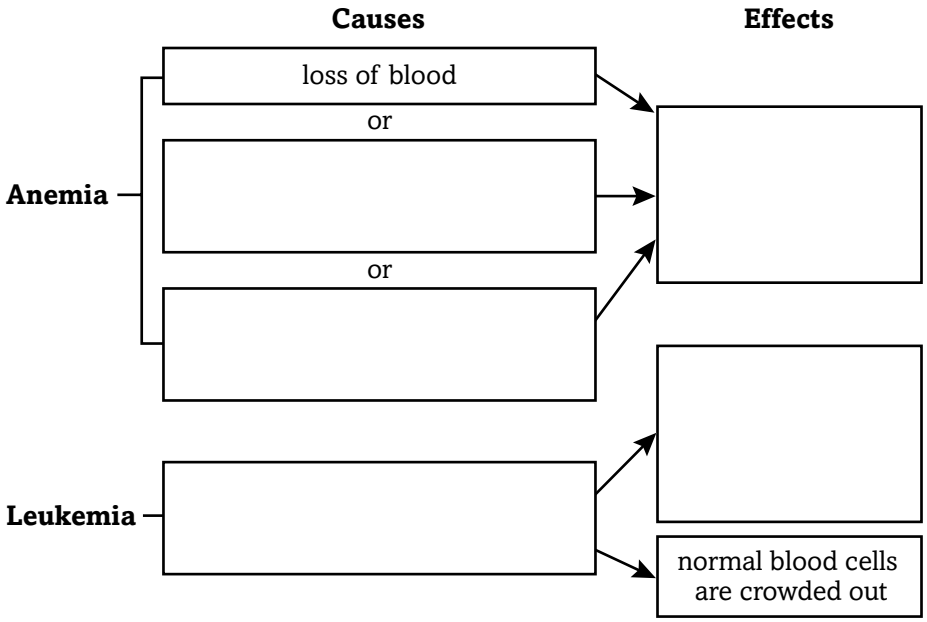
Antigens: _____

Antibody: _____

Diseases of Blood

I found this information on page _____.

Organize *information about the causes and effects of diseases of the blood.*



CONNECT IT

Your aunt needs a blood transfusion. She has type AB2 blood. You have type O1 blood. Can you donate blood to her? Explain.

Name _____ **Date** _____

Circulation and Immunity

Section 2 Circulation

Benchmarks—SC.H.2.3.1: The student recognizes that patterns exist within and across systems.
Also covers: SC.F.1.3.1, SC.F.1.3.4

Preview *Section 2 by reading the* What You'll Learn *statements. Rewrite them as questions. Answer these questions as you read.*

1. _____

_____

2. _____

_____

3. _____

_____

4. _____

_____

Review Vocabulary

Define tissue *using its scientific meaning.*

tissue _____

New Vocabulary

Match the correct vocabulary term with its definition.

_____ blood vessel that connects arteries and veins

_____ blood vessel that carries blood away from the heart

_____ blood vessel that carries blood to the heart

_____ fluid that has diffused into the lymphatic capillaries

Academic Vocabulary

Use a dictionary to define the term **constant** *as it is used in the following sentence.*

This message from the brain helps keep blood pressure *constant* within your arteries so that enough blood reaches all organs and tissues in your body.

constant _____

_____

Name _____ **Date** _____

Section 2 Circulation (continued)

Main Idea — Details

The Heart

I found this information on page _____.

Complete *the paragraph describing the* **heart.**

The heart is a(n) _____ made of _____ tissue. It is located behind the _____ and between the _____. The heart has _____. The upper chambers are called the _____ and _____. The lower chambers are called the _____ and _____.

Blood Vessels

I found this information on page _____.

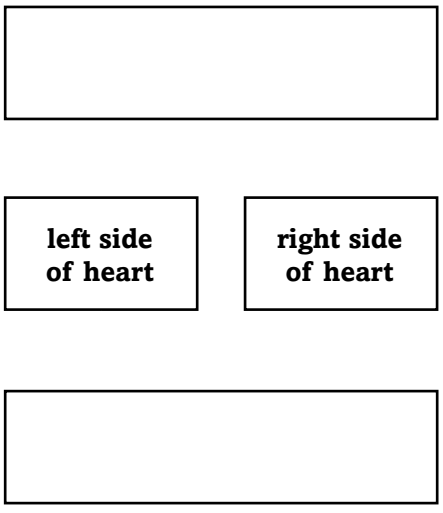
Compare **blood vessels** ***by describing them in the table below.***

Types of Blood Vessels	
Vessel	**Description**
Arteries	
Veins	
Capillaries	

Types of Circulation

I found this information on page _____.

Label ***the diagram, and add arrows to trace the flow of blood between the heart, lungs, and body.***



Name _____ **Date** _____

Section 2 Circulation (continued)

Main Idea	Details

Blood Pressure

I found this information on page _____.

Summarize *how* blood pressure *is maintained by the body.*

_____

_____

_____

Cardiovascular Disease

I found this information on page _____.

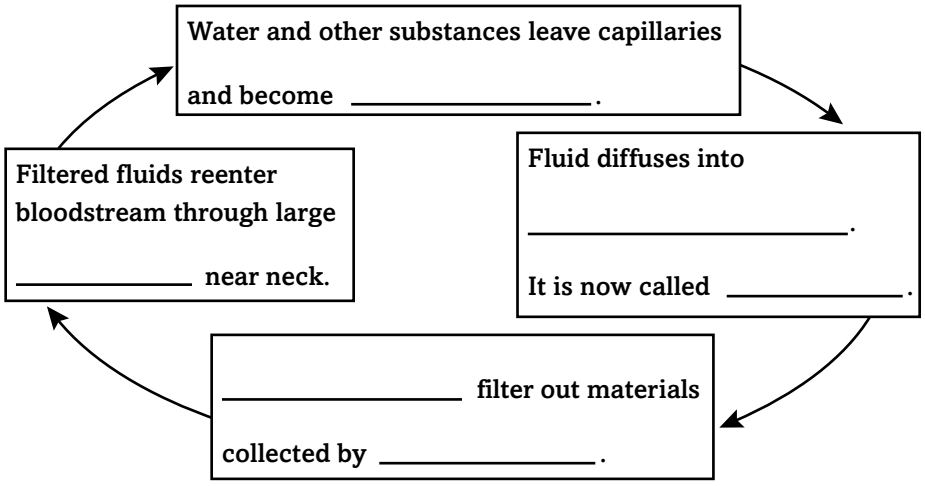
Organize *information about* cardiovascular disease *in the chart.*

Cardiovascular disease		
Disease	Atherosclerosis	Hypertension
Description		
Effect		

Functions of the Lymphatic System

I found this information on page _____.

Model *the pathway of fluid through the circulatory and lymphatic systems by completing the cycle chart below.*



CONNECT IT Identify habits that may decrease or increase your chances of developing atherosclerosis and hypertension.

_____

_____

Name _____ **Date** _____

Circulation and Immunity

Section 3 Immunity

Benchmarks—SC.F.1.3.6: The student knows that the cells with similar functions have similar structures, whereas those with different structures have different functions. Also covers: SC.F.1.3.1, SC.F.1.3.6, SC.H.2.3.1

Skim *through Section 3 of this chapter. Identify two things you think you will learn in this section.*

1. _____

2. _____

Review Vocabulary

Define *the word* enzyme *using its scientific meaning.*

enzyme _____

_____

New Vocabulary

Use your book or a dictionary to define the new vocabulary terms.

passive immunity _____

_____

antibody _____

_____

active immunity _____

_____

antigen _____

_____

Academic Vocabulary

Use a dictionary to define the word passive *using its scientific meaning. Write a sentence from your book that uses the word.*

passive

Definition: _____

_____

Sentence: _____

_____

Name _____ **Date** _____

Section 3 Immunity (continued)

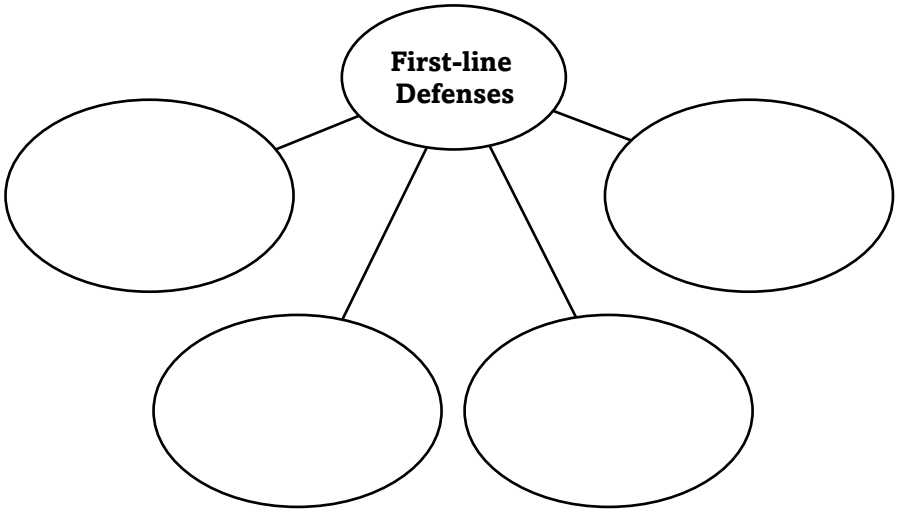
Main Idea

Details

Lines of Defense

I found this information on page _____.

Organize *information about the body's first-line defenses against disease.*



I found this information on page _____.

Summarize *two ways your skin protects you from disease.*

1. _____

_____

2. _____

_____

_____

I found this information on page _____.

Compare and contrast *characteristics of the* three systems of internal first-line defenses.

Internal First-line Defenses		
Respiratory System	Digestive System	Circulatory System

Name _____ **Date** _____

Section 3 Immunity (continued)

Main Idea

Lines of Defense

I found this information on page _____.

I found this information on page _____.

Details

Sequence *events that occur when tissue becomes inflamed.*

Pathogens infect tissue and cause it to be inflamed.

↓

↓

↓

↓

White blood cells surround and engulf pathogenic bacteria.

Summarize *the 4 steps of response to disease-causing organisms.*

1. Recognition: _____

_____

2. Mobilization: _____

_____

3. Disposal: _____

_____

4. Immunity: _____

_____

CONNECT IT

A woman had chicken pox when she was a child. Explain how this affects her susceptibility to chicken pox as an adult.

_____

_____

_____

Name _____ **Date** _____

Circulation and Immunity

Section 4 Diseases

Benchmarks—SC.G.1.3.1: The student knows that viruses depend on other living things.
Also covers: SC.H.1.3.1, SC.H.1.3.2, SC.H.1.3.4, SC.H.1.3.5, SC.H.1.3.6, SC.H.3.3.5

Skim *Section 4 and predict four topics that you will study in this section.*

1. _____

2. _____

3. _____

4. _____

Review Vocabulary

Define **virus** *using its scientific meaning.*

virus _____

_____

New Vocabulary

Write the correct vocabulary term next to its definition.

_____ process in which a liquid is heated to a temperature that kills most bacteria

_____ disease caused by a virus, bacterium, fungus, or protist that is spread from one person to another

_____ disease that is not caused by a pathogen

_____ substance that causes an allergic reaction

Academic Vocabulary

Use a dictionary to define the word **enable**. *Rewrite the following sentence, substituting the new meaning.*

Insulin is a hormone that enables glucose to pass from the bloodstream into your cells.

enable _____

_____

_____

Name _____ **Date** _____

Section 4 Diseases (continued)

Main Idea

Details

Disease in History

I found this information on page _____.

Summarize *the discoveries about disease made by these scientists.*

Louis Pasteur: _____

_____

Robert Koch: _____

_____

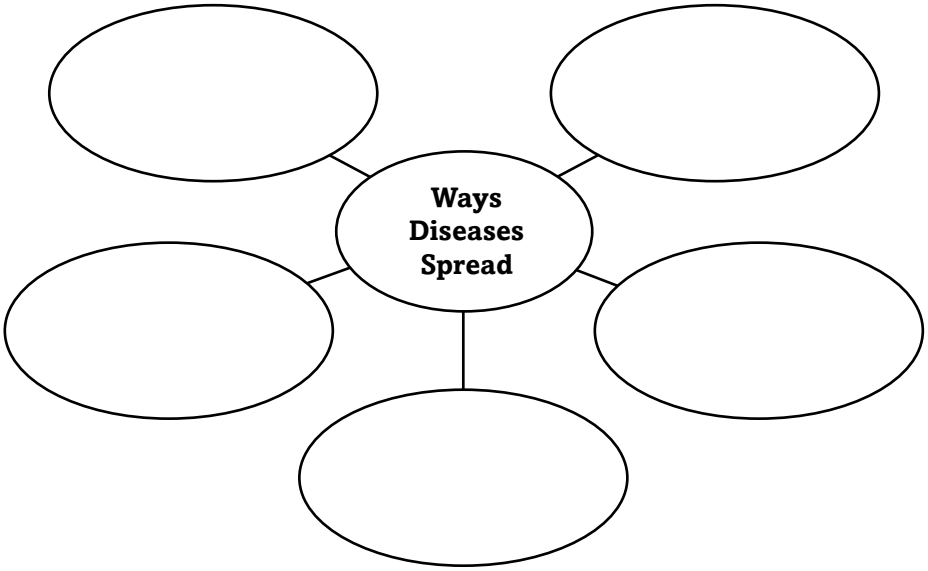
Joseph Lister: _____

_____

Infectious Diseases

I found this information on page _____.

Organize *information on the ways infectious diseases can spread.*



HIV and Your Immune System

I found this information on page _____.

Complete *the following paragraph about AIDS.*

HIV attacks the _____ in the immune system. The virus enters the T cell and _____. When the infected cell _____, it releases more _____. These infect other _____. Soon, _____ cannot produce _____. The immune system is unable to fight HIV or any other _____.

Name _____ **Date** _____

Section 4 Diseases (continued)

Main Idea

Details

Fighting Disease

I found this information on page _____.

Organize *information by listing five ways to prevent infection.*

1. _____

2. _____

3. _____

4. _____

5. _____

Chronic Disease

I found this information on page _____.

Summarize *the characteristics of* allergies *and* diabetes.

	Allergies	Diabetes
Cause		
Effect		

Connect It

Choose one behavior that can help prevent cancer or another chronic disease. Explain how the behavior helps prevent the disease.

_____

_____

_____

_____

_____

_____

Name _____ **Date** _____

Circulation and Immunity Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Circulation and Immunity	After You Read
• All blood cells are the same.	
• Your heart is an organ made of muscle tissue.	
• White blood cells help your body fight disease.	
• Washing a small wound with soap and water is helpful in preventing an infection.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT

After reading this chapter, identify three things you have learned about circulation and immunity.

_____

_____

_____

_____

Name _____ **Date** _____

Ecology

Sunshine State Standards—SC.G.1: The student understands the competitive, interdependent, cyclic nature of living things. Also covers: SC.D.2, SC.G.2, SC.H.2

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	Ecology
	• The biosphere is made up of all of the ecosystems on Earth combined.
	• Different species of organisms live in the same habitat.
	• Energy for most organisms comes from the Sun.
	• A producer relies on prey for its energy.

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Describe how fallen leaves and insects contribute to the survival of frogs in a system.

Name _____ **Date** _____

Ecology

Section 1 What is an ecosystem?

Benchmarks—SC.G.2.3.2: The student knows that all biotic and abiotic factors are interrelated and that if one factor is changed or removed, it impacts the availability of other resources within the systems. Also covers: SC.H.2.3.1, SC.D.2.3.1, SC.D.1.3.4, SC.G.1.3.4, SC.H.1.3.5, SC.H.1.3.7

Skim *Section 1. Predict three things that might be discussed in this section.*

1. _____

_____

2. _____

_____

3. _____

_____

Review Vocabulary **Define** organism *to show its scientific meaning.*

organism _____

_____

New Vocabulary *Use your book to define the following key terms.*

ecosystem _____

_____

ecology _____

_____

biotic factors _____

_____

abiotic factors _____

_____

Academic Vocabulary *Use a dictionary to define* interact *to show its scientific meaning.*

interact _____

Name _____ **Date** _____

Section 1 What is an ecosystem? (continued)

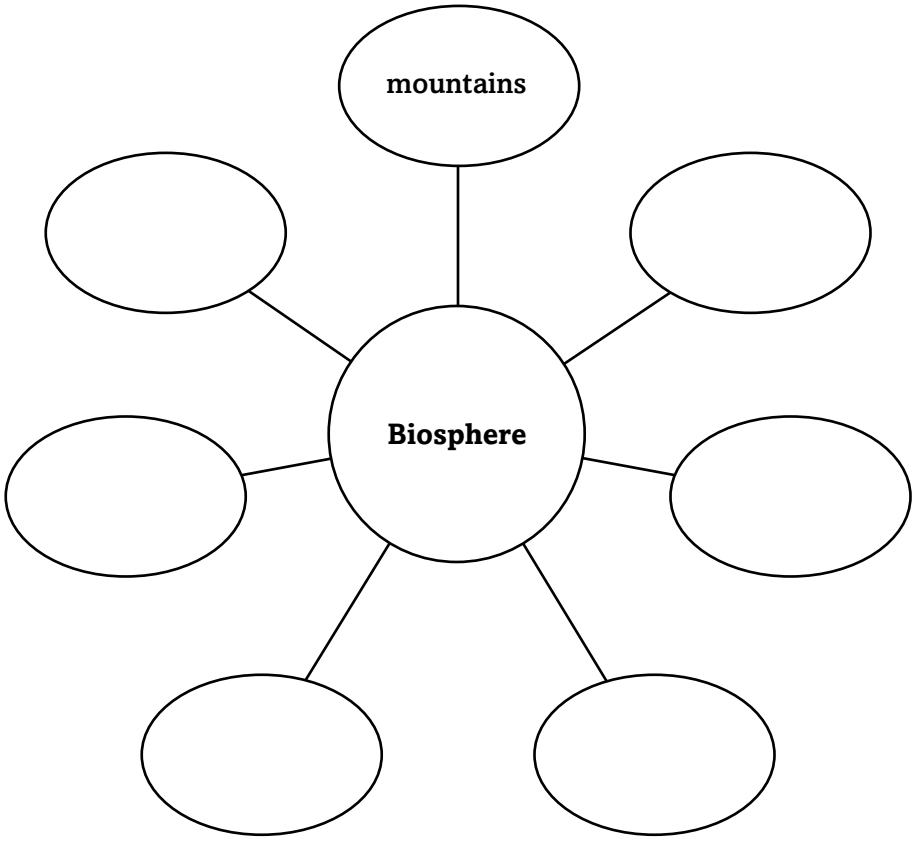
Main Idea

Details

Ecosystems

I found this information on page _____.

Identify *some of the major* ecosystems *that make up the biosphere by completing the graphic organizer below.*



Living Parts of Ecosystems

I found this information on page _____.

Identify *the four key needs of organisms and list them below.*

Key Needs of Organisms
1.
2.
3.
4.

Name _____ **Date** _____

Section 1 What is an ecosystem? (continued)

Main Idea

Details

Nonliving Parts of Ecosystems

I found this information on page _____.

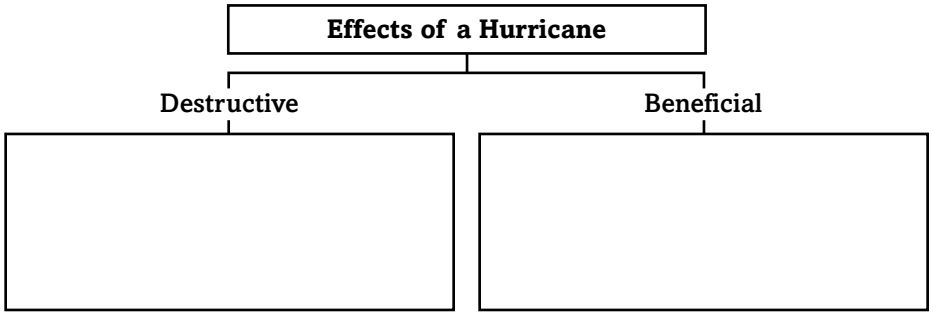
Organize *information about the four nonliving parts of ecosystems. Fill in the chart below, identifying and describing each.*

Nonliving Parts of Ecosystems	
Factor	Description
1. Soil	
2.	
3.	
4.	

A Balanced System

I found this information on page _____.

Summarize *the ways a hurricane may change an ecosystem by completing the diagram below.*



CONNECT IT

A fire sweeps through a forest ecosystem. Describe a destructive effect and a beneficial effect that may result.

_____

_____

_____

_____

Name _____ **Date** _____

Ecology

Section 2 Relationships Among Living Things

Benchmarks—SC.H.2.3.1: The student recognizes that patterns exist within and across systems.
Also covers: SC.1.3.2, SC.G.2.3.3

Skim *Section 2 of your text. Write three questions that come to mind as you read the headings and examine the illustrations.*

1. _____

2. _____

3. _____

Review Vocabulary

Define *the following terms to show their scientific meanings.*

adaptation _____

New Vocabulary

population _____

community _____

limiting factor _____

niche _____

habitat _____

Academic Vocabulary

Use a dictionary to define decline *to show its scientific meaning.*

decline _____

Name _____ **Date** _____

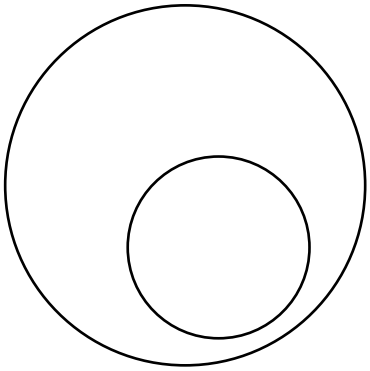
Section 2 Relationships Among Living Things (continued)

Main Idea | **Details**

Organizing Ecosystems

I found this information on page _____.

Complete *the Venn diagram below to represent the relationship between a* **population** *and a* **community.**



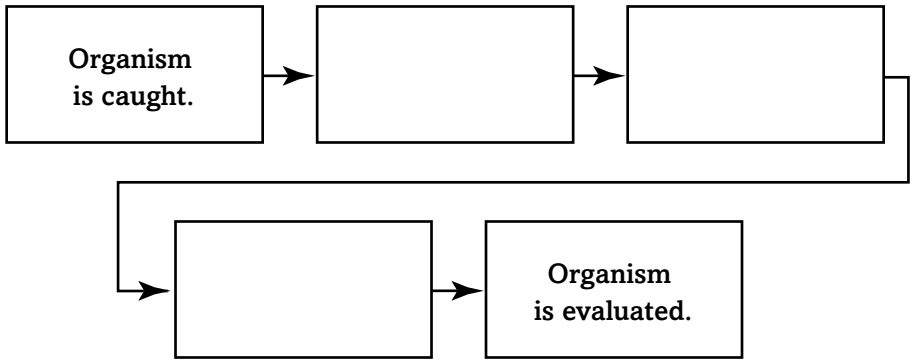
I found this information on page _____.

Summarize ***the characteristics of populations that are studied by ecologists. Complete the sentence.***

The characteristics of a population include the size of the population, _____, and _____.

I found this information on page _____.

Sequence ***the steps in the*** **mark and recapture method** ***of studying populations by completing the flow chart below.***



Populations can also be studied by:

1. _____

2. _____

3. _____

4. _____

Name _____ **Date** _____

Section 2 Relationships Among Living Things (continued)

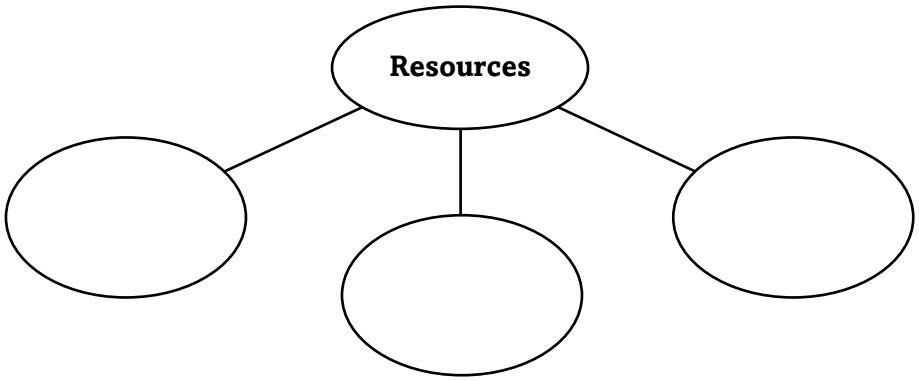
Main Idea

Details

Limits to Populations

I found this information on page _____.

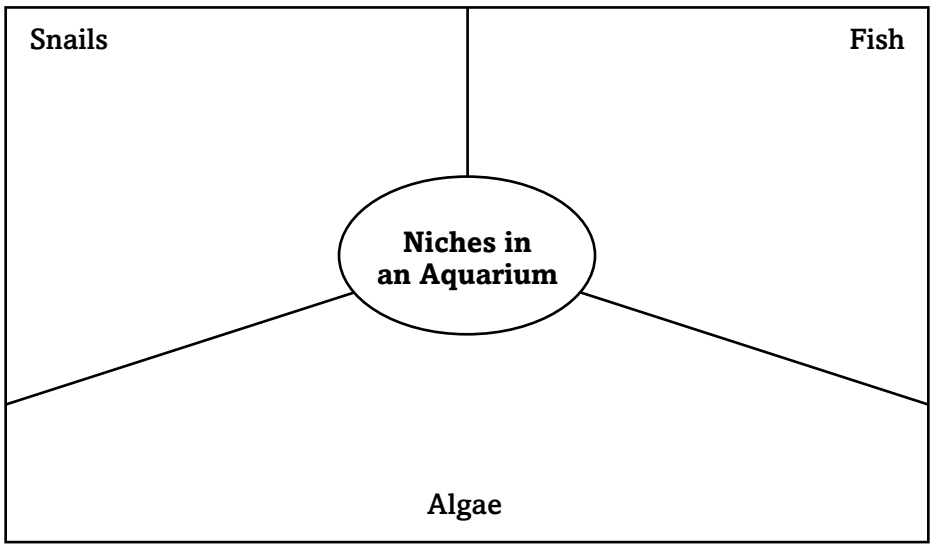
Complete *the graphic organizer below with some of the* resources *for which organisms compete.*



Where and How Organisms Live

I found this information on page _____.

Analyze *the* niches *of snails, fish, and algae in an aquarium. Describe how each organism interacts with the other organisms and the environment.*



Connect It

Describe how carpenter ants might both use resources and serve as a resource in the habitat of an apple tree.

_____

_____

_____

_____

Name _____ **Date** _____

Ecology

Section 3 Energy Through the Ecosystem

Benchmarks—SC.G.1.3.4: The student knows that the interactions of organisms with each other and with the non-living parts of their environments result in the flow of energy and the cycling of matter throughout the system. Also covers: SC.B.1.3.4, SC.B.2.3.1, SC.D.1.3.4, SC.G.1.3.5, SC.G.2.3.2, SC.H.1.3.5, SC.H.1.3.7, SC.H.2.3.1

Scan *the headings in Section 3 of your book. Identify four topics that will be discussed.*

1. _____
2. _____
3. _____
4. _____

Review Vocabulary

Define recycling *to show its scientific meaning.*

recycling _____

_____

New Vocabulary

Use your book to define the following terms. Then use each term in a sentence to show its scientific meaning.

producer _____

_____

predator _____

_____

prey _____

_____

decomposer _____

_____

Academic Vocabulary

Use a dictionary to define sequence *to show its scientific meaning.*

sequence _____

Name _____ **Date** _____

Section 3 Energy Through the Ecosystem (continued)

Main Idea | **Details**

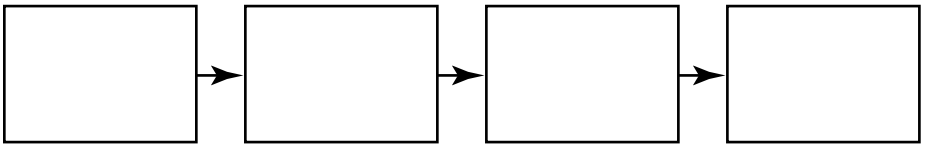
The Flow of Energy

I found this information on page _____.

Organize *the following to show relationships to one another in the* **flow of energy.**

grasshopper sunlight insect-eating bird grass

Flow of Energy



I found this information on page _____.

Summarize ***what happens to available energy as it is transferred through the* food web.**

Because the transfer of energy is _____ 100% efficient, the amount of available energy _____ at each feeding level in the food web.

Interactions in Communities

I found this information on page _____.

Complete ***the table by providing an example of each type of interaction.***

Relationships Among Organisms	
Type of Interaction	**Example**
Both organisms benefit.	
Only one organism benefits.	
One organism benefits, and the other is harmed.	

Name _____ **Date** _____

Section 3 Energy Through the Ecosystem (continued)

Main Idea

Details

Modeling the Flow of Energy

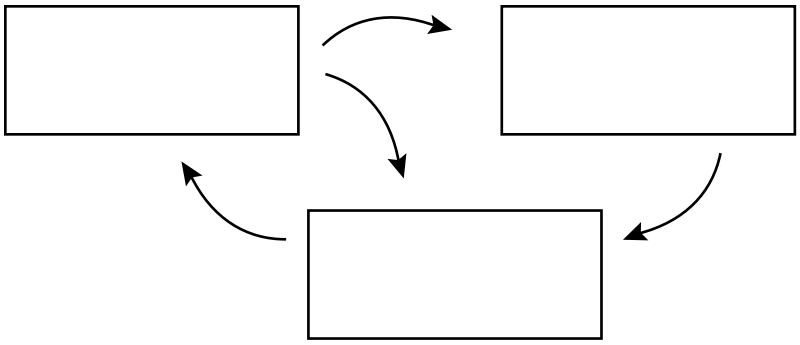
I found this information on page _____.

Model *an* ocean food web *involving the following: the Sun, penguin, krill, whale, orca, plankton, fish, seal, and squid.*

Cycling of Materials

I found this information on page _____.

Complete *the diagram to show the relationship of* consumers, producers, *and* decomposers *to each other in cycling materials through an ecosystem.*



SUMMARIZE IT

Describe the importance of decomposers in an ecosystem.

Name _____ **Date** _____

Tie It Together

Make a Food Web

With a partner, describe a habitat near where you live. Identify as many organisms as you can that share the habitat. Create a food web that shows the flow of energy through the habitat, and then change a biotic factor in the habitat. Describe the effect this change would have on the food web.

Name _____ **Date** _____

Ecology Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Ecology	After You Read
• The biosphere is made up of all of the ecosystems on Earth combined.	
• Different species of organisms live in the same habitat.	
• Energy for most organisms comes from the Sun.	
• A producer relies on prey for its energy.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things that you have learned about ecology.**

_____

_____

_____

_____

Name _____ **Date** _____

Ecosystems

Sunshine State Standards—SC.D.1: The student recognizes that processes in the lithosphere, atmosphere, hydrosphere, and biosphere interact to shape the Earth. Also covers: SC.D.2, SC.G.2, SC.H.2.

Before You Read

Think about the terms and descriptions below. Infer which term most closely matches the description and write it on the line.

	biome ecosystem estuary intertidal zone
_____	community of living organisms interacting with each other and their physical environment
_____	part of the shoreline that is under water at high tide and exposed to the air at low tide
_____	a large geographic area with an interactive environmental community and similar climate
_____	extremely fertile area where a river meets an ocean; contains a mixture of freshwater and saltwater and serves as a nursery for many species

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

What traits might plants on a burning hillside have that enable them to survive?

Name _____ **Date** _____

Ecosystems

Section 1 How Ecosystems Change

Benchmarks—SC.D.1.3.4: The student knows the ways in which plants and animals reshape the landscape. Also covers: SC.H.2.3.1, SC.G.1.3.2

Skim *through Section 1 of your text. Write three things that might be discussed in this section.*

1. _____
2. _____
3. _____

Review Vocabulary

Define *the following key terms to show their scientific meanings.*

ecosystem _____

New Vocabulary

climax community _____

pioneer species _____

succession _____

Academic Vocabulary

stable _____

Name _____ **Date** _____

Section 1 How Ecosystems Change (continued)

Main Idea | **Details**

Ecological Succession

I found this information on page _____.

Sequence *the steps in the succession of a lawn to a climax community. The first one has been completed for you.*

	Succession of a Lawn to Climax Community
1.	The grass would get longer.
2.	
3.	
4.	
5.	

I found this information on page _____.

Organize *information to compare* **primary succession** *with* **secondary succession.**

	Primary Succession	Secondary Succession
	Lava from a volcano	Fire consumes a forest
Land consists of		
Starts with	_____ break down rock and decay, adding _____.	Soil contains _____.
Animals and wind carry		
Plants add		
Wildlife		

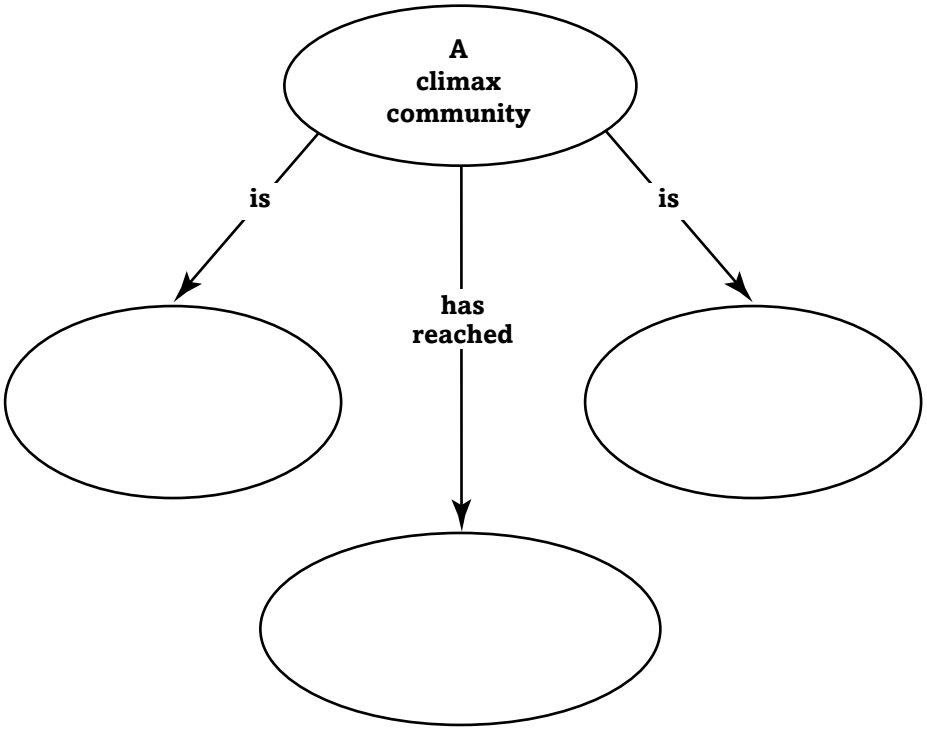
Name _____ **Date** _____

Section 1 How Ecosystems Change (continued)

Main Idea | **Details**

I found this information on page _____.

Complete *the graphic organizer to better understand the characteristics of a* climax community.



I found this information on page _____.

Identify *the three main characteristics of a forest climax community.*

1. _____
2. _____
3. _____

Connect It

Predict the growth of a community in a flooded river basin. Hypothesize whether the succession would be primary succession or secondary succession. Support your answer with facts from your book.

_____

_____

_____

_____

Name _____ **Date** _____

Ecosystems

Section 2 Biomes

Benchmarks—SC.D.2.3.2: The student knows the positive and negative consequences of human action on the Earth's systems. Also covers: SC.G.2.3.2, SC.G.2.3.4, SC.H.1.3.1, SC.H.1.3.4, SC.H.1.3.7, SC.H.2.3.1

I found this information on page _____.

Analyze ***the world map of the seven major land biomes in your book. Infer two factors you think scientists might use to classify biomes of the world.***

1. _____

2. _____

Review Vocabulary

climate

Use the word **climate** ***in a scientific sentence.***

_____

_____

New Vocabulary

Define ***Read the definitions below. Write the key terms on the blanks in the left column.***

_____ most biologically diverse biome

_____ ideal biome for growing crops and raising cattle and sheep

_____ cold, dry, treeless biome with a short growing season and permafrost

_____ biome with thin soil where organisms are adapted to survive extreme conditions

_____ biome containing cone-bearing evergreen trees and dense forests

_____ biome usually having four distinct seasons

Academic Vocabulary

dominate

Use a dictionary to define **dominate** ***as it relates to the chapter.***

_____

_____

Name _____ **Date** _____

Section 2 Biomes (continued)

Main Idea

Major Biomes

I found this information on page _____.

Details

Complete *the comparison chart below using your book and the world map of the seven biomes.*

	Physical Description	Average Precipitation	Temperature	Location	Plant and Animal Life
Tundra		less than 25 cm per year			**Plants:** **Animals:**
Taiga			temperature range: 2 54°C to 21°C		**Plants:** **Animals:**
Temperate Deciduous Forest				eastern US, Europe, parts of Asia and Africa	**Plants:** **Animals:**
Temperate Rain Forest	dense forest with a variety of plants and animals				**Plants:** **Animals:**

Name _____ **Date** _____

Section 2 Biomes (continued)

Main Idea — **Details**

	Physical Description	Average Precipitation	Temperature	Location	Plant and Animal Life
Tropical Rain Forest					4 zones of plant and animal life **Plants:** **Animals:**
Desert				western US and S. America, Africa, parts of Australia and Asia	**Plants:** **Animals:**
Grasslands			mild to hot	prairies—N. America, steppes—Asia, savannas—Africa pampas—S. America	**Plants:** **Animals:**

CONNECT IT **Analyze the information you recorded about biomes. Compare and contrast the tundra with the desert.**

_____

_____

_____

_____

Name _____ **Date** _____

Ecosystems

Section 3 Aquatic Ecosystems

Benchmarks—SC.D.2.3.1: The student understands that the quality of life is relevant to personal experience.
Also covers: SC.D.2.3.2, SC.G.2.3.2, SC.G.2.3.3, SC.G.2.3.4, SC.H.1.3.4, SC.H.1.3.5, SC.H.1.3.6, SC.H.3.3.4

Read the What You'll Learn *objectives of Section 3. Write three questions that come to mind from reading these statements.*

1. _____

2. _____

3. _____

Review Vocabulary

Define *the key terms to show their scientific meanings.*

aquatic _____

_____

New Vocabulary

coral reef _____

_____

wetland _____

_____

Academic Vocabulary

promote _____

_____

Freshwater Ecosystems

I found this information on page _____.

Organize *the four important factors that determine how well a species can survive in an aquatic environment.*

1.
2.
3.
4.

Name _____ **Date** _____

Section 3 Aquatic Ecosystems (continued)

Main Idea

Details

Freshwater Ecosystems

I found this information on page _____.

Compare fast-moving streams *with* slower-moving streams *as you complete the sentences below about* freshwater environments.

Fast-moving Streams

Currents quickly _____

_____.

As water tumbles, air _____.

These streams have clearer _____ and higher

_____.

Slow-moving Streams

Water moves slowly and debris _____.

These environments have higher _____, more

plant _____, and organisms _____

_____.

I found this information on page _____.

Classify *each statement as a characteristic of* **pond ecosystems, lake ecosystems,** *or both. Mark* **P** *for pond,* **L** *for lake, or* **B** *for both ecosystems.*

_____ more plants than flowing water environments

_____ deeper water and colder water temperatures

_____ larger body of water

_____ plankton floating near the surface

_____ ecosystem high in nutrients

_____ small, shallow body of water

_____ lower light levels at depth limit types of organisms

_____ plant growth limited to shallow water near shore

_____ water hardly moves

Name _____ **Date** _____

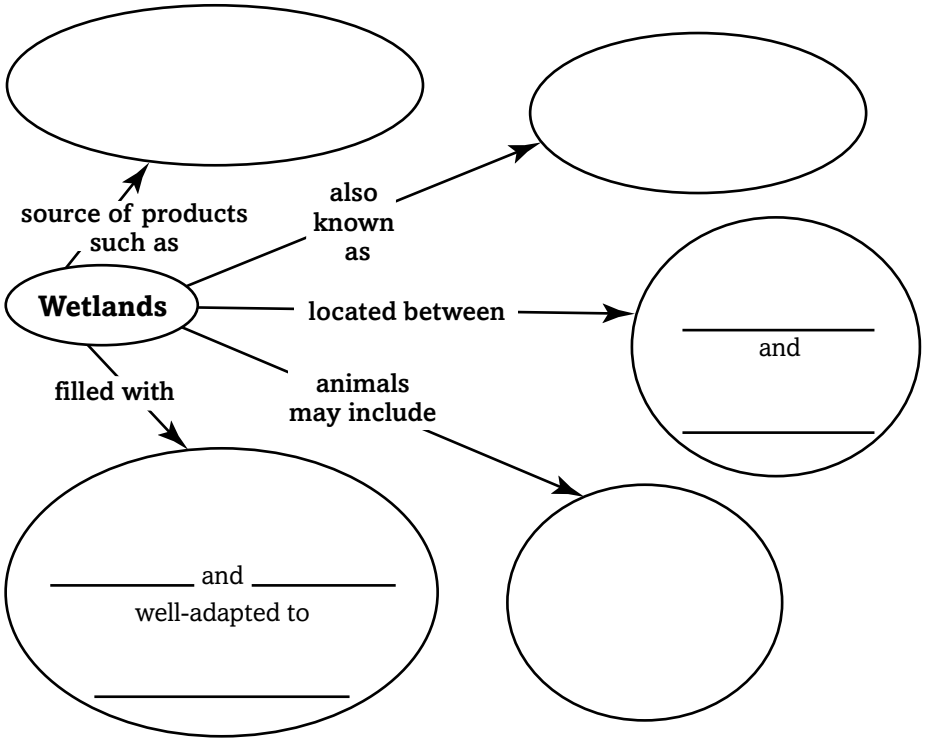
Section 3 Aquatic Ecosystems (continued)

Main Idea	Details

Freshwater Ecosystems

I found this information on page _____.

Organize *information about* wetlands *as you complete the concept map below.*



Saltwater Ecosystems

I found this information on page _____.

Complete *the outline below about* saltwater ecosystems.

I. Coral reef ecosystems are _____

_____.

A. reefs formed by _____

B. damaged by _____

II. Seashores

A. affected by _____ and _____

B. intertidal zone organisms must adapt to _____,

_____, and _____ changes

III. Estuaries

A. contain _____

B. are important for _____

_____

Name _____ **Date** _____

Tie It Together

Interactions within Ecosystems

Select one of the ecosystems discussed in this chapter. You might choose a tundra ecosystem, a rain forest ecosystem, a coral reef ecosystem, or one of the other ecosystems. Take notes about your ecosystem on the lines below. Then, draw a picture of your ecosystem with its animal and plant inhabitants. Show any interactions that you described.

My ecosystem is a(n) _____.

It includes these plants:

_____

_____

It includes these animals:

_____

_____

Its environment includes these conditions:

_____

_____

_____

Interactions between organisms include these:

_____

_____

_____

Interactions between organisms and the environment include these:

_____

_____

_____

_____

Sketch of My Ecosystem

Name _____ **Date** _____

Ecosystems Chapter Wrap-Up

Think about the terms and descriptions below. Write the term that most closely matches the description on the line in front of the description. Compare your previous answers to these.

	biome ecosystem estuary intertidal zone
_____	community of living organisms interacting with each other and their physical environment
_____	part of the shoreline that is under water at high tide and exposed to the air at low tide
_____	a large geographic area with an interactive environmental community and similar climate
_____	extremely fertile area where a river meets an ocean; contains a mixture of freshwater and saltwater and serves as a nursery for many species

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT

After reading this chapter, identify three things you have learned about ecosystems.

_____

_____

_____

_____

_____

Name _____ Date _____

Earth's Energy and Mineral Resources

Sunshine State Standards—SC.D.2: The student understands the need for protection of the natural systems on Earth. Also covers: SC.A.2, SC.G.2

Before You Read

Preview the chapter including section titles and the section headings. Complete the table by listing at least one idea for each of the three sections in each column.

K What I know	W What I want to find out

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Write three ways electricity may be generated at a power plant.

Name _____ **Date** _____

Earth's Energy and Mineral Resources

Section 1 Nonrenewable Energy Resources

Benchmarks—SC.D.2.3.2: The student knows the positive and negative consequences of human action on the Earth's systems. Also covers: SC.A.2.3.3, SC.B.1.3.1, SC.B.2.3.2, SC.D.2.3.1, SC.G.2.3.1, SC.G.2.3.4, SC.H.3.3.4

Scan *Section 1 of your book, using the checklist below.*

- ☐ Read all section titles.
- ☐ Read all boldface words.
- ☐ Look at all of the pictures.
- ☐ Think about what you already know about nonrenewable resources.

Write three facts that you discovered about nonrenewable resources as you scanned this section.

1. _____

2. _____

3. _____

Review Vocabulary

Define fuel.

fuel _____

New Vocabulary

Use your book or a dictionary to define the vocabulary terms.

resource _____

_____

nonrenewable resource _____

_____

conservation _____

_____

Academic Vocabulary

Use a dictionary to define extract.

extract _____

Name _____ **Date** _____

Section 1 Nonrenewable Energy Resources (continued)

Main Idea | **Details**

Energy

I found this information on page _____.

Complete *the paragraph below to describe* **resources** *and* **energy.**

A _____ is any material used to satisfy a need. Most energy resources used to generate electricity are _____. Nonrenewable resources are _____ _____.

Fossil Fuels

I found this information on page _____.

Organize *information about* **fossil fuels** *by completing the outline.*

I. Fossil Fuels

A. Made of _____

B. Formed over _____ of years

C. Include:

1. _____

2. _____

3. _____

D. Used to:

1. Make gasoline for _____

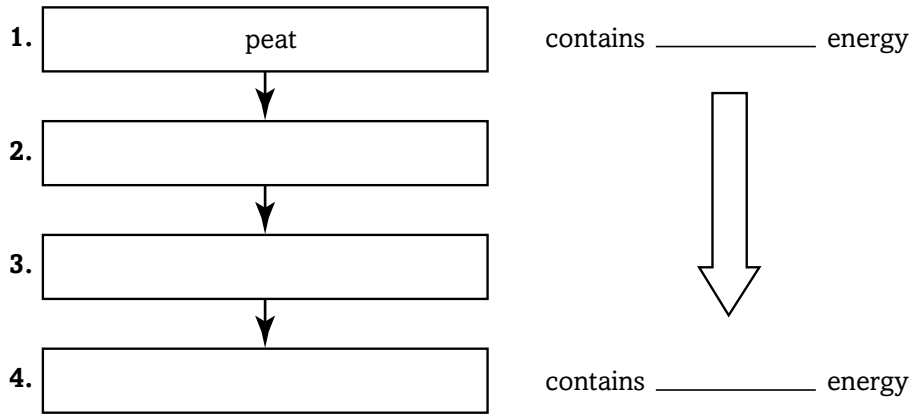
2. Heat _____

3. Generate _____

I found this information on page _____.

Complete *the chart describing the stages of* **coal formation.** *Then identify the change in the amount of energy contained in the fuel.*

Formation of Coal



Name _____ **Date** _____

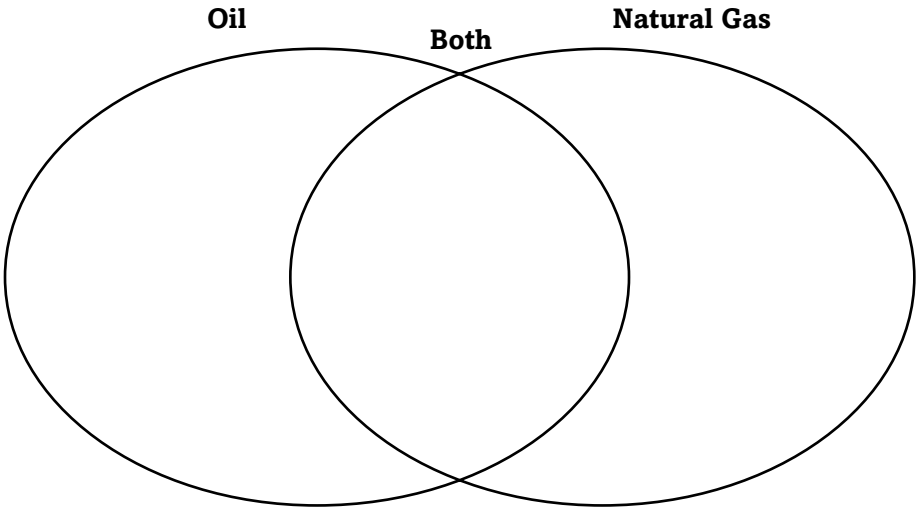
Section 1 Nonrenewable Energy Resources (continued)

Main Idea	Details

Fossil Fuels

I found this information on page _____.

Compare oil *and* natural gas *by completing the Venn diagram with at least nine facts.*



Removing Fossil Fuels from the Ground and Fossil Fuel Reserves

I found this information on page _____.

Create *a graphic organizer to identify the ways fossil fuels are removed from the ground. Then complete the sentence below.*

Fossil fuel _____ are the useable and cost-effective part of existing fossil fuel _____.

Energy from Atoms

I found this information on page _____.

Sequence *the steps in a* **nuclear chain reaction.**

_____ are fired at fuel rods containing _____.	Neutrons hit _____ atoms. The atoms split apart, releasing _____ and _____.	More _____ atoms split, releasing more _____ and more _____.

Name _____ **Date** _____

Earth's Energy and Mineral Resources

Section 2 Renewable Energy Resources

Benchmarks—SC.D.2.3.2: The student knows the positive and negative consequences of human action on the Earth's systems. Also covers: SC.A.2.3.3, SC.B.1.3.1, SC.B.2.3.2, SC.D.2.3.1, SC.G.2.3.1, SC.G.2.3.4, SC.H.3.3.4

Predict *three things that might be discussed in Section 2 as you read the headings.*

1. _____

_____

2. _____

_____

3. _____

_____

Review Vocabulary

Use your book or a dictionary to define energy.

energy _____

New Vocabulary

Use your book or a dictionary to define the vocabulary terms.

renewable resource _____

_____

geothermal energy _____

_____

biomass energy _____

_____

Academic Vocabulary

Use a dictionary to define derive.

derive _____

Name _____ **Date** _____

Main Idea

Details

Renewable Energy Resources

I found this information on page _____.

Contrast passive *and* active *solar energy by providing examples.*

An example of passive solar energy is _____

_____.

An example of active solar energy is _____

_____.

I found this information on page _____.

Compare *the advantages and disadvantages of generating electricity from* wind energy.

Wind Energy as Source of Electricity	
Advantages	Disadvantages

I found this information on page _____.

Model *a* hydroelectric power plant. *Use the figure in your book.*

Name _____ **Date** _____

Section 2 Renewable Energy Resources (continued)

Main Idea	Details

Renewable Energy Resources

I found this information on page _____.

Identify *three problems associated with* geothermal power.

1. _____

2. _____

3. _____

Other Renewable Energy Resources

I found this information on page _____.

Compare *these examples of biomass that can be used to generate energy. List the advantages and disadvantages of each.*

Biomass Energy		
Material	Advantages	Disadvantages
Wood		
Alcohol		
Garbage		

Name _____ **Date** _____

Earth's Energy and Mineral Resources

Section 3 Mineral Resources

Benchmarks—SC.D.2.3.2: The student knows the positive and negative consequences of human action on the Earth's systems. Also covers: SC.D.2.3.1, SC.G.2.3.1, SC.G.2.3.4, SC.H.1.3.6, SC.H.3.3.4, SC.H.3.3.5, SC.H.3.3.6

Skim *through Section 3 of your book. Read the headings and look at the illustrations. Write three questions that come to mind.*

1. _____
2. _____
3. _____

Review Vocabulary *Use your book or a dictionary to define* metal.

metal _____

New Vocabulary *Use your book or a dictionary to define the vocabulary terms.*

mineral resources _____

ore _____

recycling _____

Academic Vocabulary *Use a dictionary to define* obtain.

obtain _____

Name _____ **Date** _____

Section 3 Mineral Resources (continued)

Main Idea

Details

Metallic Mineral Resources

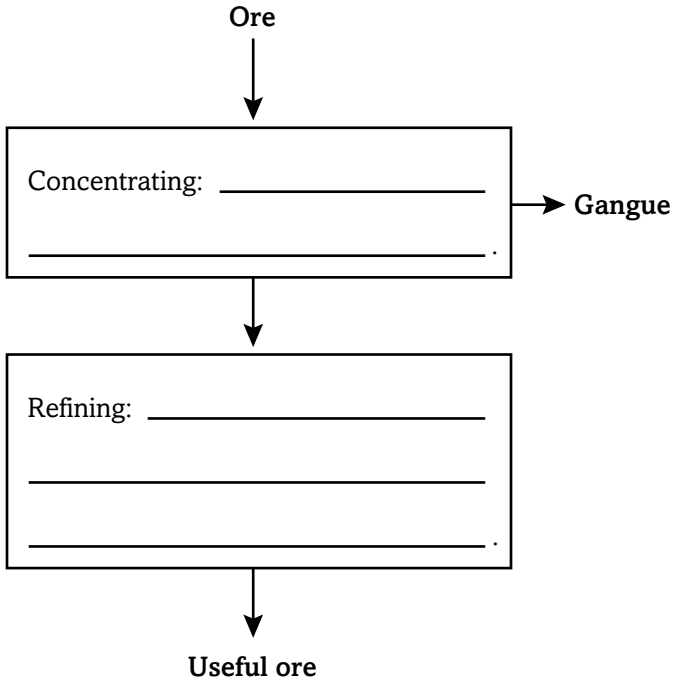
I found this information on page _____.

List *the 3 things that are required for a mineral deposit to be considered an ore.*

A mineral deposit is considered an ore when:
1.
2.
3.

I found this information on page _____.

Sequence *the steps in separating a useful mineral from its ore by completing the graphic organizer below. Then define* smelting.



Smelting: _____

_____

Name _____ **Date** _____

Section 3 Mineral Resources (continued)

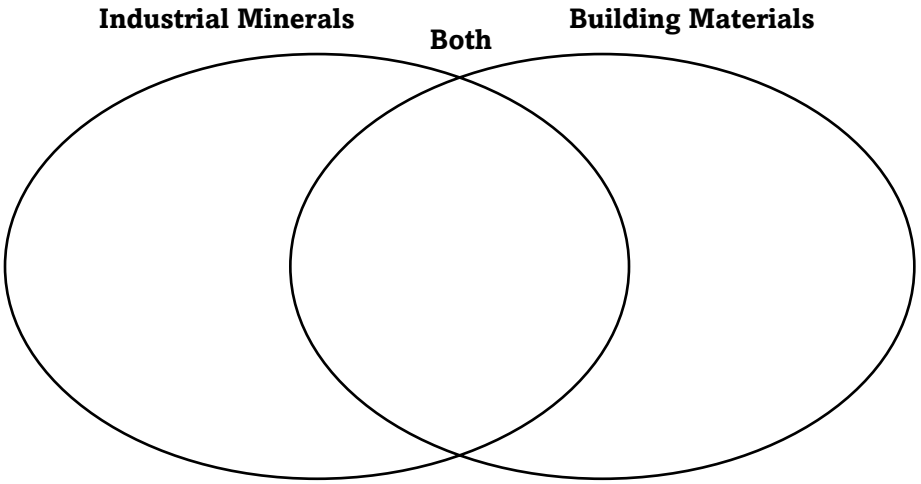
Main Idea

Details

Nonmetallic Mineral Resources

I found this information on page _____.

Classify mineral resources *and* building materials *by completing the Venn diagram with at least seven materials.*



Recycling Mineral Resources

I found this information on page _____.

Create *a graphic organizer to identify the ways to conserve mineral resources.*

CONNECT IT

Describe specific ways you could practice each of the three ways to conserve mineral resources in your home.

_____

_____

_____

_____

_____

_____

Name _____ **Date** _____

Tie It Together

Evaluate Energy Resources

Identify which alternative energy resource you think could best serve your community. Write a report explaining why you believe it would be the best choice. Discuss advantages and disadvantages for your community of using the alternative energy resource.

Name _____ **Date** _____

Earth's Energy and Mineral Resources Chapter Wrap-Up

Review the ideas you listed in the table at the beginning of the chapter. Cross out any incorrect information in the first column. Then complete the table by filling in the third column.

K What I know	W What I want to find out	L What I learned

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things you have learned about Earth's energy and mineral resources.**

_____

_____

_____

_____

Name _____ **Date** _____

The Atmosphere in Motion

Sunshine State Standards—SC.B.1: The student recognizes that energy may be changed in form with varying efficiency. Also covers: SC.D.1

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	The Atmosphere in Motion
	• The atmosphere protects living things from harmful doses of ultraviolet radiation and X-ray radiation.
	• Earth is often referred to as the water planet.
	• Fast-moving molecules transfer energy to slower-moving molecules when they bump into them.
	• The highest layer of the atmosphere is the stratosphere.

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Write a short newspaper article to warn people about the dangers of an approaching hurricane.

Name _____ **Date** _____

The Atmosphere in Motion

Section 1 The Atmosphere

Benchmarks—SC.D.1.3.3: The student knows how conditions that exist in one system influence the conditions that exist in other systems. Also covers: SC.A.1.3.5, SC.A.1.3.6, SC.B.1.3.3, SC.D.1.3.5, SC.H.1.3.5, SC.H.2.3.1, SC.H.3.3.5

Scan *Section 1 of your book. Use the checklist below.*

- ☐ Read all section titles.
- ☐ Read all boldface words.
- ☐ Read all charts and graphs.
- ☐ Look at all of the pictures.
- ☐ Think about what you already know about the atmosphere.

Write three facts you discovered about nonrenewable resources as you scanned this section.

1. _____

2. _____

3. _____

Review Vocabulary *Use your book or a dictionary to define* evaporation.

evaporation _____

_____

New Vocabulary *Use your book to define the following terms.*

atmosphere _____

_____

aerosols _____

_____

water cycle _____

_____

Academic Vocabulary *Use a dictionary to define* affect.

affect _____

Name _____ **Date** _____

Section 1 The Atmosphere (continued)

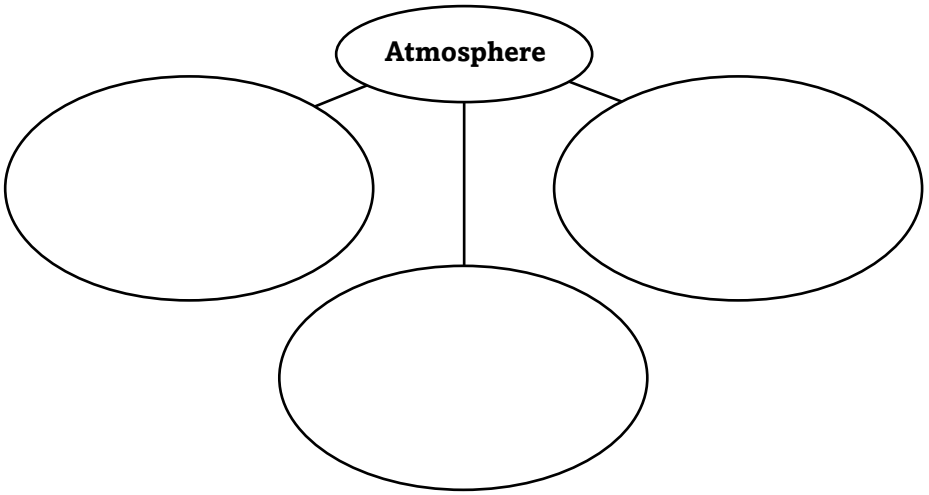
Main Idea

Details

Investigating Air/ Composition of the Atmosphere

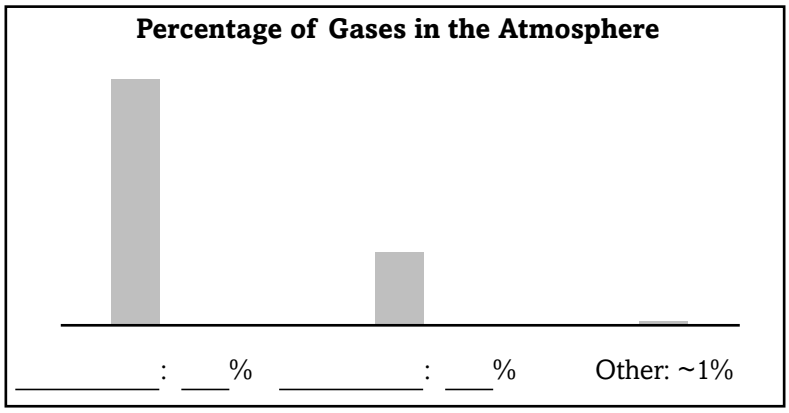
I found this information on page _____.

Complete *the graphic organizer below to identify the ways that the atmosphere makes Earth fit for life.*



I found this information on page _____.

Label *the gases that form the three main components of the atmosphere, and indicate the percentage of each.*



I found this information on page _____.

Summarize *information about aerosols by completing the outline.*

I. Examples of aerosols

A. Solids

1. _____

2. _____

3. _____

B. Tiny liquid droplets

1. _____

Name _____ **Date** _____

Section 1 The Atmosphere (continued)

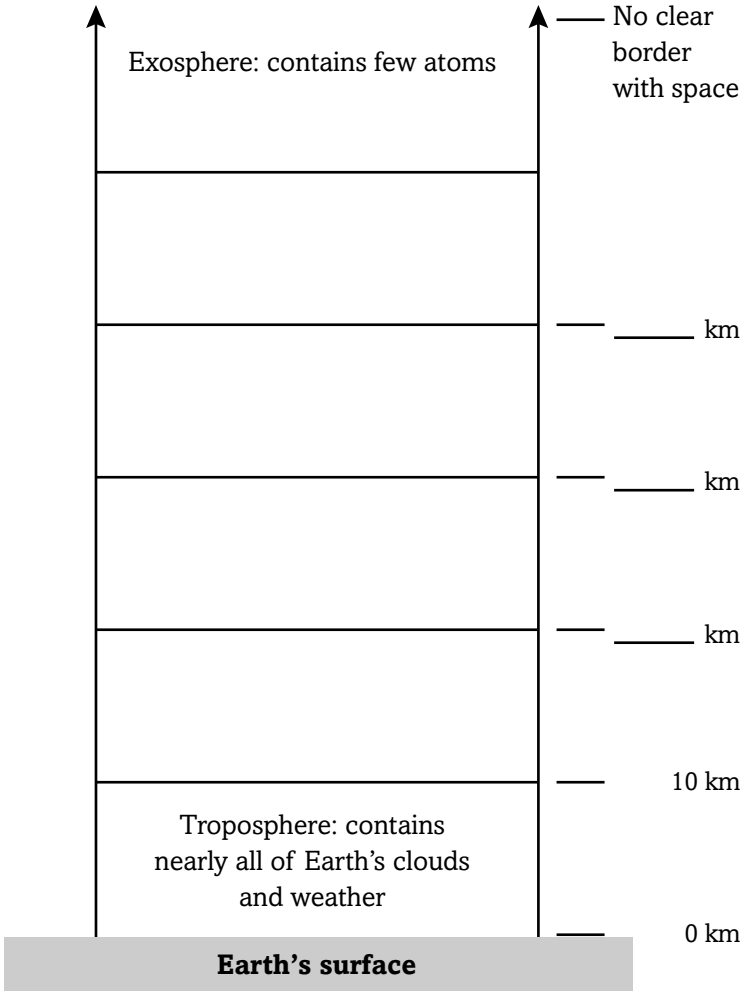
Main Idea

Details

Layers of the Atmosphere

I found this information on page _____.

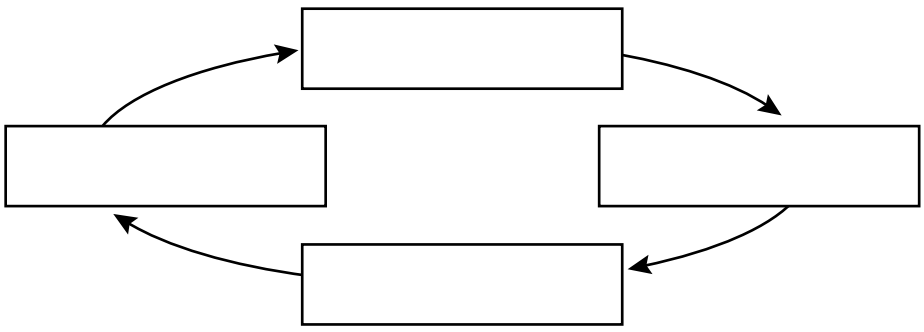
Organize *information about the layers of the atmosphere by completing the diagram. Name and describe a characteristic of each layer, and identify how far up the layer extends.*



Earth's Water

I found this information on page _____.

Complete *the diagram by identifying the four stages of the water cycle.*



Name _____ **Date** _____

The Atmosphere in Motion

Section 2 Earth's Weather

Benchmarks—SC.B.1.3.5: The student knows the processes by which thermal energy tends to flow from a system of higher temperature to a system of lower temperature. Also covers: SC.A.1.3.3, SC.B.2.3.1, SC.D.1.3.3, SC.D.1.3.5, SC.H.2.3.1

Scan *Section 2 of your book. Read the headings and look at the illustrations Write three questions that come to mind.*

1. _____

2. _____

3. _____

Review Vocabulary

Use your book to define condensation.

condensation _____

_____

New Vocabulary

Use your book to define the following terms. Then write a sentence using each term.

humidity _____

_____

_____

dew point _____

_____

_____

relative humidity _____

_____

_____

Academic Vocabulary

Use a dictionary to define indicate.

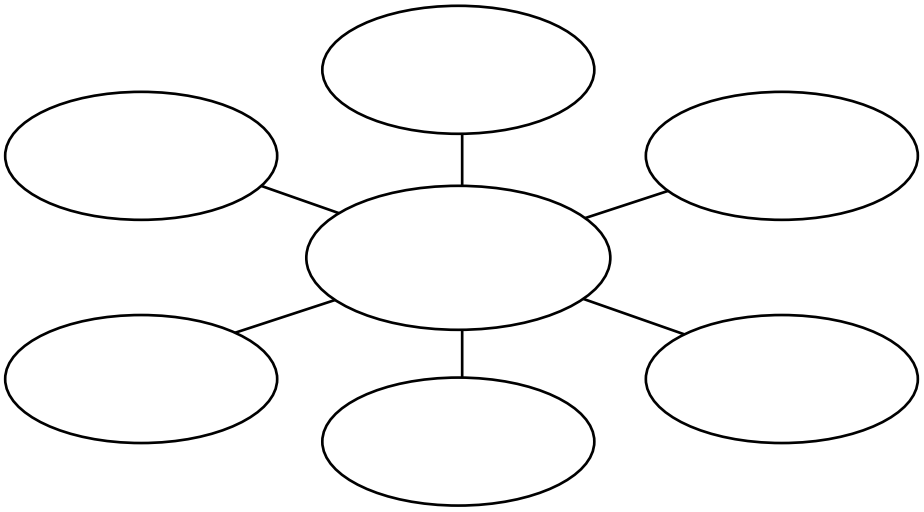
indicate _____

_____

Name _____ **Date** _____

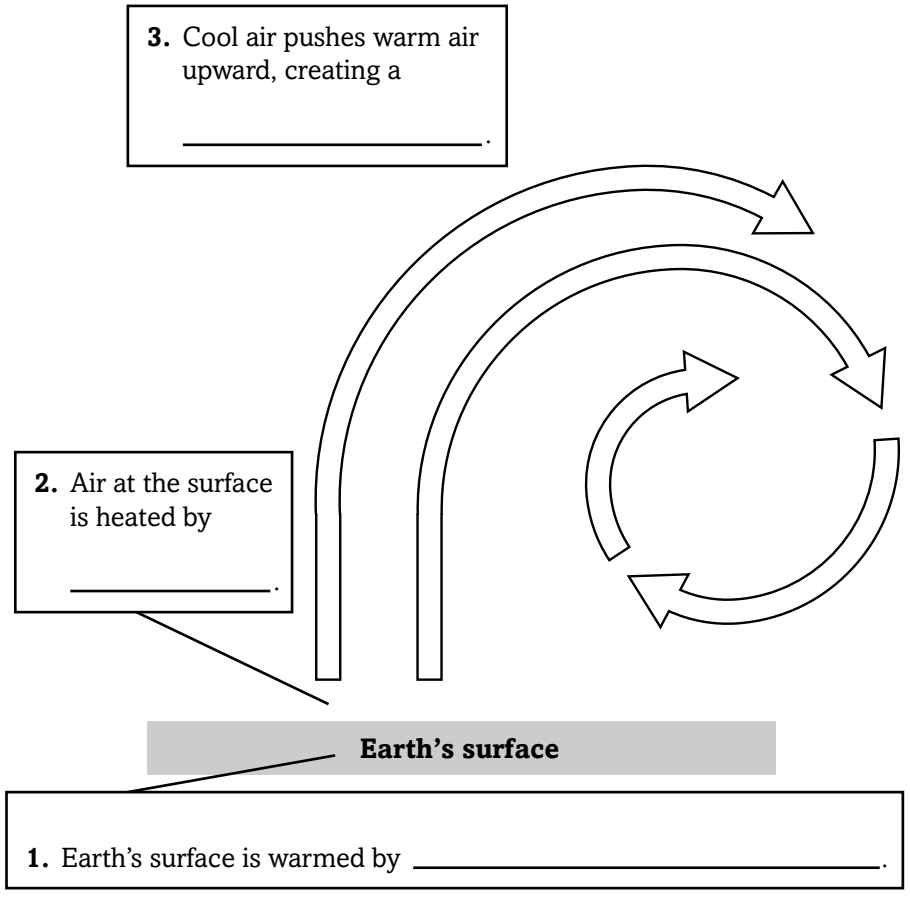
Section 2 Earth's Weather (continued)

Main Idea	Details
Weather *I found this information on page _____.*	**Create** *a graphic organizer to identify the six weather factors.*



I found this information on page _____.

Sequence *how energy moves through the atmosphere by completing the labels on the diagram.*



Name _____ **Date** _____

Section 2 Earth's Weather (continued)

Main Idea

Details

Clouds

I found this information on page _____.

Summarize *types of clouds in the chart below.*

Class	Altitude	Examples	
Low	2,000 m or below	cumulus,	a type that can extend from low to high: _____
Middle			
High			

Precipitation

I found this information on page _____.

Identify *the different types of precipitation.*

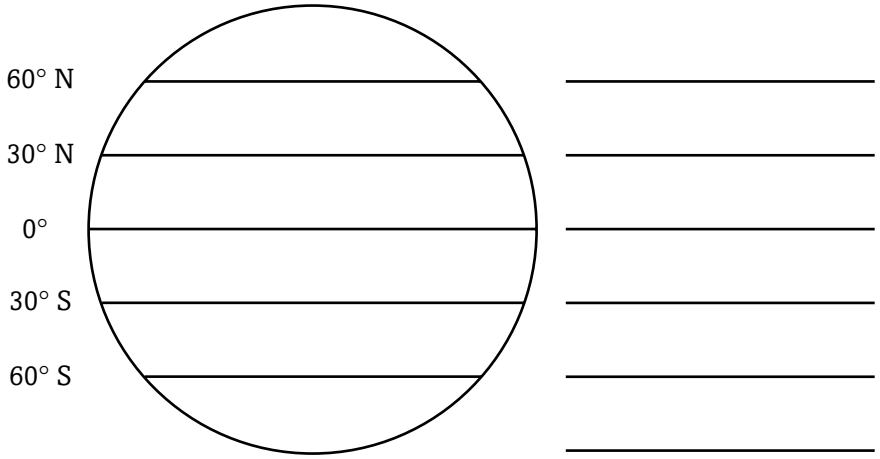
1. _____ **2.** _____ **3.** _____

4. _____ **5.** _____

Wind

I found this information on page _____.

Complete ***the diagram of Earth by identifying the major wind belts and drawing arrows to indicate the prevailing direction of the winds within each belt.***



Connect It

Explain how conduction warms bare feet when a person walks on hot sand along a beach.

_____

_____

_____

Name _____ **Date** _____

The Atmosphere in Motion

Section 3 Air Masses and Fronts

Benchmarks—SC.1.3.5: The student understands concepts of time and size relating to the interaction of Earth's processes.
Also covers: SC.B.2.3.1, SC.D.1.3.3, SC.H.1.3.4, SC.H.1.3.5, SC.H.1.3.7, SC.h.2.3.1, SC.H.3.3.4

Predict *three things that will be discussed as you read the headings of Section 3 of your book.*

1. _____

2. _____

3. _____

Review Vocabulary

Use your book or a dictionary to define **thunderstorm.**

thunderstorm _____

_____

New Vocabulary

Write the terms to the left of their definitions.

_____ large body of air that develops over a particular region of Earth's surface

_____ boundary that develops where air masses of different temperatures collide

_____ violent, whirling wind, usually less than 200 m in diameter, that travels a narrow path over land and can be highly destructive

_____ large storm that begins as an area of low pressure over tropical oceans

Academic Vocabulary

Use a dictionary to define **occur.**

occur _____

_____

Name _____ **Date** _____

Section 3 Air Masses and Fronts (continued)

Main Idea | **Details**

Air Masses

I found this information on page _____.

Complete *the blanks in the sentences about air masses.*

Air masses that _____ in one area for a few days pick up the _____ of that area. For example, an air mass that stays over a tropical ocean will become _____ and _____.

Fronts

I found this information on page _____.

Contrast *the four types of fronts by completing the chart.*

Type of Front	How It Forms
Cold front	
	Warm air advances into region of colder air, the warm, less dense air slides up and over the colder air.
Stationary front	
	Fast-moving cold front overtakes a slower warm front.

High- and Low-Pressure Centers

I found this information on page _____.

Compare *ways that high pressure and low pressure affect weather.*

High pressure forms. →	Air _____. →	Moisture in air cannot _____. →	
Low pressure forms. →	Air flows in and _____. →	Moisture in air _____. →	

Name _____ **Date** _____

Section 3 Air Masses and Fronts (continued)

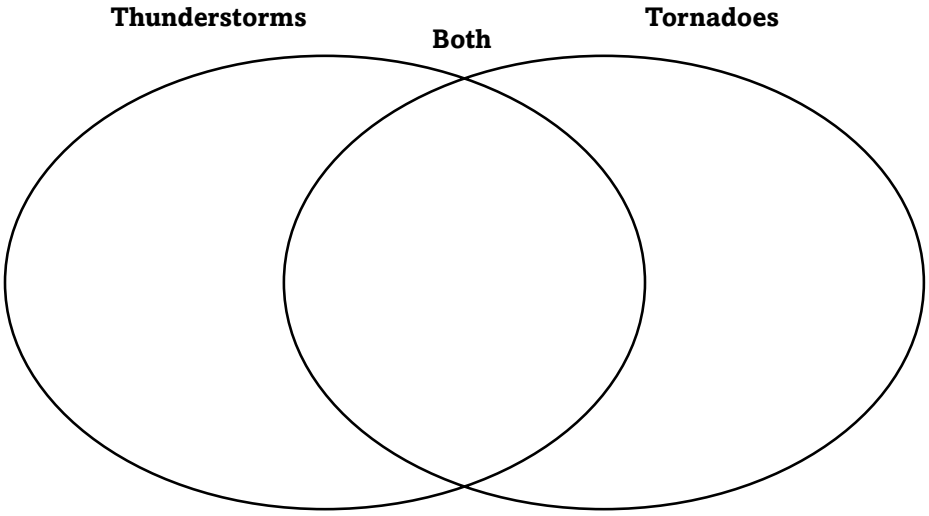
Main Idea

Details

Severe Weather

I found this information on page _____.

Compare and contrast *at least eight main characteristics of thunderstorms and tornadoes in the Venn diagram below.*



Hurricanes

I found this information on page _____.

Describe *each of the following characteristics of a hurricane.*

1. Wind gusts _____

_____

_____

2. Storm surge _____

_____

_____

3. Beach erosion _____

_____

_____

Connect It

Explain the difference between a severe weather watch and a severe weather warning in terms of how you should respond to each.

_____

_____

_____

Name _____ **Date** _____

Tie It Together

Model Sunlight on Earth

Design a way to demonstrate how the curved surface of Earth can affect how much sunlight the equator receives versus how much the North Pole receives. Test your model. Write a list of detailed observations.

Name _____ **Date** _____

The Atmosphere in Motion

Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

The Atmosphere in Motion	After You Read
• The atmosphere protects living things from harmful doses of ultraviolet radiation and X-ray radiation.	
• Earth is often referred to as the water planet.	
• Fast-moving molecules transfer energy to slower-moving molecules when they bump into them.	
• The highest layer of the atmosphere is the stratosphere.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things that you have learned about Earth's atmosphere.**

_____

_____

_____

_____

Name _____ **Date** _____

Weathering and Soil

Sunshine State Standards—SC.D.1: The student recognizes that processes in the lithosphere, atmosphere, hydrosphere, and biosphere interact to shape the Earth.

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	Weathering and Soil
	• Plants can break apart rock.
	• Climate affects the rate at which soil forms.
	• Soil on steep slopes tends to be thicker than soil at the bottom of a slope.
	• Humans sometimes cause erosion to occur faster than new soil can form.

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

***A* tor *is a pile of boulders left on land after the surrounding, weakened rock is worn away. Write a poem about a tor. Use words in your poem that rhyme with the word* tor.**

Name _____ **Date** _____

Weathering and Soil

Section 1 Weathering

Benchmarks—SC.D.1.3.1: The student knows that mechanical and chemical activities shape and reshape the Earth's land surface by eroding rock and soil in some areas and depositing them in other areas, sometimes in seasonal layers. Also covers: SC.D.1.3.4, SC.D.1.3.5

Scan *the headings of Section 1 to determine two main types of weathering that will be discussed.*

1. _____

2. _____

Review Vocabulary

surface area

Define surface area, *and use it in a scientific sentence.*

_____

_____

_____

_____

New Vocabulary

Read the definitions below. Write the key term on the blank in the left column.

_____ surface processes that break rock into smaller and smaller pieces

_____ physical processes that break rock apart without changing its chemical makeup

_____ mechanical weathering process that occurs when water freezes in the cracks in rock and expands

_____ process in which chemical reactions dissolve the minerals in rock or change them into different minerals

_____ chemical weathering process that occurs as minerals are exposed to air and water

_____ the long-term pattern of weather that occurs in a particular area

Academic Vocabulary

process

Use a dictionary to define the term **process.**

_____

_____

Name _____ **Date** _____

Section 1 Weathering (continued)

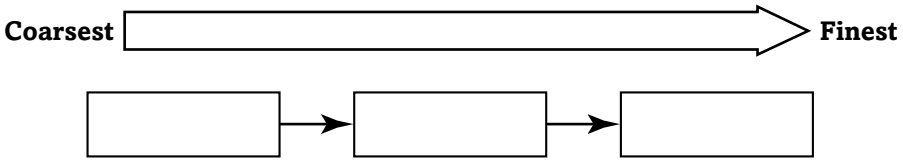
Main Idea

Details

Weathering and Its Effects

I found this information on page _____.

Sequence *the sediment grain types in order of size.*



Mechanical Weathering

I found this information on page _____.

Organize *information by completing the outline below as you read.*

Mechanical Weathering

I. Plants and Animals

A. _____

_____

B. _____

_____

II. Ice Wedging

A. _____

B. _____

_____

C. _____

_____

III. Surface Area

A. _____

_____

B. _____

_____

C. _____

_____

Name _____ **Date** _____

Section 1 Weathering (continued)

Main Idea

Chemical Weathering

I found this information on page _____.

Details

Sequence *steps to explain how carbon dioxide causes chemical weathering.*

Chemical Weathering by Carbonic Acid	
1.	
2.	
3.	
4.	

Effects of Climate

I found this information on page _____.

Synthesize *the effects of climate and rock type on the rate of weathering in the table below.*

Factors that Affect the Rate of Weathering	
Factor	**Effects**
Climate	Chemical weathering Mechanical weathering
Rock type	

Analyze *how oxygen can cause chemical weathering. Discuss where you have seen oxidation around your home.*

_____

_____

_____

_____

_____

Name _____ **Date** _____

Weathering and Soil

Section 2 The Nature of Soil

Benchmarks—SC.D.1.3.4: The student knows the ways in which plants and animals reshape the landscape (e.g., bacteria, fungi, worms, rodents, and other organisms add organic matter to the soil, increasing soil fertility, encouraging plant growth, and strengthening resistance to erosion). Also covers: SC.D.1.3.5

Predict *two things that might be discussed in this section on the basis of its title.*

1. _____

2. _____

Review Vocabulary

Define *the term* profile.

profile _____

New Vocabulary

Use your book or a dictionary to define the following terms.

soil _____

_____

humus _____

_____

horizon _____

_____

soil profile _____

_____

litter _____

_____

leaching _____

_____

Academic Vocabulary

Use a dictionary to define layer.

layer _____

Name _____ **Date** _____

Section 2 The Nature of Soil (continued)

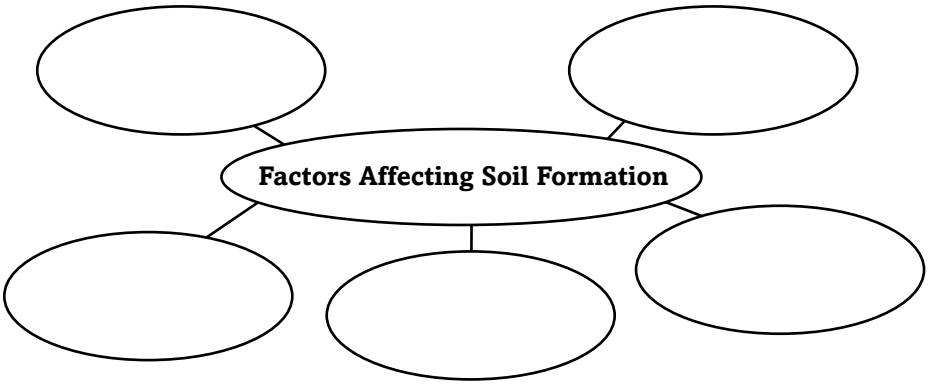
Main Idea

Details

Formation of Soil

I found this information on page _____.

Complete *the graphic organizer to show the 5 factors that affect soil formation.*



Composition of Soil

I found this information on page _____.

Identify *the 5 components of soil, and create a symbol to represent each.*

Component of Soil					
My Soil Symbol					

I found this information on page _____.

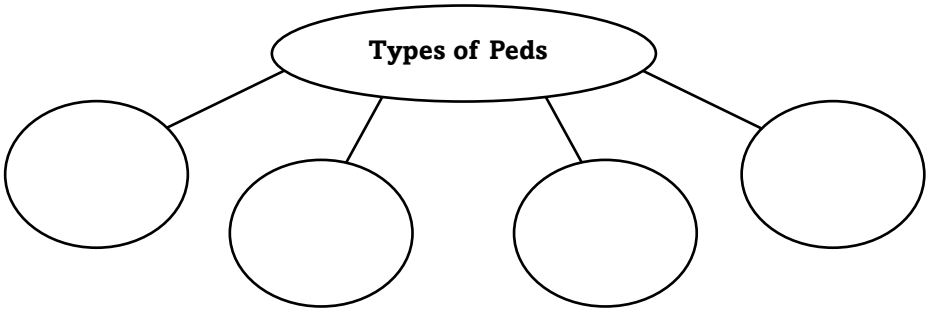
Compare and contrast dry soil *and* moist soil. *Create sketches in the top row, and write descriptions in the bottom row.*

Dry Soil	Moist Soil

Name _____ **Date** _____

Section 2 The Nature of Soil (continued)

Main Idea	Details
Soil Profile *I found this information on page _____.*	**Model** *a* soil profile *by drawing and labeling it below.*
I found this information on page _____.	**Organize** *information about soil structure in the concept map.*
Soil Types *I found this information on page _____.*	**Summarize** *information about how soil varies in different regions.*



Region	Soil
desert	
prairie	
temperate forest	

CONNECT IT

Analyze relationships between organisms and soil. Describe how organisms use soil and how organisms affect soil.

_____

_____

_____

Name _____ **Date** _____

Weathering and Soil

Section 3 Soil Erosion

Benchmarks—SC.D.1.3.1: The student knows that mechanical and chemical activities shape and reshape the Earth's land surface by eroding rock and soil in some areas and depositing them in other areas, sometimes in seasonal layers. Also covers: SC.D.1.3.4, SC.D.1.3.5, SC.H.1.3.3, SC.H.1.3.4, SC.H.1.3.5, SC.H.1.3.6

Skim *the headings and the boldfaced terms in Section 3. Identify three facts about soil erosion and ways to reduce its occurrence.*

1. _____
2. _____
3. _____

Review Vocabulary

Use erosion *in a scientific sentence.*

erosion _____

New Vocabulary

Define the following terms. Then use each term in an original scientific sentence.

no-till farming _____

contour farming _____

terracing _____

Academic Vocabulary

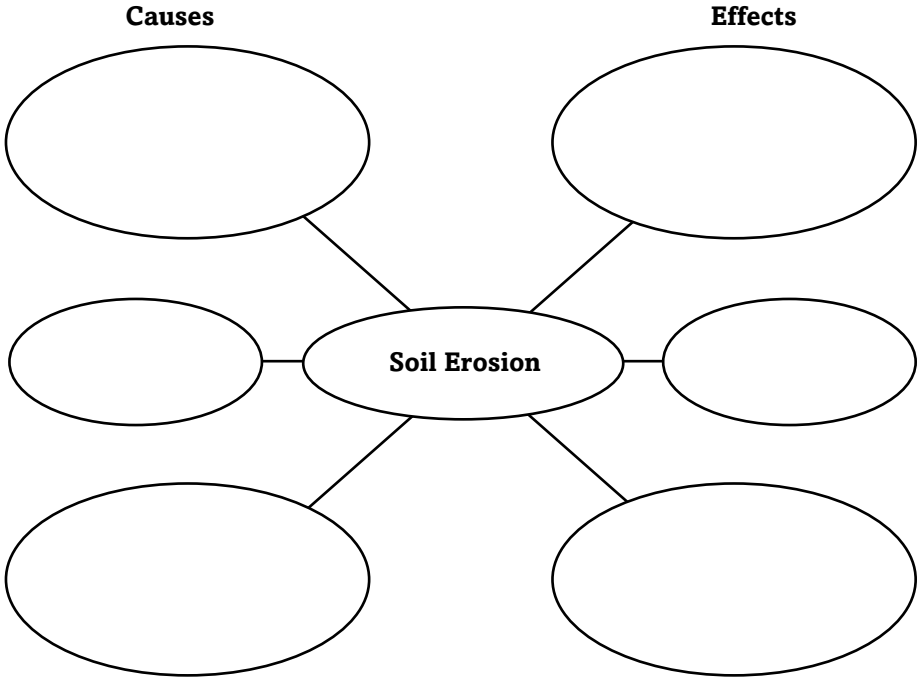
Define the term compensate.

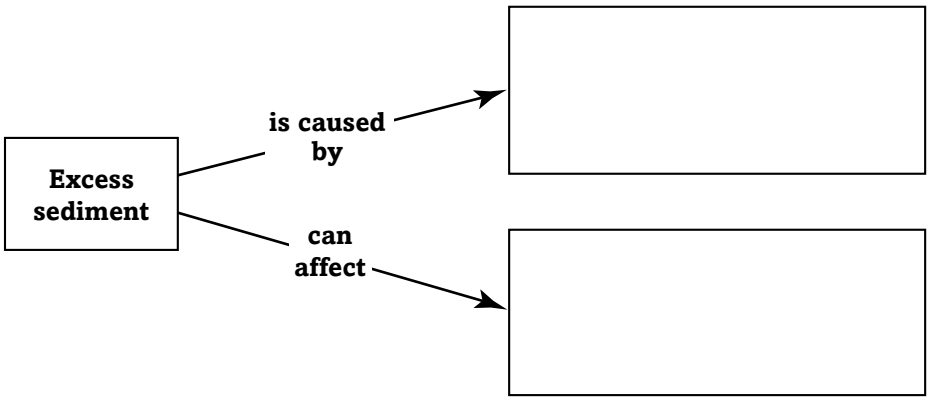
compensate _____

Name _____ **Date** _____

Section 3 Soil Erosion (continued)

Main Idea	Details
Soil—An Important Resource *I found this information on page _____.*	**Evaluate** *why soil erosion is a serious problem for agriculture.*
Causes and Effects of Soil Erosion *I found this information on page _____.*	**Organize** *information on the causes and effects of soil erosion by completing the diagram below.*
I found this information on page _____.	**Identify** *the causes and effects of excess sediment.*





Name _____ **Date** _____

Section 3 Soil Erosion (continued)

Main Idea

Preventing Soil Erosion

I found this information on page _____.

Details

Summarize *methods of preventing soil erosion.*

Preventing Soil Erosion	
Strategy	Methods
Manage crops	**1.**
	2.
	3.
Reduce erosion on slopes	**1.**
	2.
Reduce erosion on exposed soil	**1.**
	2.
	3.

CONNECT IT

Identify ways to prevent erosion that are probably used in your community and explain why they are used.

_____

_____

_____

_____

Name _____ **Date** _____

Tie It Together

Model

Recall evidence of erosion that you have seen in your community. Then create a model to demonstrate how the erosion probably occurred. You may make a working three-dimensional model that you can demonstrate for the class. You may represent your model with a labeled drawing. Describe how the model can be changed to prevent erosion.

Name _____ **Date** _____

Weathering and Soil Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Weathering and Soil	After You Read
• Plants can break apart rock.	
• Climate affects the rate at which soil forms.	
• Soil on steep slopes usually is thicker than soil at the bottom of a slope.	
• Humans sometimes cause erosion to occur faster than new soil can form.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things you have learned about weathering and soil.**

_____

_____

_____

_____

Name _____ **Date** _____

Water Erosion and Deposition

Sunshine State Standards—SC.D.1: The student recognizes that processes in the lithosphere, atmosphere, hydrosphere, and biosphere interact to shape the Earth.

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	Water Erosion and Deposition
	• The presence of plants can affect how much water runs off the land.
	• When a river forms, its course never changes.
	• Water that soaks into the ground becomes part of a system, just as water above ground does.
	• Beaches are always made of pieces of rock.

FOLDABLES™ Study Organizer

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Hoodoos are narrow towers of rock. What processes might have formed hoodoos? What will happen if this process continues?

Name _____ **Date** _____

Water Erosion and Deposition

Section 1 Surface Water

Benchmarks—SC.D.1.3.1: The student knows that mechanical and chemical activities shape and reshape the Earth's land surface by eroding rock and soil in some areas and depositing it in other areas, sometimes in seasonal layers. Also covers: SC.D.1.3.3, SC.D.1.3.4, SC.D.1.3.5, SC.H.1.3.5, SC.H.1.3.6, SC.H.2.3.1

Skim *Section 1 of your book and read the headings. Write three questions that come to mind. Try to answer your questions as you read.*

1. _____

2. _____

3. _____

Review Vocabulary

Define erosion.

erosion _____

New Vocabulary

Write a paragraph that uses each vocabulary term in a way that shows its scientific meaning.

runoff

drainage basin _____

meander _____

Academic Vocabulary

Use your book or a dictionary to define likewise.

likewise _____

Name _____ **Date** _____

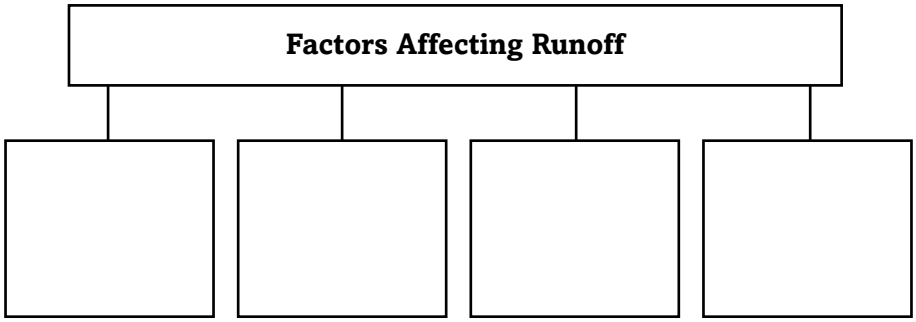
Section 1 Surface Water (continued)

Main Idea	Details

Runoff

I found this information on page _____.

Distinguish *four factors that determine how much* runoff *occurs after rain falls.*



Water Erosion

I found this information on page _____.

Summarize *the causes and effects of four types of* surface water erosion *in the chart below.*

Type	Causes	Effects
Rill		
Gully		
Sheet		
Stream		

River System Development

I found this information on page _____.

Scan *the map of drainage basins in the United States in your text. Identify three* major drainage basins.

1. _____
2. _____
3. _____

Name _____ **Date** _____

Section 1 Surface Water (continued)

Main Idea	Details
Stages of Stream Development *I found this information on page _____.*	**Sequence** *the* stages of stream development. *Complete the flow chart to identify the key features of each stage.*

Young Streams

↓

Mature Streams

↓

Old Streams

Too Much Water

I found this information on page _____.

Contrast *the roles and locations of* dams *and* levees.

_____

_____

_____

Deposition by Surface Water

I found this information on page _____.

Summarize *how rivers deposit sediments. Describe how* deltas *and* alluvial fans *form.*

As water slows, it _____.

These deposits form a delta when _____

_____. They form an alluvial fan when _____

_____.

SYNTHESIZE IT

A broad, flat river flows slowly along its bed while a young, swift stream rushes past. Explain which one would probably deposit more sediment.

_____

_____

Name _____ **Date** _____

Water Erosion and Deposition

Section 2 Groundwater

Benchmarks—SC.D.1.3.1: The student knows that mechanical and chemical activities shape and reshape the Earth's land surface by eroding rock and soil in some areas and depositing them in other areas, sometimes in seasonal layers. Also covers: SC.D.1.3.3, SC.D.1.3.5, SC.H.1.3.5

Scan *the headings in Section 2. Then predict three topics that will be covered in this section.*

1. _____

2. _____

3. _____

Review Vocabulary

Define pore.

pore _____

_____

New Vocabulary

Use your book to define the following terms.

permeable _____

_____

aquifer _____

_____

water table _____

_____

geyser _____

_____

Academic Vocabulary

Use your book or a dictionary to define underlie.

underlie _____

Name _____ **Date** _____

Section 2 Groundwater (continued)

Main Idea

Details

Groundwater Systems

I found this information on page _____.

Summarize *how* groundwater *collects. Complete the graphic organizer.*

Soil is made of fragments of rocks and minerals with spaces between them. → _____

I found this information on page _____.

Create *a drawing that shows how groundwater flows. Label the* impermeable layer, permeable layer, water table, *and* zone of saturation. *Use arrows to show how the groundwater flows.*

Water Table

I found this information on page _____.

Organize *information about* wells *and* springs. *Complete the table.*

Water Source	Important Features
Regular well	
Artesian well	
Spring	

Name _____ **Date** _____

Section 2 Groundwater (continued)

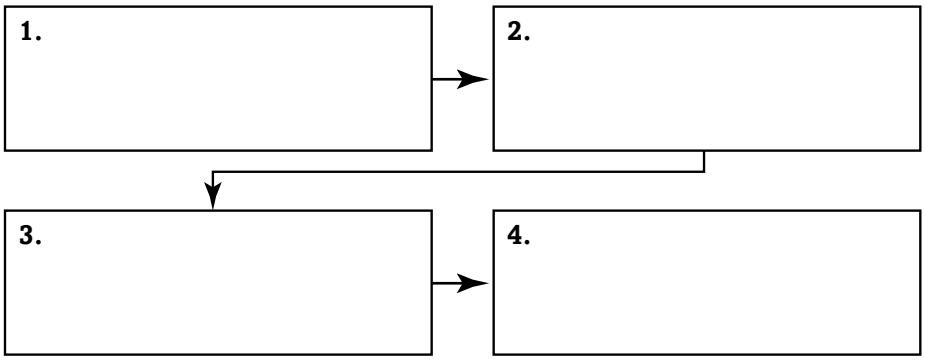
Main Idea

Water Table

I found this information on page _____.

Details

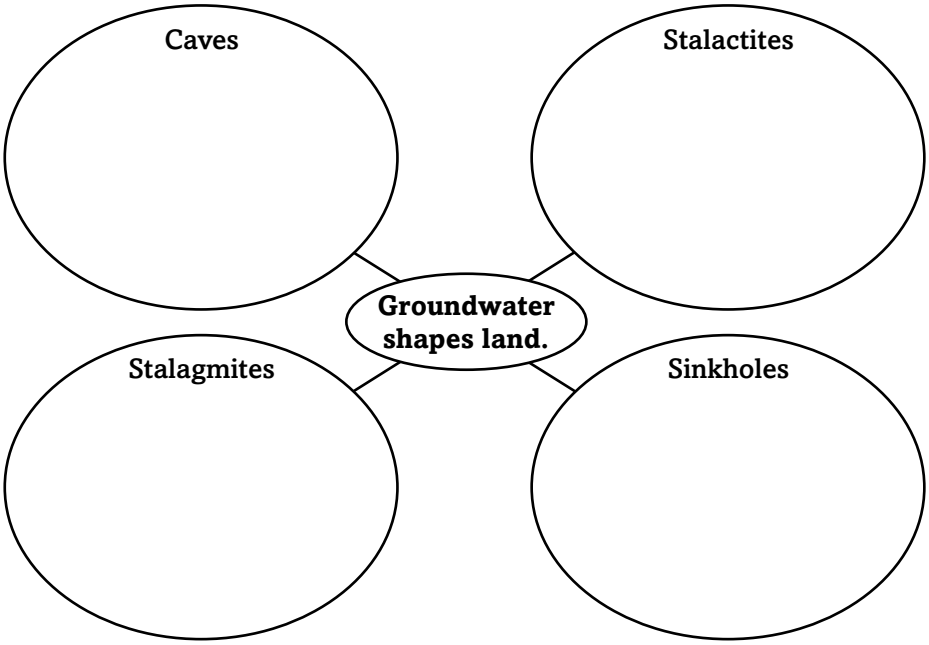
Sequence *the events that cause a* geyser *to erupt. Complete the flow chart.*



The Work of Groundwater

I found this information on page _____.

Complete *the concept map to identify ways that* groundwater shapes land.



Connect It

Aquifers are important natural resources. Due to human activity, the levels of some aquifers have dropped over time. What problems can this cause for humans?

_____

_____

_____

Name _____ **Date** _____

Water Erosion and Deposition

Section 3 Ocean Shoreline

Benchmarks—SC.D.1.3.1: The student knows that mechanical and chemical activities shape and reshape the Earth's land surface by eroding rock and soil in some areas and depositing them in other areas, sometimes in seasonal layers. Also covers: SC.D.1.3.3, SC.D.1.3.5, SC.H.1.3.4, SC.H.1.3.5

Scan *Section 3 of your text using the checklist below.*

- ☐ Read all section titles.
- ☐ Read all bold words.
- ☐ Look at all pictures and labels.
- ☐ Think about what you already know about waves and shorelines.

Write three facts you discovered about ocean shorelines as you scanned the section.

1. _____

2. _____

3. _____

Review Vocabulary

Define spring tide.

spring tide _____

_____

New Vocabulary

Use your book to define the following terms.

longshore current _____

_____

beach _____

_____

Academic Vocabulary

Use your book or a dictionary to find the meaning of **transport** ***as a verb. Then write a sentence using the term.***

transport _____

_____

Name _____ **Date** _____

Section 3 Ocean Shoreline (continued)

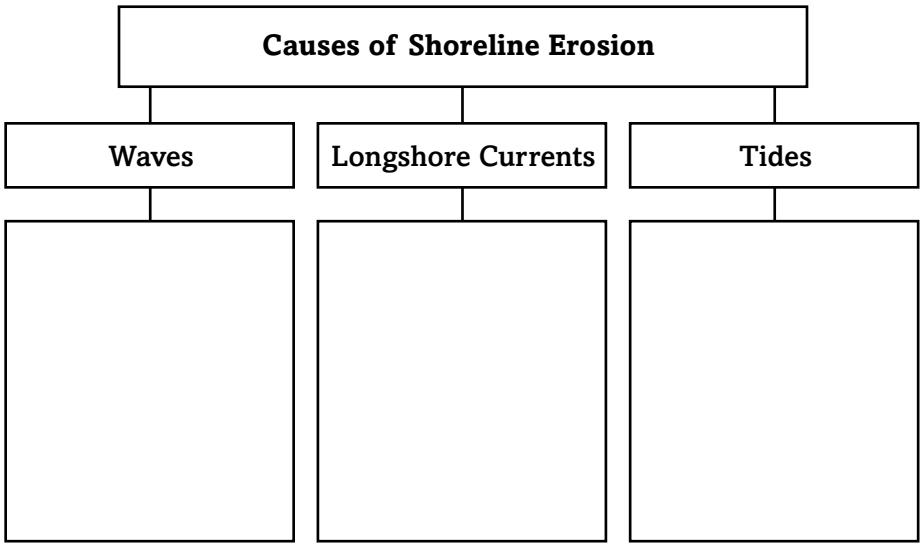
Main Idea

Details

The Shore

I found this information on page _____.

Complete *the graphic organizer below to identify how* shoreline erosion *occurs.*



Rocky Shorelines

I found this information on page _____.

Sequence *three steps in the* erosion process of a rocky shoreline. *Create a sketch to help you remember each step.*

1.	
2.	
3.	

Name _____ **Date** _____

Section 3 Ocean Shoreline (continued)

Main Idea

Details

Sandy Beaches

I found this information on page _____.

Summarize *how* beach sand *forms.*

_____

_____

_____

_____

Sand Erosion and Deposition

I found this information on page _____.

Analyze *ways that beaches can change.*

Cause	Effect

Analyze *how* barrier islands *form and change. Complete the outline.*

I. How barrier islands form

A. _____

B. _____

II. How barrier islands change

A. _____

B. _____

SYNTHESIZE IT

Which shoreline feature would you expect to last longest: a rocky shoreline, a sandy beach, or a barrier island? Which would you expect to last the shortest time? Explain your answer.

_____

_____

_____

Name _____ **Date** _____

Tie It Together

Test Soil Permeability

In a small group, collect several different types of soil or rock, such as gravel, sand, and clay. Test the permeability of each sample by following the process below.

1. Cut the top from a plastic 2-liter bottle. Be sure to follow safety procedures when cutting.
2. Place about 10 cm of the material to be tested in the bottom part of the bottle.
3. Pour 100 ml of water into the bottle. Use a stopwatch to determine how long it takes the water to soak into the material. Observe the substance carefully until there is no water collected on the surface of the soil or gravel.
4. Record your results in the table below.
5. Remove the material from the bottle, and rinse and dry the bottle thoroughly. Then repeat steps 1–4 with the other materials you chose.

Material	Time

Given your results, which material would you use in the yard of a house built on a low area? Explain your answer.

Name _____ **Date** _____

Water Erosion and Deposition

Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Water Erosion and Deposition	After You Read
• The presence of plants can affect how much water runs off the land.	
• When a river forms, its course never changes.	
• Water that soaks into the ground becomes part of a system, just as water above ground does.	
• Beaches are always made of pieces of rock.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things that you have learned about erosion and deposition by water.**

_____

_____

_____

Name _____ **Date** _____

Plate Tectonics

Sunshine State Standards—SC.D.1: The student recognizes that processes in the lithosphere, atmosphere, hydrosphere, and biosphere interact to shape the Earth; SC.H.1: The student uses the scientific processes and habits of mind to solve problems.

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	Plate Tectonics
	• Fossil evidence provides support for the idea that continents have moved over time.
	• New seafloor is continuously forming while old seafloor is being destroyed.
	• Earth's crust is broken into sections called plates.
	• Rock flows deep inside Earth.

FOLDABLES™ Study Organizer

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Pretend you're a journalist with an audience that assumes the continents have never moved. Write about the kinds of evidence you'll need to convince people otherwise.

Name _____ **Date** _____

Plate Tectonics

Section 1 Continental Drift

Benchmarks—SC.D.1.3.3: The student knows how conditions that exist in one system influence the conditions that exist in other systems; SC.1.3.1: The student knows that scientific knowledge is subject to modification as new information challenges prevailing theories and as a new theory leads to looking at old observations in a new way. Also covers: SC.D.1.3.2, SC.D.1.3.5, SC.H.1.3.2, SC.H.1.3.6, SC.H.2.3.1, SC.H.3.3.5

Skim *through Section 1 of your book. Write three questions that come to mind from reading the headings and examining the illustrations.*

1. _____

2. _____

3. _____

Review Vocabulary

Define continent *to show its scientific meaning.*

continent _____

New Vocabulary

Use your book to define the following terms. Then write an original sentence using each term.

continental drift _____

Pangaea _____

Academic Vocabulary

Use a dictionary to define controversy.

controversy _____

Name _____ **Date** _____

Section 1 Continental Drift (continued)

Main Idea | **Details**

Evidence for Continental Drift

I found this information on page _____.

Summarize Alfred Wegener's hypothesis *about Earth's continents.*

_____

_____

_____

_____

_____

I found this information on page _____.

Create *a graphic organizer to identify the 3 types of clues that are evidence for* continental drift.

I found this information on page _____.

Analyze *the clue in the left column below. Then describe how Alfred Wegener would have explained it in the right column.*

Clue	Wegener's Response
Fossils of Mesosaurus found in South America and Africa	
Fossil plant found in five continents, including Antarctica	
Fossils of warm weather plants found on Arctic island	
Glacial deposits found in Africa, India, and Australia	

Name _____ **Date** _____

Section 1 Continental Drift (continued)

Main Idea

I found this information on page _____.

Details

Model ***what the continents may have looked like 250 million years ago.***

How could continents drift?

I found this information on page _____.

Summarize ***Wegener's explanations of how and why continental drift occurs.***

Wegener's explanation for continental drift

How: _____

_____

Why: _____

_____

EVALUATE IT

Do you think it was reasonable for scientists initially to reject the hypothesis of continental drift? Explain your response.

_____

_____

_____

_____

_____

Name _____ **Date** _____

Plate Tectonics

Section 2 Seafloor Spreading

Benchmarks—SC.D.1.3.3: The student knows how conditions that exist in one system influence the conditions that exist in other systems; SC.H.1.3.2: The student knows that the study of the events that led scientists to discoveries can provide information about the inquiry process and its effects. Also covers: SC.D.1.3.5, SC.H.1.3.6, SC.H.2.3.1, SC.H.3.3.5

Predict *three things that might be discussed in Section 2 after reading its headings.*

1. _____
2. _____
3. _____

Review Vocabulary

seafloor

Define seafloor. *Then use the word in a sentence.*

_____

_____

_____

_____

New Vocabulary

seafloor spreading

Use your book to define seafloor spreading. *Then use the term in a sentence.*

_____

_____

_____

_____

Academic Vocabulary

interval

Use a dictionary to define interval. *Then use the word in a sentence about magnetic clues to seafloor spreading.*

_____

_____

_____

_____

Name _____ **Date** _____

Section 2 Seafloor Spreading (continued)

Main Idea

Details

Mapping the Ocean Floor

I found this information on page _____.

Summarize *how sound waves are used to map the seafloor.*

_____

_____

_____

_____

_____

I found this information on page _____.

Model *the process of* seafloor spreading *by drawing a cross section of a mid-ocean ridge and the magma below it. Use arrows to indicate the directions of motion.*

Sequence *steps describing seafloor spreading.*

Hot, less dense material below Earth's crust rises toward the surface at a mid-ocean ridge.

↓

The less dense material flows _____ _____.

↓

As the seafloor spreads apart, magma is _____ _____.

Name _____ **Date** _____

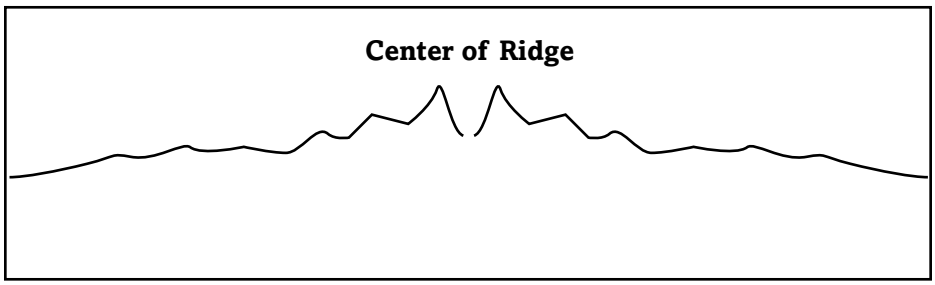
Section 2 Seafloor Spreading (continued)

Main Idea | **Details**

Evidence for Spreading

I found this information on page _____.

Label ***the diagram below to identify evidence for seafloor spreading. Add arrows to show the direction of spreading, and indicate where older rock and newer rock occur.***



I found this information on page _____.

Model ***the*** **polarity of Earth's magnetic field** ***today.***

- Draw a sphere to represent Earth.
- Label the north pole and south pole.
- Draw arrows indicating the direction in which magnetic lines of force enter and leave Earth.

Summarize ***how reversals in the direction of Earth's magnetic field have provided evidence for seafloor spreading.***

At times, the _____ that pass through Earth have _____. _____ of Earth's magnetic field are recorded in _____ that forms along _____. Scientists can detect _____ that are _____ to mid-ocean ridges. This occurs on _____.

Name _____ **Date** _____

Plate Tectonics

Section 3 Theory of Plate Tectonics

Benchmarks—SC.D.1.3.3: The student knows how conditions that exist in one system influence the conditions that exist in other systems. Also covers: SC.D.1.3.5, SC.H.1.3.1, SC.H.1.3.2, SC.H.1.3.6, SC.H.2.3.1

Scan *the headings and illustrations in Section 3. List four features caused by plate tectonics.*

1. _____ **3.** _____

2. _____ **4.** _____

Review Vocabulary

Define *the review terms to show their scientific meanings.*

converge _____

diverge _____

transform _____

New Vocabulary

Use your book to define the following terms.

plate _____

_____

plate tectonics _____

_____

lithosphere _____

_____

asthenosphere _____

_____

convection current _____

_____

Academic Vocabulary

Use a dictionary to define rigid.

rigid _____

Name _____ **Date** _____

Section 3 Theory of Plate Tectonics (continued)

Main Idea | **Details**

Plate Tectonics

I found this information on page _____.

Complete ***the following outline on the theory of*** **plate tectonics.**

I. A new theory

A. In the 1960s, a new theory called _____ was developed.

B. Earth's _____ and part of the _____ are broken into sections called _____, that move slowly.

II. Details about the theory

A. The layer of Earth that is broken into sections is called the _____.

B. The _____ is the plasticlike layer below the _____.

C. The rigid plates move over the _____.

Plate Boundaries

I found this information on page _____.

Compare and contrast ***the different plate boundaries by defining them side by side. Draw the plates of the world. Identify plate motion by using arrows.***

Divergent	Convergent	Transform

Name _____ **Date** _____

Section 3 Theory of Plate Tectonics (continued)

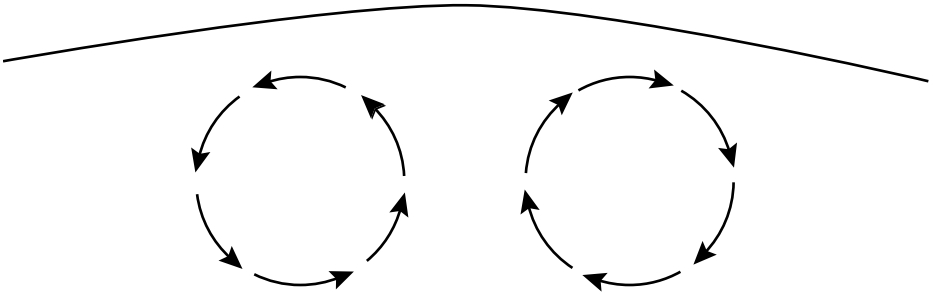
Main Idea

Details

Causes of Plate Tectonics

I found this information on page _____.

Label *the convection currents depicted below with* heating, rising, cooling, *and* sinking.



Features Caused by Plate Tectonics

I found this information on page _____.

Organize *information to describe features caused by plate tectonics. Fill in the table below.*

Feature	Description
Rift valley	
Folded and faulted mountains	
Strike-slip faults	

Testing for Plate Tectonics

I found this information on page _____.

Summarize *how the Satellite Laser Ranging System measures plate movement.*

_____

_____

_____

_____

_____

Name _____ **Date** _____

Tie It Together

Synthesize It

Your book has a picture showing how continents may have drifted. It shows their positions 250 million years ago, 125 million years ago, and at the present. Work with a partner to trace the paths that the continents have taken. Then extend their paths forward in time to project where they may be 125 million years from now. Draw a map in the space below, showing your prediction.

Name _____ **Date** _____

Plate Tectonics Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Plate Tectonics	After You Read
• Fossil evidence provides support for the idea that continents have moved over time.	
• New seafloor is continuously forming while old seafloor is being destroyed.	
• Earth's crust is broken into sections called plates.	
• Rock flows deep inside Earth.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things you have learned about plate tectonics.**

_____

_____

_____

_____

Name _____ Date _____

Measurement

Sunshine State Standards—SC.A.1: The student understands that all matter has observable, measurable properties.
Also covers: SC.H.1

Before You Read

Before you read the chapter, respond to these statements.

1. Write **A** if you agree with the statement.
2. Write **D** if you disagree with the statement.

Before You Read	Measurement
	• Measurements are recorded by using numbers.
	• Most scientists use inches and feet to record length.
	• Measurements can be precise but not accurate.
	• A bar graph shows parts of a whole.

Construct the Foldable as directed at the beginning of the chapter.

Science Journal

As a pit crew member, how can you determine how far a car travels per liter of fuel? Explain in your Science Journal how you would do this.

Name _____ **Date** _____

Measurement

Section 1 Description and Measurement

Benchmarks—SC.A.1.3.1: The student identifies various ways in which substances differ. Also covers: SC.A.1.3.2, SC.A.1.3.3, SC.H.1.3.4, SC.H.1.3.5, SC.H.1.3.7

Skim *Section 1 of your book. Write three questions that come to mind from reading the headings of this section.*

1. _____

2. _____

3. _____

Review Vocabulary

Define description *to show its scientific meaning.*

description _____

_____

New Vocabulary

Define each vocabulary term.

estimation _____

_____

mass _____

_____

volume _____

_____

Academic Vocabulary

Use a dictionary to define accurate. *Use* accurate *in an original sentence to show its scientific meaning.*

accurate _____

_____

_____

Name _____ **Date** _____

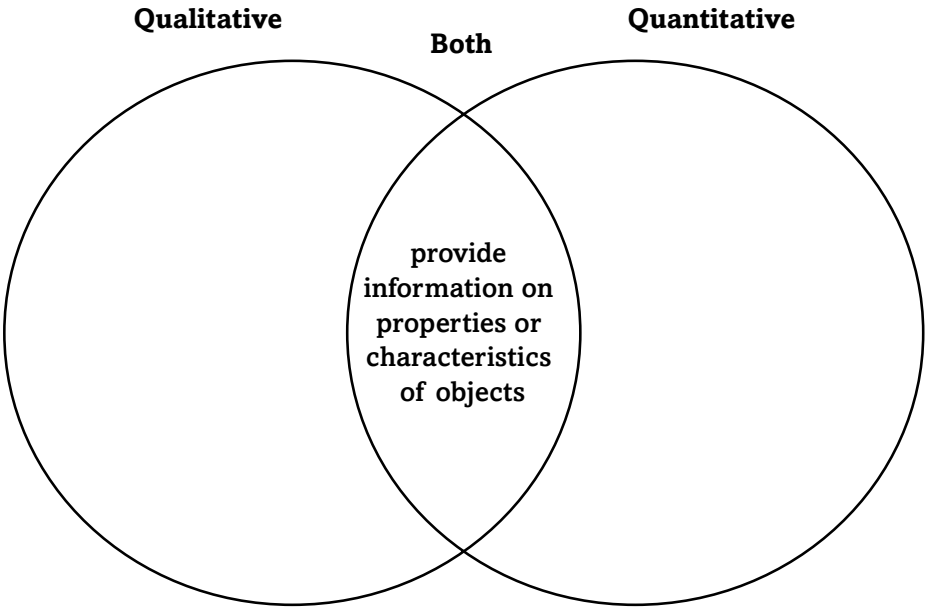
Section 1 Description and Measurement (continued)

Main Idea | **Details**

Describing Properties

I found this information on page _____.

Compare and contrast qualitative *and* quantitative descriptions. ***Fill in the Venn diagram to explain how these two types of description are the same and different. Include both a simple definition and an example of each type of description.***



Define measurement. ***Then give five examples of things that are measured.***

Measurement is _____.

Examples:

1. _____
2. _____
3. _____
4. _____
5. _____

Estimation

I found this information on page _____.

Distinguish ***two situations in which you might use*** estimation.

1. _____
2. _____

Name _____ **Date** _____

Section 1 Description and Measurement (continued)

Main Idea | **Details**

Units of Measurement

I found this information on page _____.

Identify ***the quantity each base unit and symbol is used to measure. Fill in the first column of the table with the proper quantity.***

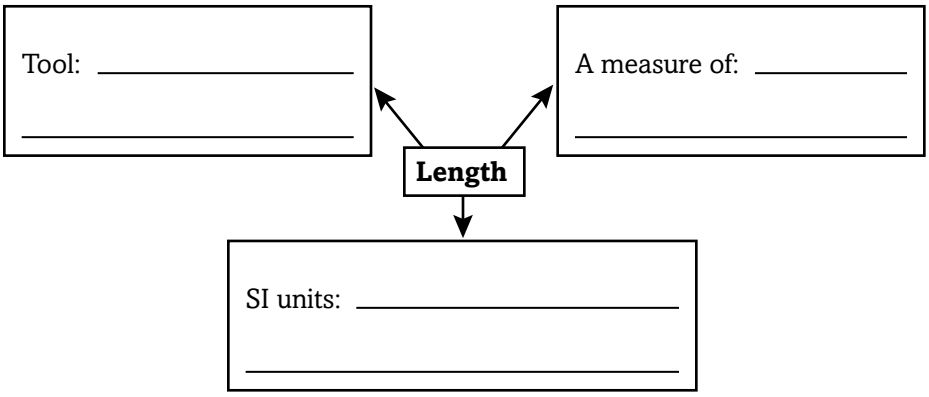
amount of substance electric current intensity of light
length mass temperature time

SI Base Units		
Quantity	**Unit**	**Symbol**
	meter	m
	kilogram	kg
	kelvin	K
	second	s
	ampere	A
	mole	mol
	candela	cd

Length

I found this information on page _____.

Organize ***information about*** **length** ***in the graphic organizer.***



Volume

I found this information on page _____.

Distinguish ***methods of finding*** **volume.**

Regular square or rectangular objects: _____

Irregular objects: _____

Name _____ **Date** _____

Section 1 Description and Measurement (continued)

Main Idea | **Details**

Mass and Weight

I found this information on page _____.

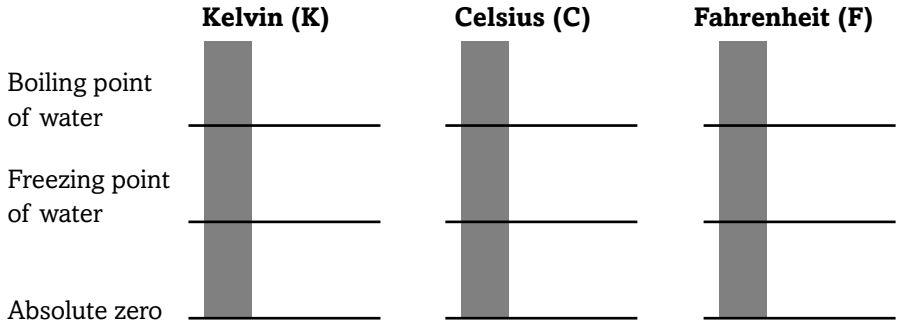
Contrast mass *and* weight. *Complete the table.*

	Mass	Weight
What does it measure?		
What SI units are used to measure it?		
Is it the same everywhere?		

Temperature

I found this information on page _____.

Label *the diagrams to identify important temperatures in the three temperature scales. Circle the scale that is used for SI units.*



Time and Rate

I found this information on page _____.

Analyze *the relationship between* time *and* rate.

Time is measured in _____ in the SI system. It tells _____. A rate is _____ _____.

SYNTHESIZE IT

Explain why it is important to have a standard system of units for scientists to use for measuring.

_____

_____

_____

Name _____ **Date** _____

Measurement

Section 2 Mathematics and Measurement

Benchmarks—SC.H.1.3.4: The student knows that accurate record keeping, openness, and replication are essential to maintaining an investigator's credibility.

Read *the* What You'll Learn *objectives of Section 2. Write questions that come to mind from reading these statements.*

1. _____

2. _____

Review Vocabulary

Define unit *to show its scientific meaning.*

unit _____

New Vocabulary

Define each vocabulary term.

accuracy _____

precision _____

significant digits _____

Academic Vocabulary

Use a dictionary to define significant. *Use* significant *in an original sentence to show its scientific meaning.*

significant _____

Name _____ **Date** _____

Main Idea

Details

Calculations

I found this information on page _____.

Summarize *why the number of recorded digits matters.*

_____

_____

_____

Significant Digits

I found this information on page _____.

Complete *the table of rules for using* **significant digits.** ***Identify each category as always, sometimes, or never significant.***

Type of Digit	Significant?
non-zero digits	
zeros between other digits	
zeros at the beginning of a number	
zeros in whole numbers	

I found this information on page _____.

Summarize ***how to use significant digits in multiplication and division and in addition and subtraction.***

When multiplying and dividing, the number of significant digits in the answer is determined by _____ _____ in the problem. In addition and subtraction, the number of significant digits in the answer is determined by _____.

I found this information on page _____.

Sequence ***the steps to follow when rounding a measurement.***

Look at the digit _____ _____.

If the digit is less than 5, _____ _____.

If the digit is 5 or greater, _____ _____.

Name _____ **Date** _____

Section 2 Mathematics and Measurement (continued)

Main Idea

Details

Calculations with Units

I found this information on page _____.

Summarize *how to handle units when adding, subtracting, multiplying, or dividing measurements.*

Adding	
Subtracting	
Multiplying	
Dividing	

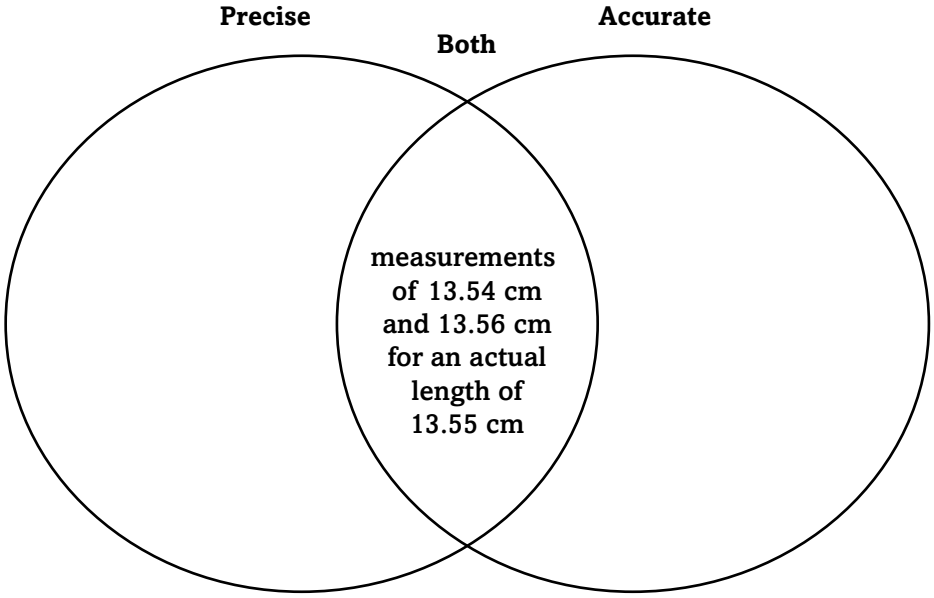
Precision and Accuracy

I found this information on page _____.

Contrast precision *and* accuracy. *Define each term. Then complete the Venn diagram with examples of measurements that are precise, accurate, and both precise and accurate.*

Precision is _____.

Accuracy is _____.



Name _____ **Date** _____

Measurement

Section 3 Tables and Graphs

Benchmarks—SC.A.1.3.1: The student identifies various ways in which substances differ. Also covers: SC.H.1.3.4, SC.H.1.3.5

Scan *Section 3. Write two facts you discovered as you scanned the section.*

1. _____

2. _____

Review Vocabulary

Use **axis** *in an original sentence to show its scientific meaning.*

axis _____

New Vocabulary

Define *each vocabulary term.*

circle graph _____

dependent variable _____

bar graph _____

line graph _____

independent variable _____

Academic Vocabulary

Use a dictionary to define **category**. *Use category in an original sentence to show its scientific meaning.*

category _____

Name _____ **Date** _____

Section 3 Tables and Graphs (continued)

Main Idea

Tables and Graphs

I found this information on page _____.

Details

Complete *the outline to describe tables and graphs.*

I. Tables

A. _____

B. _____

II. Graphs

A. _____

B. _____

Creating Line Graphs

I found this information on page _____.

Create *a sample* line graph. *Label the* x*-axis and* y*-axis.*

Summarize *what kind of data can be shown on a line graph.*

_____

_____

_____

Name _____ **Date** _____

Section 3 Tables and Graphs (continued)

Main Idea	Details
Bar Graphs *I found this information on page* _____.	**Model** *a* bar graph *of your own. Write a caption explaining each part of the graph.*
Circle Graphs *I found this information on page* _____.	**Sequence** *the steps to follow to create a* circle graph. **1.** _____ **2.** _____ **3.** _____
I found this information on page _____.	**Evaluate** *why it is important to examine the* scale *on a graph. Explain why a broken scale is sometimes useful.*

SYNTHESIZE IT

Compare the two graphs of U.S. endangered species per year in your book. Which do you think is more accurate? Which shows the data most clearly? Why? What other type of graph might you use to show these data?

Name _____ **Date** _____

Measurement Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write **D** if you disagree with the statement.

Measurement	After You Read
• Measurements are recorded by using numbers.	
• Most scientists use inches and feet to measure length.	
• Measurements can be precise but not accurate.	
• A bar graph shows parts of a whole.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things you have learned about measurement.**

_____

_____

_____

_____

Name _____ Date _____

Understanding Matter

Sunshine State Standards—SC.A.1: The student understands that all matter has observable, measurable properties.

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	Understanding Matter
	• Plasma is one of the four states of matter.
	• A campfire results in chemical changes.
	• Melting is a physical change.
	• Flammability is a physical property.

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Picture a SCUBA diver swimming underwater. How many states of matter would there be? List as many as possible.

Name _____ **Date** _____

Understanding Matter

Section 1 Physical Properties and Changes

Benchmarks—SC.A.1.3.1: The student identifies various ways in which substances differ. Also covers: SC.A.1.3.4, SC.A.1.3.5, SC.A.1.3.6, SC.H.1.3.4, SC.H.1.3.5, SC.H.1.3.7, SC.H.2.3.1

Skim *Section 1 in your book. Write three questions that come to mind from reading the headings and examining the illustrations.*

1. _____
2. _____
3. _____

Review Vocabulary

Define mass *to show its scientific meaning.*

mass _____

New Vocabulary

Use your book to define the following terms.

physical property _____

density _____

states of matter _____

melting point _____

boiling point _____

physical change _____

Academic Vocabulary

Use a dictionary to define unique.

unique _____

Name _____ **Date** _____

Section 1 Physical Properties and Changes (continued)

Main Idea | **Details**

Using Your Senses

I found this information on page _____.

Complete *the diagram to identify proper use of your senses in the laboratory.*

Using Your Senses in the Laboratory

Physical Properties

I found this information on page _____.

Summarize *this section's discussion of* **physical properties** *by completing the outline below.*

I. Physical properties

A. Properties that can be seen

1. _____

2. shape

3. _____

4. Degree to which light can pass through

a. _____: you can see clearly through it

b. translucent: _____

_____

c. _____

_____

B. Properties of metals

1. _____: ability to be shaped

2. _____: ability to be drawn into wires

C. Measurable properties

1. length: measured with _____

2. _____: the amount of matter

3. _____: the amount of space an object takes up

4. _____: the amount of mass in a given volume

Name _____ **Date** _____

Section 1 Physical Properties and Changes (continued)

Main Idea — Details

States of Matter

I found this information on page _____.

Describe *the movement of particles in each state of matter. Then complete the statement about plasma.*

State of Matter	Motion of Particles
Solid	Particles vibrate in a fixed place.
Liquid	
Gas	

Plasma is common in _____, but less common on _____.

Physical Changes

I found this information on page _____.

Summarize physical changes *by completing the blanks.*

State of Matter	Physical Change	State of Matter
solid	melting →	_____
_____	boiling →	_____
liquid	_____ →	solid
_____	condensation →	_____
solid	_____ →	gas

Using Physical Properties

I found this information on page _____.

Complete *this sentence.*

Physical properties can be used to (1) _____, (2) _____, and (3) _____ substances.

CONNECT IT

Analyze the importance of being able to sort laundry before washing. Which two physical properties of the laundry could be affected by washing? Explain.

_____

_____

_____

_____

Name _____ **Date** _____

Understanding Matter

Section 2 Chemical Properties and Changes

Benchmarks—SC.A.1.3.5: The student knows the difference between a physical change in a substance and a chemical change. Also covers: SC.A.1.3.1, SC.A.1.3.6, SC.H.1.3.1, SC.H.1.3.5, SC.H.1.3.6, SC.H.3.3.4, SC.H.3.3.5

Scan *the headings of Section 2. Identify three basic topics that will be covered.*

1. _____

2. _____

3. _____

Review Vocabulary

Define *the following terms. Then use each term in an original sentence.*

heat _____

New Vocabulary

chemical property _____

chemical change _____

Law of Conservation of Mass _____

Academic Vocabulary

undergo _____

Name _____ **Date** _____

Section 2 Chemical Properties and Changes (continued)

Main Idea | **Details**

Ability to Change

I found this information on page _____.

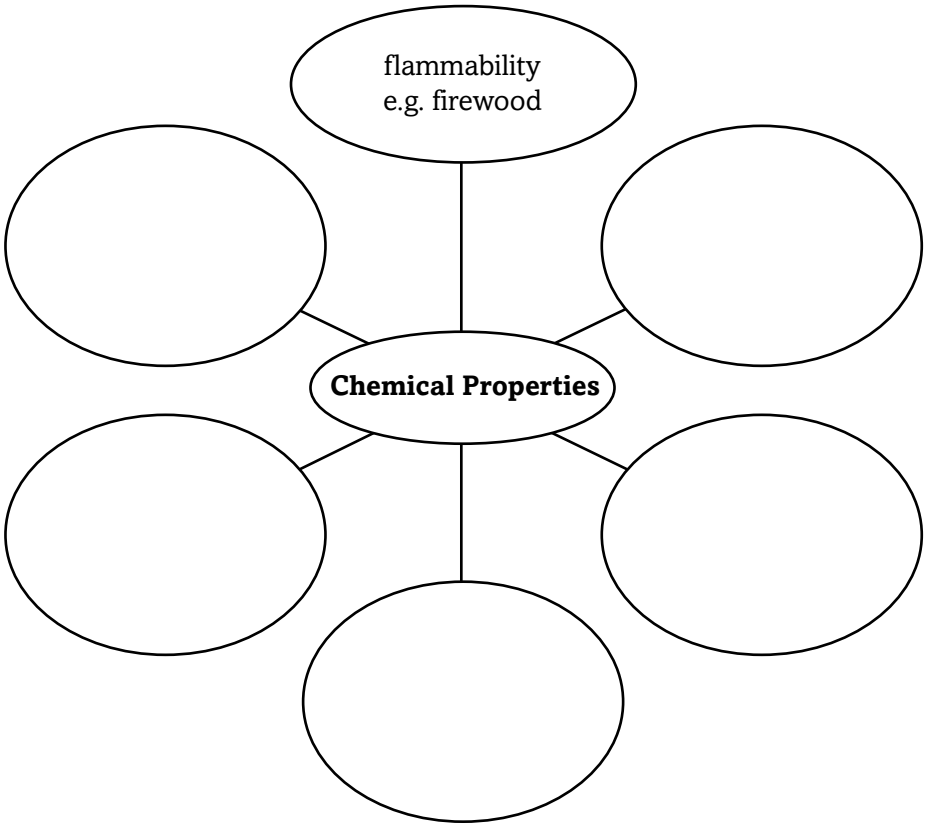
Contrast *a* **chemical change** *with a* **physical change** *by completing the chart.*

Physical Change and Chemical Change		
Type of change	**Result of change**	**Example**
Physical change	Properties of a substance change but the identity of the substance remains the same.	
Chemical change		

Common Chemical Properties

I found this information on page _____.

Organize *information about chemical properties and give an example of each.*



Name _____ **Date** _____

Section 2 Chemical Properties and Changes (continued)

Main Idea

Something New

I found this information on page _____.

Details

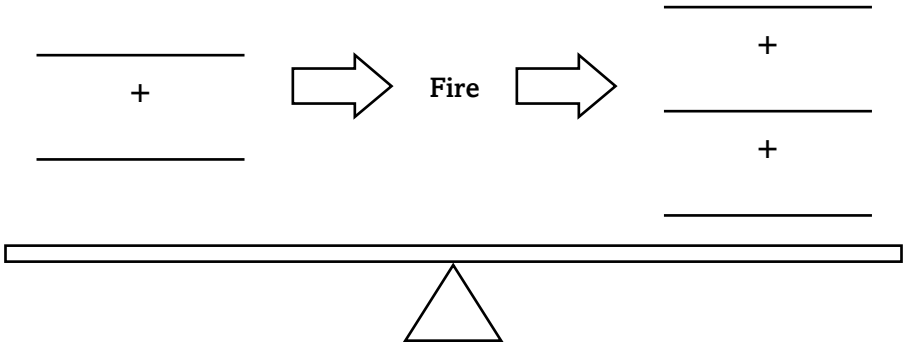
Create *a graphic organizer to identify six signs of* chemical change.

The Law of Conservation of Mass

I found this information on page _____.

Model *the* law of conservation of matter, *using the words below to complete the example of a wood fire.*

gases wood ashes oxygen smoke



Connect It

When you add water to dry plaster of Paris, does a physical or a chemical change occur? Explain your answer.

_____

_____

_____

_____

Name _____ **Date** _____

Understanding Matter Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Understanding Matter	After You Read
• Plasma is one of the four states of matter.	
• A campfire results in chemical changes.	
• Melting is a physical change.	
• Flammability is a physical property.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT

After reading this chapter, identify three things that you have learned about physical and chemical properties.

_____

_____

_____

_____

Name _____ Date _____

Atoms, Elements, and the Periodic Table

Sunshine State Standards—SC.A.1: The student understands that all matter has observable, measurable properties; SC.A.2: The student understands that the types of forces that act on an object and the effect of that force can be described, measured, and predicted; SC.H.2

Before You Read

Preview the chapter title, section titles, and the section headings. List at least two ideas for each section in each column.

K What I know	W What I want to find out

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Make a list of three questions that you think of when you see hot air balloons.

Name _____ **Date** _____

Atoms, Elements, and the Periodic Table

Section 1 Structure of Matter

Benchmarks—SC.A.2.3.2: The student knows the general properties of the atom (a massive nucleus of neutral neutrons and positive protons surrounded by a cloud of negative electrons) and accepts that single atoms are not visible. Also covers: SC.D.1.3.5, SC.H.1.3.1, SC.H.1.3.5, SC.H.1.3.6, SC.H.3.3.4, SC.H.3.3.5

Read *the* What You'll Learn *statements for Section 1. Write three questions that come to mind. Look for answers to each question as you read the section.*

1. _____

2. _____

3. _____

Review Vocabulary

Define density *to show its scientific meaning.*

density _____

New Vocabulary

Write the correct vocabulary word next to each definition.

_____ small particle that makes up most kinds of matter

_____ uncharged particle in the nucleus of an atom

_____ invisible, negatively charged particle

_____ anything that has mass and takes up space

_____ statement that matter is not created or destroyed, but only changes its form

_____ positively charged central part of an atom

_____ positively charged particle in the nucleus of an atom

Academic Vocabulary

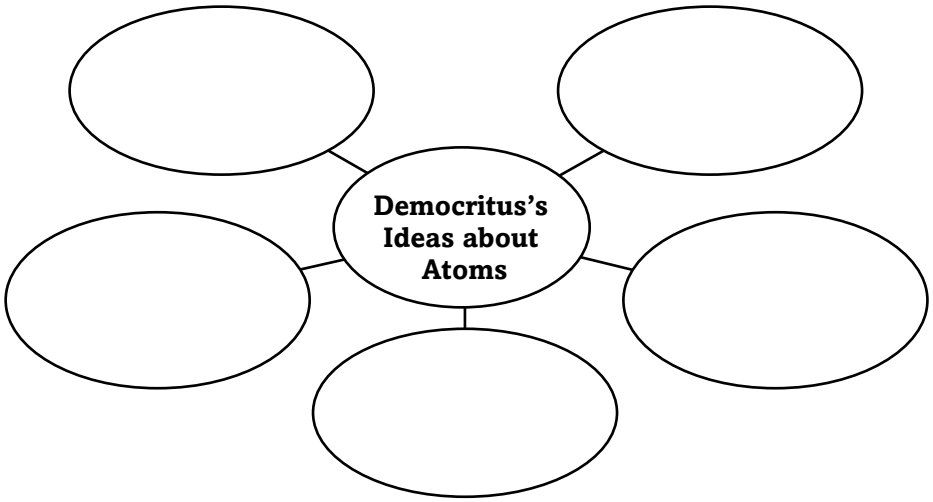
Use a dictionary to define **theory**.

theory _____

_____

Name _____ **Date** _____

Section 1 Structure of Matter (continued)

Main Idea	Details
What is matter? What isn't matter? *I found this information on page _____.*	**State** *the 2 characteristics common to all matter.* 1. _____ 2. _____ **Label** *each example as* matter *or* not matter. air _____ light _____ heat _____ water _____
What makes up matter? *I found this information on page _____.*	**Organize** *Democritus's ideas about atoms. Complete the concept map.*  **Identify** *the 2 main ideas in Dalton's atomic theory of matter.* 1. _____ 2. _____ **Summarize** *Lavoisier's experiment and the conclusion he drew from it.* **Experiment:** → **Conclusion:**

Name _____ **Date** _____

Section 1 Structure of Matter (continued)

Main Idea

Details

Models of the Atom

I found this information on page _____.

Compare and contrast *the Thomson and Rutherford atomic models.*

_____

_____

_____

_____

I found this information on page _____.

Create *a drawing of the Bohr atom. Label the* positively charged, negatively charged, *and* neutral parts.

Identify *how the modern model of the atom differs from the Bohr model.*

_____

_____

Analyze It

Make a relative time line of atomic models. List the models from oldest to youngest. State the new discovery that was made with the development of each new model.

Name _____ **Date** _____

Atoms, Elements, and the Periodic Table

Section 2 The Simplest Matter

Benchmarks—SC.A.2.3.2; SC.H.2.3.1: The student recognizes that patterns exist within and across systems.
Also covers: SC.A.1.3.1, SC.H.1.3.1, SC.H.3.3.5

Skim *the headings and subheadings in Section 2. Write three predictions about what you will learn in this section.*

1. _____

2. _____

3. _____

Review Vocabulary

Use **mass** *in a scientific sentence.*

mass

_____

_____

New Vocabulary

Write the correct vocabulary term next to each definition.

_____ matter made of only one kind of atom

_____ number of protons in the nucleus of each atom of an element

_____ atom of an element with a different number of neutrons

_____ the number of protons plus the number of neutrons in an atom

_____ weighted average mass of the isotopes of an element

_____ element that generally has a shiny luster and is a good conductor of heat and electricity

_____ element that is usually dull in appearance and is a poor conductor of heat and electricity

_____ element that has characteristics of metals and nonmetals

Academic Vocabulary

Use a dictionary to define **fundamental.**

fundamental

_____

_____

Name _____ **Date** _____

Section 2 The Simplest Matter (continued)

Main Idea

Details

The Elements

I found this information on page _____.

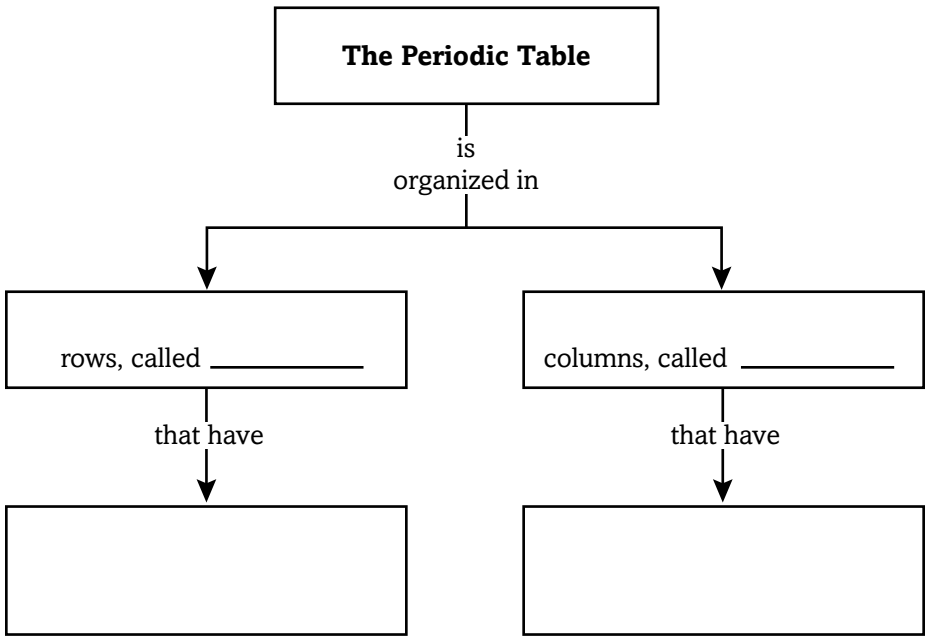
Summarize *three key facts about elements.*

1. _____
2. _____
3. _____

The Periodic Table

I found this information on page _____.

Complete *the graphic organizer to show how the periodic table is organized.*



Identifying Characteristics

I found this information on page _____.

Label *the square below with information you would find about chlorine on the periodic table. Identify each piece of information and explain what you can learn from it.*

Name _____ **Date** _____

Section 2 The Simplest Matter (continued)

Main Idea

Details

Identifying Characteristics

I found this information on page _____.

Contrast *the three isotopes of hydrogen. Complete the table.*

Isotope	Protium	Deuterium	Tritium
Number of protons			
Number of neutrons			
Mass number			

Classification of Elements

I found this information on page _____.

Summarize *the 4 characteristics of each type of element in the table below.*

Metals	Nonmetals	Metalloids
1.		
2.		
3.		
4.		

SYNTHESIZE IT

Metals, nonmetals, and metalloids are located in specific areas of the periodic table. Use what you know about elements and the periodic table to explain why this is.

_____

_____

_____

_____

Name _____ **Date** _____

Atoms, Elements, and the Periodic Table

Section 3 Compounds and Mixtures

Benchmarks—SC.A.1.3.1: The student identifies various ways in which substances differ.
Also covers: SC.H.1.3.5, SC.H.2.3.1, SC.H.3.3.5

Scan *Section 3 using the checklist below.*

- ☐ Read all section headings.
- ☐ Read all bold words.
- ☐ Read all charts and graphs.
- ☐ Look at the pictures.
- ☐ Think about what you already know about compounds and mixtures.

Write two facts you learned about compounds and mixtures as you scanned the section.

1. _____

2. _____

Review Vocabulary

Define formula. *Then use the term in an original sentence to show its scientific meaning.*

formula _____

_____

_____

New Vocabulary

Use each vocabulary term in a scientific sentence.

substance _____

compound _____

mixture _____

Academic Vocabulary

Use a dictionary to define symbol. *Give an example of a symbol you have used in science.*

symbol _____

_____

Name _____ **Date** _____

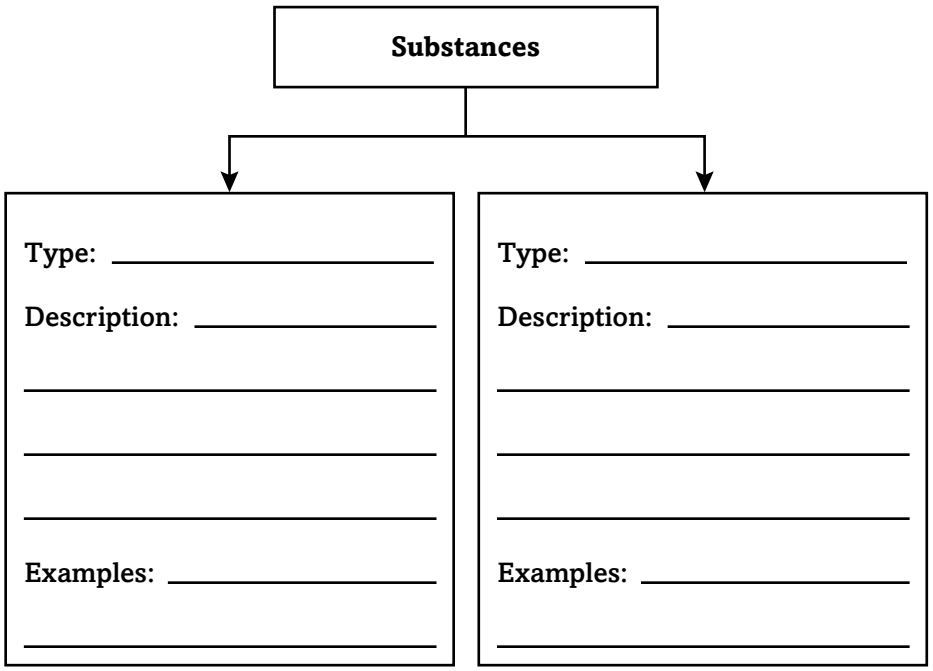
Section 3 Compounds and Mixtures (continued)

Main Idea | **Details**

Substances

I found this information on page _____.

Classify *the types of substances. Complete the graphic organizer by describing each type and giving two examples.*



I found this information on page _____.

Summarize *what information is contained in the formula of a compound.*

Analyze *the formula of each compound. Identify which elements are in each compound and how many atoms of each element make up one unit of the compound.*

	Water	Hydrogen peroxide	Carbon dioxide	Carbon monoxide
Formula	H_2O	H_2O_2	CO_2	CO
Atoms and elements				

Name _____ **Date** _____

Section 3 Compounds and Mixtures (continued)

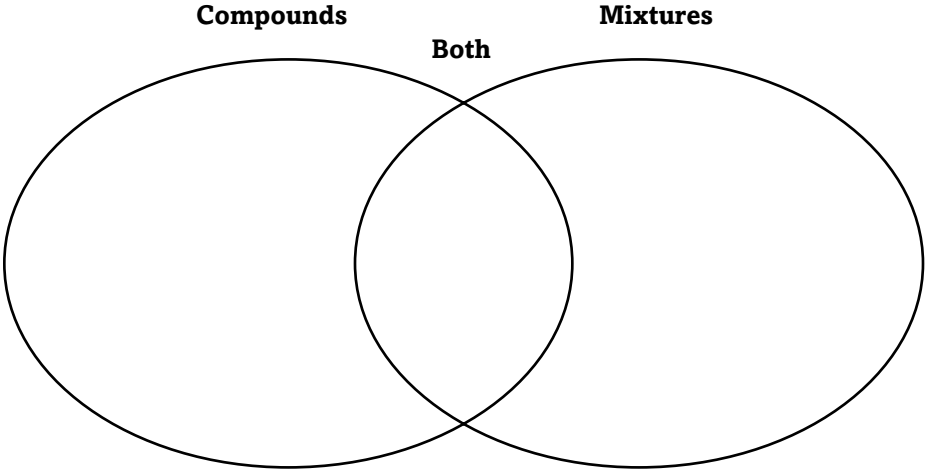
Main Idea

Details

Mixtures

I found this information on page _____.

Contrast *compounds and mixtures. Complete the Venn diagram with at least 5 facts.*



I found this information on page _____.

Summarize *characteristics of homogeneous and heterogeneous mixtures.*

A homogeneous mixture _____.

You _____ see the individual parts. A heterogeneous mixture _____.

You _____ see the individual parts.

Examples of a homogeneous mixture: _____

_____

Examples of a heterogeneous mixture: _____

_____

CONNECT IT

Give examples of two mixtures and two compounds that are important to your everyday life.

_____

_____

_____

Name _____ **Date** _____

Tie It Together

The formulas for three substances are listed below.

- *Describe the properties of each substance as thoroughly as you can.*
- *Identify each as an element or a compound.*
- *Write the number of protons in the nuclei of the element or elements in each substance.*
- *State whether those elements are metals, nonmetals, or metalloids, and any properties you can infer for those elements.*
- *Use a periodic table.*

1. Water (H_2O): _____

2. Table salt (NaCl): _____

3. Gold (Au): _____

Name _____ **Date** _____

Atoms, Elements, and the Periodic Table Chapter Wrap-Up

Review the ideas you listed in the table at the beginning of the chapter. Cross out any incorrect information in the first column. Then complete the table by filling in the third column. How do your ideas now compare with those you provided at the beginning of the chapter?

K What I know	W What I want to find out	L What I learned

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things that you have learned about atoms and elements.**

_____

_____

_____

Name _____ **Date** _____

Motion, Forces, and Simple Machines

Sunshine State Standards—SC.G.2: The student understands that the types of force that act on an object and the effect of that force can be described . . . . Also covers: SC.A.1, SC.C.1

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	Motion, Forces, and Simple Machines
	• Motion is always described relative to an object that is assumed not to be moving.
	• Velocity changes when either speed or direction of motion changes.
	• The direction of a force is opposite to the direction of the push or pull.
	• A compound machine is a combination of simple machines.

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Write a paragraph comparing the motion of a ball and a paper airplane being thrown high in the air and returning to the ground.

Name _____ **Date** _____

Motion, Forces, and Simple Machines

Section 1 Describing Motion

Benchmarks—SC.1.3.1: The student knows that the motion of an object can be described by its position, direction of motion, and speed. Also covers: SC.H.1.3.5

Scan *the headings and bold words in Section 1. Write three facts you discovered about motion as you scanned this section.*

1. _____
2. _____
3. _____

Review Vocabulary

Define galaxy *to show its scientific meaning.*

galaxy _____

New Vocabulary

Use your book to define the following terms. Then write a sentence using each term.

speed _____

_____

_____

velocity _____

_____

_____

acceleration _____

_____

_____

Academic Vocabulary

Use your book or a dictionary to define initial.

initial _____

Name _____ **Date** _____

Section 1 Describing Motion (continued)

Main Idea	Details
Motion Is Relative *I found this information on page* _____.	**Model** relative motion *by sketching an object in motion relative to an object at rest. Label the object at rest as the* reference point.
Motion Is a Change in Position *I found this information on page* _____.	**Summarize** motion *and* distance *by completing the paragraph.* Motion occurs when the _____ of an object _____. The _____ an object travels is the _____ between its _____ position and its _____ position.
Speed *I found this information on page* _____.	**Define** *the term* average speed *by completing the equation.* average speed (m/s) = _____

Name _____ **Date** _____

Section 1 Describing Motion (continued)

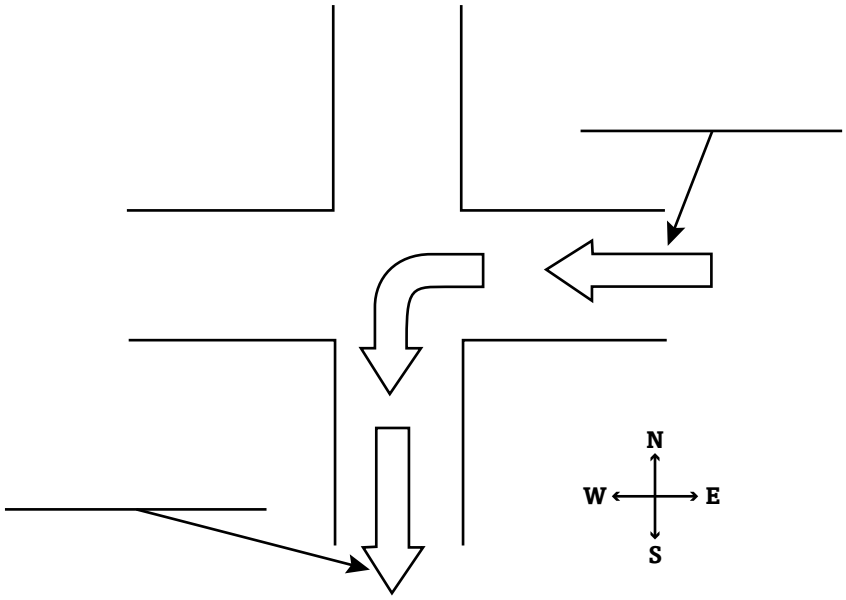
Main Idea

Details

Velocity

I found this information on page _____.

Identify *and label the velocity of a car moving at 50 km/h at the two different points in the diagram. State what is happening as the car turns the corner.*



As the car turns the corner, _____.

Acceleration

I found this information on page _____.

Complete *the graphic organizer to identity the factors that cause* acceleration.

Acceleration occurs when an object _____.
_____.
_____.

SUMMARIZE IT

List four factors used to describe motion.

_____

_____

Name _____ **Date** _____

Motion, Forces, and Simple Machines

Section 2 Forces and Motion

Benchmarks—SC.C.2.3.2: The student knows common contact forces. Also covers: SC.A.1.3.2, SC.C.2.3.1, SC.C.2.3.3, SC.2.3.5, SC.C.2.3.6, SC.C.2.3.7, SC.H.1.3.4, SC.H.1.3.5, SC.H.1.3.7

Predict *three things that might be discussed in Section 2 as you read the headings.*

1. _____
2. _____
3. _____

Review Vocabulary

Define gravitation *to show its scientific meaning.*

gravitation _____

New Vocabulary

Use your book to define the following terms.

force _____

balanced forces _____

inertia _____

friction _____

gravity _____

Academic Vocabulary

Use your book or a dictionary to define mechanism.

mechanism _____

Name _____ **Date** _____

Section 2 Forces and Motion (continued)

Main Idea	Details

What is a force?

I found this information on page _____.

Summarize *the characteristics that describe forces by completing the list below.*

1. A force is _____.

2. All forces have a _____ and a _____.

3. The size of a force is called the _____ of the force.

4 In SI units, the strength of a force is measured in _____.

Combining Forces

I found this information on page _____.

Model *the two ways to* **combine forces** *by sketching and labeling two diagrams. Use arrows to indicate forces, and indicate the direction of net force.*

A.	B.

Balanced and Unbalanced Forces and Unbalanced Forces Cause Motion to Change

I found this information on page _____.

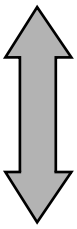
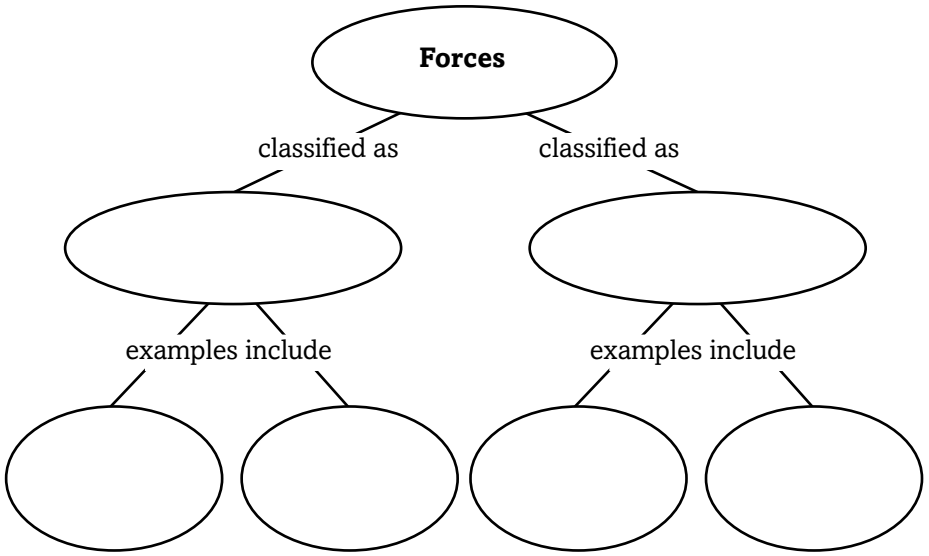
Distinguish **balanced forces** *and* **unbalanced forces** *on an object by completing the paragraph below. Then draw a model to represent balanced forces on an object, using arrows to indicate forces.*

When forces are _____, there is zero net force on an object and the object does not _____. Unbalanced forces can cause an object to either move, or _____.

Example of balanced forces:

Name _____ **Date** _____

Section 2 Forces and Motion (continued)

Main Idea	Details
Inertia *I found this information on page* _____.	**Label** *the arrow below to show the relationship between* mass *and* inertia. Mass increases.  Inertia _____. Mass decreases. Inertia _____.
Contact Forces Non-contact Forces *I found this information on page* _____.	**Organize** *information about the different* contact *and* noncontact forces *by completing the chart below.* 
Gravity *I found this information on page* _____.	**Complete** *the graphic organizer to identify factors that affect gravity.* Forces that affect gravity include _____. _____.

SUMMARIZE IT

Describe the relationship between mass and weight.

_____

_____

Name _____ **Date** _____

Motion, Forces, and Simple Machines

Section 3 Simple Machines

Benchmarks—SC.C.2.3.4: The student knows that simple machines can be used to change the direction or size of a force. Also covers: S.C.H.1.3.4, S.C.H.1.3.5, S.C.H.1.3.7, S.C.H.3.3.4

Skim *Section 3 of your book. Read the headings and look at the illustrations. Write three questions that come to mind.*

1. _____
2. _____
3. _____

Review Vocabulary

Define force *to show its scientific meaning.*

force _____

New Vocabulary

Write the vocabulary term that matches each definition.

_____ device that does work with only one movement

_____ number of times the input is multiplied by a machine

grooved wheel with a rope or cable wrapped around the groove

_____ rod or plank that pivots or rotates about a fixed point called the fulcrum

_____ simple machine that is a flat, sloped surface

Academic Vocabulary

Use your book or a dictionary to define **compound** *as an adjective.*

compound _____

Name _____ **Date** _____

Section 3 Simple Machines (continued)

Main Idea

Details

What is a simple machine?

I found this information on page _____.

Define machine. *Then complete the table to compare the two main types of machines.*

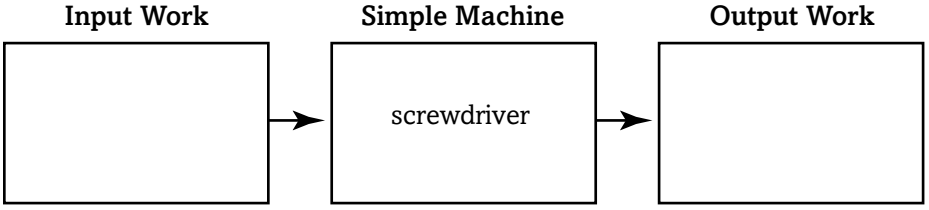
A machine is _____.

Machines		
Type	**Definition**	**Example**
Simple machine	device that uses only one movement to do work	
Compound machine		

Making Work Easier

I found this information on page _____.

Complete *the diagram to provide an example of* **input work** *and* **output work.** *Then complete the paragraph below.*



Output _____ is always less than input _____ because of _____. Work is made easier, however, because a machine can make output _____ greater than input _____.

The Pulley

I found this information on page _____.

Model *a* **combination pulley** *made of two wheels by sketching it below. Then provide a caption to describe how output force is made greater than input force.*

Name _____ **Date** _____

Section 3 Simple Machines (continued)

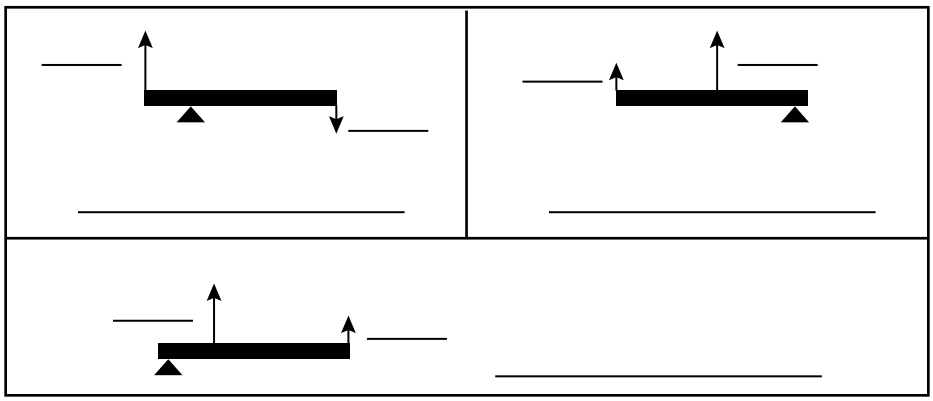
Main Idea

Details

The Lever

I found this information on page _____.

Label *the arrows on each of the diagrams below as either input force (F_i) or output force (F_o). Then identify the* class of lever *that each diagram represents.*

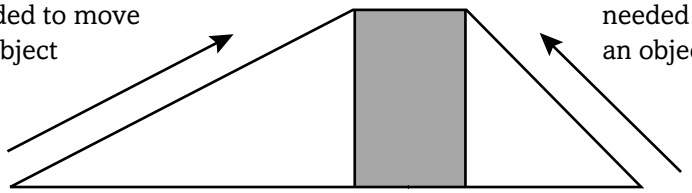


The Inclined Plane

I found this information on page _____.

Identify *which* inclined plane *would need more force to move an object up it. Complete the blanks below with* less *or* greater.

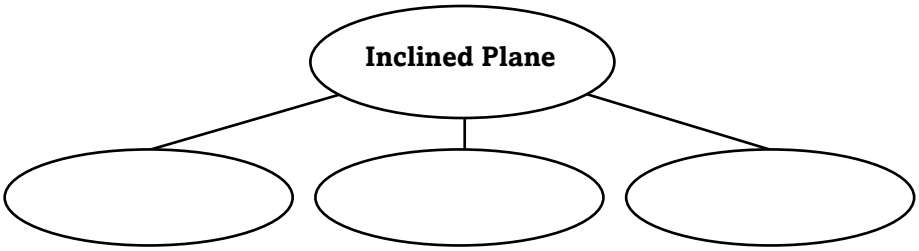
_____ force needed to move an object



_____ force needed to move an object

I found this information on page _____.

Complete *the graphic organizer to identify three examples of the inclined plane.*



Synthesize It

Identify one simple machine and one compound machine in your classroom.

_____

_____

Name _____ **Date** _____

Tie It Together

Design an Experiment

Design an experiment to examine the effect of different variables on the speed and/or distance that a marble or ball bearing travels. Your variables might include such things as the height and/or length of a ramp that is used to generate force, a smooth or rough surface, or the mass of the marbles and/or ball bearings used in the experiment.

Name _____ **Date** _____

Motion, Forces, and Simple Machines

Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Motion, Forces, and Simple Machines	After You Read
• Motion is always described relative to an object that is assumed not to be moving.	
• Velocity changes when either speed or direction of motion changes.	
• The direction of a force is opposite to the direction of the push or pull.	
• A compound machine is a combination of simple machines.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things that you have learned about motion, forces, and simple machines.**

_____

_____

_____

Name _____ **Date** _____

Energy

Sunshine State Standards—SC.A.2: The student understands the basic principles of atomic theory. Also covers: SC.B.1

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	Energy
	• A moving object has energy.
	• Energy can change forms.
	• Temperature is a form of energy.
	• Conduction occurs when particles collide.

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

List three changes that you have seen occur today, and describe what changed.

Name _____ **Date** _____

Energy

Section 1 Energy Changes

Benchmarks—SC.A.2.3.3: The student knows that radiation, light, and heat are forms of energy used to cook food, treat diseases, and provide energy. Also covers: SC.B.1.3.1, SC.B.1.3.2, SC.B.1.3.4, SC.B.2.3.1

Scan *the headings in Section 1 of your book. Then, write four questions about energy. Try to answer your questions as you read.*

1. _____
2. _____
3. _____
4. _____

Review Vocabulary

Define energy transfer *using your book or a dictionary.*

energy transfer _____

_____

New Vocabulary

Use your book or a dictionary to define the vocabulary words.

energy _____

_____

kinetic energy _____

_____

potential energy _____

_____

law of conservation of energy _____

_____

Academic Vocabulary

Use a dictionary to define transform.

transform _____

_____

Name _____ **Date** _____

Section 1 Energy Changes (continued)

Main Idea	Details
Energy *I found this information on page _____.*	**Identify** *three changes caused by energy. Use your book to help you.* **1.** _____ **2.** _____ **3.** _____
Kinetic Energy *I found this information on page _____.*	**Compare** *the effects of mass and speed on kinetic energy by filling in the blanks below with the terms* **more** *or* **less.** A moving object with *more* mass has _____ kinetic energy. A moving object with *less* mass has _____ kinetic energy. A moving object moving with _____ speed has *more* kinetic energy. A moving object moving with _____ speed has *less* kinetic energy.
Potential Energy and **Converting Potential and Kinetic Energy** *I found this information on page _____.*	**Create** *a diagram in the space below that shows the effect of position and gravity on potential and kinetic energy. If you need help, refer to the picture of a ski slope in your book. Be sure to show the following points in your diagram:* • where potential energy is increasing and decreasing • where kinetic energy is increasing and decreasing • where potential energy is the greatest • where kinetic energy is the least

Name _____ **Date** _____

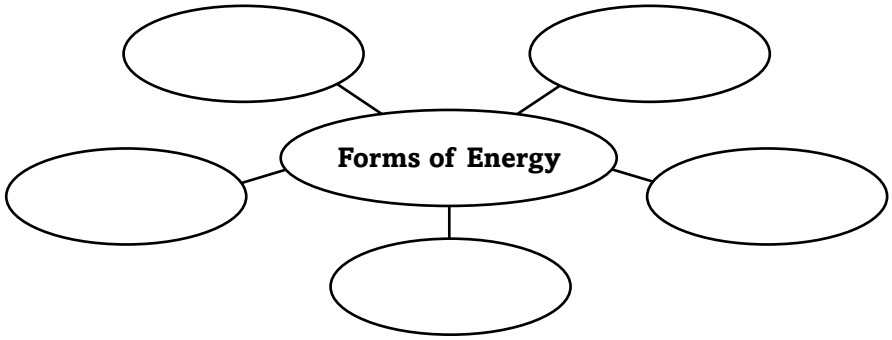
Section 1 Energy Changes (continued)

Main Idea	Details

Forms of Energy and Measuring Energy

I found this information on page _____.

Organize *forms of energy by completing the concept map. Then identify two units for measuring energy.*



Two units used to measure energy are the _____ and the _____.

Changing Forms of Energy

I found this information on page _____.

Compare *changing forms of energy by completing the diagram.*

Change in Form of Energy

Electric fan	electrical energy →	mechanical energy
Fireworks	chemical energy →	_____ and _____ energy
Electric stove	_____ energy →	_____ energy

Using Energy, Conservation of Energy, and Useful Energy Always Decreases

I found this information on page _____.

Summarize *the principles of the law of conservation of energy by completing the following paragraph.*

Useful energy is energy _____. Useful energy always decreases because, when energy changes form, _____.

The total amount of energy in the universe never _____. This means that energy cannot be _____ or _____. Energy can, however, change from one _____ to another.

Name _____ **Date** _____

Energy

Section 2 Thermal Energy

Benchmarks—SC.A.1.3.3: The student knows that temperature measures the average energy of motion of the particles that make up the substance. Also covers: SC.B.1.3.5, SC.H.1.3.4, SC.H.1.3.5, SC.H.1.3.7

Scan *Section 2 of your book using the checklist below.*

- ☐ Read all section titles.
- ☐ Read all boldface words.
- ☐ Look at all of the pictures.
- ☐ Think about what you already know about temperature.

Write three facts that you discovered about temperature and heat as you scanned the section.

1. _____

2. _____

3. _____

Review Vocabulary

Define *the following terms by writing the term next to its definition.*

_____ particle formed when two or more atoms bond together

New Vocabulary

_____ measure of the average kinetic energy of the particles in an object

_____ transfer of energy from one object to another as a result of a difference in temperature

_____ transfer of energy by collisions between atoms in a material

_____ transfer of heat that occurs when particles move between objects or areas that differ in temperature

_____ the transfer of energy by waves

Academic Vocabulary

Use a dictionary to write the scientific definition for **transfer.**

transfer _____

_____

Name _____ **Date** _____

Section 2 Thermal Energy (continued)

Main Idea	Details

Temperature

I found this information on page _____.

Analyze *the effect that temperature has on the speed of motion and kinetic energy of the molecules of a gas by completing the table below.*

Molecules in a Gas		
Temperature	Speed of Motion	Kinetic Energy
Low		
High		

Measuring Temperature

I found this information on page _____.

Compare *the Fahrenheit and Celsius temperature scales by drawing a thermometer below. Indicate water's boiling point and freezing point on each scale.*

Thermal Energy and Heat

I found this information on page _____.

Read *the passage below. In the box, sketch a diagram. Label where thermal energy is transferred and where kinetic energy increased.*

A girl playing baseball scrapes her knee sliding into home plate. The trainer places an ice pack on the knee. After a while, the ice pack begins to melt.

Name _____ **Date** _____

Section 2 Temperature (continued)

Main Idea

Details

Temperature Changes Depend on the Material

I found this information on page _____.

Complete *the paragraph below about temperature change.*

During summer, the water in a lake generally is _____ _____. During winter, lake water generally is _____. This temperature difference occurs because _____ _____ or _____.

Thermal Energy on the Move

I found this information on page _____.

Complete *the chart describing the 3 methods of heat transfer.*

Heat Transfer	
Type of Heat Transfer	**How It Occurs**
conduction	
convection	
radiation	

CONNECT IT

Imagine yourself stirring a hot cup of hot chocolate with a metal spoon. As you stir, you observe that the spoon becomes hot. Use what you've learned about heat to explain why this happens. In your explanation, describe the method or methods of heat transfer involved.

_____

_____

_____

_____

_____

Name _____ **Date** _____

Energy Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Energy	After You Read
• A moving object has energy.	
• Energy can change forms.	
• Temperature is a form of energy.	
• Conduction occurs when particles collide.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things that you have learned about energy.**

_____

_____

_____

_____

Name _____ **Date** _____

Electricity and Magnetism

Sunshine State Standards—SC.B.1: The student recognizes that energy may be changed in form with varying efficiency. Also covers: SC.C.2

Before You Read

Preview the chapter title, the section titles, and the section headings. List at least one thing you know and one thing you want to find out for each section of the chapter.

K What I know	W What I want to find out

FOLDABLES™ Study Organizer

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

List five electrical devices you used today and describe what each device did.

Name _____ **Date** _____

Electricity and Magnetism

Section 1 Electric Charge and Forces

Benchmarks—SC.C.2.3.1: The student knows that many forces (e.g., gravitational, electrical, and magnetic) act at a distance (e.g., without contact). Also covers: SC.A.2.3.2, SC.D.1.3.5, SC.H.1.3., SC.H.1.3.6

Objectives *Review the section objectives. Write three questions that these statements bring to mind.*

1. _____
2. _____
3. _____

Review Vocabulary **Define** atom *to show its scientific meaning.*

atom _____

New Vocabulary *Use your book or a dictionary to define the key terms.*

charging by contact _____

charging by induction _____

static charge _____

electric discharge _____

Academic Vocabulary *Use a dictionary to define* contact.

contact _____

Name _____ **Date** _____

Section 1 Electric Charge and Forces (continued)

Main Idea | **Details**

Electric Charges

I found this information on page _____.

Organize *the parts of the* atom *in the table below.*

Particles That Make Up Atoms		
Particle	**Charge of Particle**	**Particle Location**
Proton		
		nucleus
	negative	

I found this information on page _____.

Complete ***the statements to determine when atoms have electric charge.***

Atoms have positive charge	when →	_____
_____	when →	there are equal numbers of electrons and protons.
Atoms have negative charge	when →	_____

The Forces Between Charges

I found this information on page _____.

Model ***the forces between like and unlike charges between charged particles. Draw particles to show the forces for each situation.***

Positive Particle/ Negative Particle	**Positive Particle/ Positive Particle**	**Negative Particle/ Negative Particle**

Summarize ***how electric force depends on distance and on charge.***

_____

_____

_____

Name _____ **Date** _____

Section 1 Electric Charge and Forces (continued)

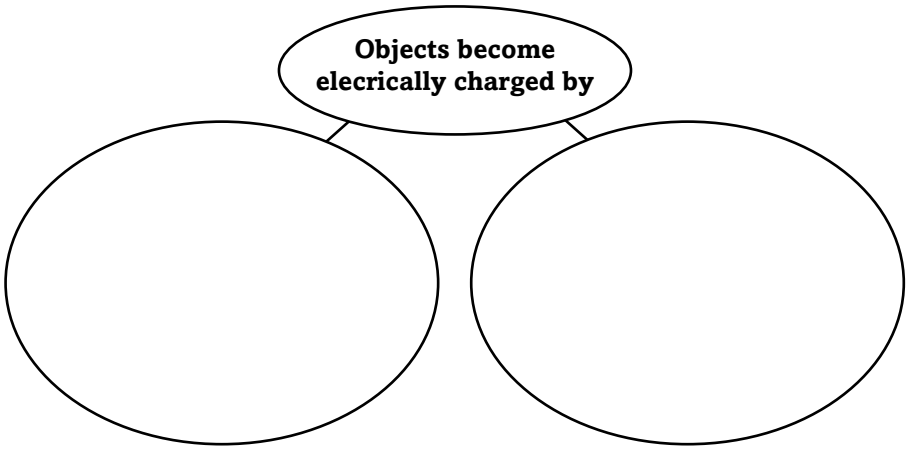
Main Idea

Details

Making Objects Electrically Charged

I found this information on page _____.

Identify and define *the two ways objects become electrically charged by completing the graphic organizer.*



Conductors and Insulators

I found this information on page _____.

Organize *information about insulators and conductors in the table below.*

Insulator	Conductor
Definition:	Definition:
Examples:	Examples:

CONNECT IT

Make a simple cartoon to show at least four people in a lightning storm. Show some of them acting safely, and some acting unsafely. Use information from the section to explain why each behavior is safe or unsafe.

Name _____ **Date** _____

Electricity and Magnetism

Section 2 Electric Current

Benchmarks—SC.B.1.3.1: The student identifies forms of energy and explains that they can be measured and compared. Also covers: SC.B.1.3.4, SC.H.1.3.4, SC.H.1.3.5

Scan *Use the checklist below to preview Section 2 of your book.*

- ☐ Read all section titles.
- ☐ Read all bold words.
- ☐ Look at all of the pictures, charts, and graphs.
- ☐ Think about what you already know about electric current.

Write three facts that you discovered about electric current as you scanned the section.

1. _____

2. _____

3. _____

Review Vocabulary

kinetic energy

Use **kinetic energy** *in a scientific sentence.*

_____

_____

New Vocabulary

Read the definitions below. Write the key term on the blank in the left column.

_____ measure of how difficult it is for electrons to flow in an object

_____ setup of devices that allows current to follow one closed path

_____ the flow of electric charges

_____ a measure of the amount of electrical energy transferred by an electric charge as it moves from one point to another in a circuit

_____ a setup of devices that allows current to follow more than one closed path

_____ a closed path in which electric charges can flow

Academic Vocabulary

neutral

Define *the word* **neutral** *to show its scientific meaning.*

_____

Name _____ **Date** _____

Section 2 Electric Current (continued)

Main Idea	Details

Electric Current

I found this information on page _____.

Complete *the sentences about* electric current.

Electric current is _____.

Electric current is measured using an SI unit called

_____.

A Simple Electric Circuit

I found this information on page _____.

Create *a drawing of a* circuit *that performs a useful function.*

Summarize *two important facts about how a circuit works.*

_____

_____

_____

Making Electric Charges Flow

I found this information on page _____.

Organize *information about how each factor affects electric charges in a circuit.*

Term	How It Affects Electric Charges
Electric field	
Electric resistance	
Battery	

Name _____ **Date** _____

Section 2 Electric Current (continued)

Main Idea

Transferring Electrical Energy and Voltage

I found this information on page _____.

Series and Parallel Circuits

I found this information on page _____.

Details

Define *Ohm's law by explaining the meaning of each letter in the equation:* V = IR.

V _____ = *I* _____ x *R* _____

Design ***a parallel circuit that has three paths, a battery, and three lightbulbs. Use your book to help you.***

- Label each device.
- Use arrows to show the direction in which electricity flows in each path.

CONNECT IT

One bulb in a strand of decorative lights burns out and the rest of the strand stops working. Identify the type of circuit that was used to connect the lights.

_____

_____

_____

Name _____ **Date** _____

Electricity and Magnetism

Section 3 Magnetism

Benchmarks—SC.C.2.3.1: The student knows that many forces (e.g., gravitational, electrical, and magnetic) act at a distance (e.g., without contact). Also covers: SC.H.1.3.2, SC.H.1.3.4, SC.H.1.3.5, SC.H.3.3.5

Predict *three concepts that might be discussed in Section 3.*

1. _____
2. _____
3. _____

Review Vocabulary

Use mechanical energy *in a sentence that shows its meaning.*

mechanical energy _____

New Vocabulary

Use the following key terms in original sentences that show their meaning.

magnetic domain _____

electromagnet _____

electromagnetic induction _____

Academic Vocabulary

Use a dictionary to define temporary. *Then use it in a sentence that reflects its scientific meaning.*

temporary _____

Name _____ **Date** _____

Section 3 Magnetism (continued)

Main Idea

Details

Magnets

I found this information on page _____.

Model *how* magnets *exert forces on each other in the boxes below. Use the figure in your book to help you.*

- Label the poles of the magnets.
- Use arrows to show how the magnets exert forces on each other.

Two South Poles	North Pole and South Pole	Two North Poles

Summarize attraction *and* repulsion *of magnets.*

_____

_____

Magnetic Materials

I found this information on page _____.

Compare and contrast *the way that paper clips interact with a magnet and the way paper clips interact with one another by filling in the blanks below.*

_____ of a paper clip do not normally all point in the same direction. Therefore, paper clips _____ to one another. The _____ of a magnet mostly point in the _____ direction. When a magnet is brought near a paper clip, the magnetic domains of the paper clip _____ so that _____. This causes the paper clip to be _____ to the magnet.

Name _____ **Date** _____

Section 3 Magnetism (continued)

Main Idea

Details

Electro-magnetism

I found this information on page _____.

Analyze *the way* electromagnets *work by completing the chart.*

Cause	Effect
Increasing the current of an electromagnet	
	The north and south poles of the magnet will change positions.

Generating Electric Current

I found this information on page _____.

Sequence *steps to generate electricity by electromagnetic induction.*

Electricity is generated using the following process:	
1.	
2.	
3.	

SYNTHESIZE IT

Suppose that you are given two iron nails, wire, and two batteries of your choice. Draw and label designs for 2 electromagnets of different strengths made of these materials.

Name _____ **Date** _____

Tie It Together

Synthesize It

Identify five everyday devices that work by using electricity. Describe the energy transformations that take place within each device

Device _____

Device _____

Device _____

Device _____

Device _____

Name _____ **Date** _____

Electricity and Magnetism

Chapter Wrap-Up

Review the ideas you listed in the table at the beginning of the chapter. Cross out any incorrect information in the first column. Then complete the table by filling in the third column. How do your ideas about What You Know *now compare with those you provided at the beginning of the chapter?*

K What I know	W What I want to find out	L What I learned

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things that you have learned about electricity and magnetism.**

_____

_____

_____

_____

Name _____ **Date** _____

Waves

Sunshine State Standards—SC.A.2: The student understands that the types of force that act on an object and the effect of that force can be described, measured, and predicted. Also covers: SC.B.1, SC.C.1

Before You Read

Before you read the chapter, read each statement below.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	Waves
	• Waves carry matter and energy.
	• There is more than one kind of wave.
	• Waves carry different amounts of energy.
	• All waves travel at the same speed.

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Write a paragraph about some places where you have seen water waves.

Name _____ **Date** _____

Waves

Section 1 What are waves?

Benchmarks—SC.C.1.3.2: The student knows that vibrations in materials set up wave disturbances that spread away from the source (e.g., sound and earthquake waves). Also covers: SC.A.2.3.1, SC.B.1.3.3, SC.B.1.3., SC.H.1.3.5, SC.H.2.3.1

Skim *the title and headings of Section 1. List two things that might be discussed in this section.*

1. _____

2. _____

Review Vocabulary

Define energy *in your own words.*

energy _____

New Vocabulary

Define each vocabulary term using your book or a dictionary.

wave _____

mechanical wave _____

compressional wave _____

electromagnetic wave _____

transverse wave _____

Academic Vocabulary

Define medium *in its scientific sense using a dictionary.*

_____

Name _____ **Date** _____

Section 1 What are waves? (continued)

Main Idea	Details
What is a wave? *I found this information on page _____.*	**Identify** *two types of waves that carry energy.* **1.** _____ **2.** _____
I found this information on page _____.	**Contrast** *the energy carried in a sound wave and the energy in a moving ball.* _____ _____
A Model for Waves *I found this information on page _____.*	**Model** *how a wave can move energy without moving matter.* • Label the parts of your drawing that represent matter and energy. • Write a caption to explain your drawing.

My Model for Waves

_____

_____

_____

Name _____ **Date** _____

Section 1 What are waves? (continued)

Main Idea

Details

Mechanical Waves

I found this information on page _____.

Organize *information about* **mechanical waves** *in the outline below.*

Mechanical waves—Travel through a _____.

A. Types of wave mediums

1. _____

2. _____

3. _____

B. Types of mechanical waves

1. _____

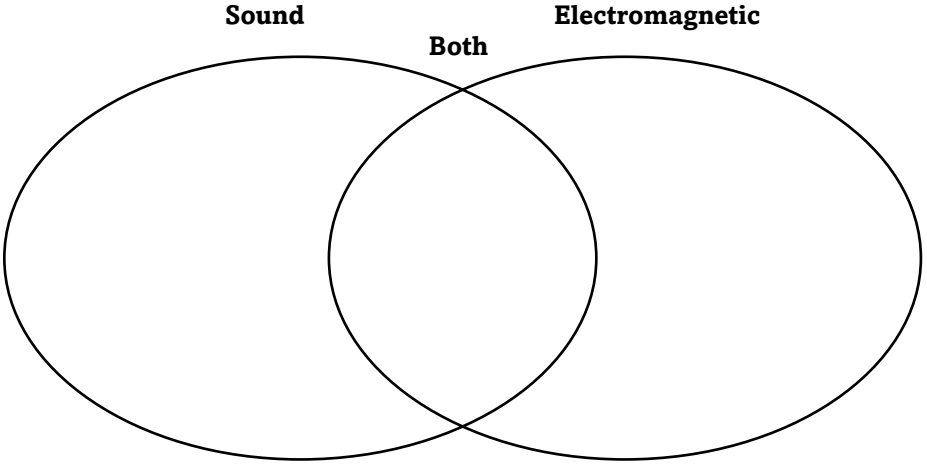
2. _____

Sound Waves and Electromagnetic Waves

I found this information on page _____.

Compare and contrast *the characteristics of* **sound waves** *and* **electromagnetic waves** *by completing the Venn diagram below.*

- carry energy
- carry radiant energy
- do not need a medium
- mechanical waves
- move through a medium



CONNECT IT

Evaluate how electromagnetic and mechanical waves are useful in your daily life.

_____

_____

_____

Name _____ **Date** _____

Waves

Section 2 Wave Properties

Benchmarks—SC.B.1.3.6: The student knows the properties of waves (e.g., frequency, wavelength, and amplitude); that each wave consists of a number of crests and troughs; and the effects of different media on waves. Also covers: SC.H.1.3.5, SC.H.2.3.1

Scan *Use the checklist below to preview Section 2 of your book.*

- ☐ Read all section titles.
- ☐ Read all bold words.
- ☐ Look at all the pictures, charts, and graphs.
- ☐ Think about what you already know about waves.

Write three facts you discovered about wave properties as you scanned the section.

1. _____

2. _____

3. _____

Review Vocabulary

Define *the key terms using a dictionary or your book.*

speed _____

_____

New Vocabulary

amplitude _____

_____

wavelength _____

_____

frequency _____

_____

Academic Vocabulary

Use the word parallel *in a scientific sentence.*

parallel _____

_____

Name _____ **Date** _____

Section 2 Wave Properties (continued)

Main Idea

Details

Amplitude

I found this information on page _____.

Create *a* transverse wave *in the space below. Label the* crest, trough, *and* amplitude *of the wave on your drawing.*

Wavelength

I found this information on page _____.

Complete *the descriptions for determining wavelength of two types of waves in the table below.*

Wavelength is the distance:	Type of Wave	
	Transverse	Compressional
from one		
to the next		
or from one		
to the next		

Frequency

I found this information on page _____.

Model *the relationship between* frequency *and* wavelength *when wave speed is the same. In the top box, draw a wave with a frequency of one wavelength per second. In the bottom box, draw a wave with a frequency of two wavelengths per second.*

0 sec 1 sec 2 sec 3 sec

Name _____ **Date** _____

Main Idea

Wave Speed

I found this information on page _____.

Details

Summarize ***how to use*** **the wave speed equation** ***to calculate wave speed by completing the steps below.***

1. The wave speed equation is

   wave speed in m/s

   _____ _____

2. To calculate the speed of a wave that has a frequency of 550 Hz and a wavelength of 0.8 m, insert the values into the wave speed equation.

   wave speed _____ _____

3. Multiply to find the answer.

   Answer: _____

Compare ***the speeds of different types of waves in different mediums by completing the chart below with the words*** **gases, liquids,** ***or*** **solids.**

How Mediums Affect Wave Speed		
Wave type	**move fastest through**	**move slowest through**
mechanical waves		
electromagnetic waves		

CONNECT IT

Individual members of a choir sing at different pitches. Compare the wavelengths of the sound waves produced by soprano, alto, and baritone singers.

_____

_____

_____

_____

Name _____ **Date** _____

Waves

Section 3 Wave Behavior

Benchmarks—SC.A.2.3.1: The student describes and compares the properties of particles and waves.
Also covers: SC.B.1.3.6, SC.C.1.3.2, SC.H.1.3.4, SC.H.1.3.5, SC.H.1.3.6, SC.H.1.3.7, SC.H.2.3.1, SC.H.3.3.5

Predict *by reading the title and subheadings three things that might be discussed in this section.*

1. _____
2. _____
3. _____

Review Vocabulary

Use the word echo *in a sentence to reflect its scientific use.*

echo _____

_____

New Vocabulary

Use the new vocabulary terms to write your own original scientific sentences.

reflection _____

_____

refraction _____

_____

diffraction _____

_____

interference _____

_____

Academic Vocabulary

Define overlap *to show its scientific meaning.*

overlap _____

_____

Name _____ **Date** _____

Section 3 Wave Behavior (continued)

Main Idea

Details

Reflection

I found this information on page _____.

Skim *the section about* reflection. *In the Question spaces, write two questions you have about reflection. As you read the section, write answers to your questions.*

Question: _____

Answer: _____

_____

Question: _____

Answer: _____

_____

Refraction

I found this information on page _____.

Create *a diagram below showing what happens to a light wave as it passes from water to air. Draw a second picture showing what happens as light passes from air to water. Label the* normal *and the* light ray's direction of travel *in each drawing.*

Summarize *why* light refracts *when it passes from one material to another.*

_____

_____

Sequence *the seven colors into which sunlight separates when it passes through a prism.*

Wavelength

Longest ← → **Shortest**

Name _____ **Date** _____

Section 3 Wave Behavior (continued)

Main Idea

Details

Diffraction

I found this information on page _____.

Summarize *two factors that affect how much a wave can be* diffracted *as it passes a barrier or opening.*

1. _____

2. _____

What happens when waves meet?

I found this information on page _____.

Model constructive *and* destructive interference *in the two boxes below. Label the* crests *and* troughs *of the waves in your model.*

Interference	
Constructive	Destructive

I found this information on page _____.

Contrast *the behavior of waves and particles by completing the table below.*

Behavior	Waves	Particles
When they pass through an opening		
When they meet		

Connect It

Use what you have learned about the behavior of waves to evaluate two ways to protect your ears from damage due to loud noises.

_____

_____

_____

Name _____ **Date** _____

Tie It Together

Model Wave Motion

Design a model you could use to study the behavior and properties of waves. Draw your model below.

Answer each question about your model.

1. What medium does your model use?

2. How could you measure the wavelength of the waves in your model?

3. How could you use your model to demonstrate reflection, refraction, and diffraction of waves?

Name _____ **Date** _____

Waves Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Waves	After You Read
• Waves carry matter and energy.	
• There is more than one kind of wave.	
• Waves carry different amounts of energy.	
• All waves travel at the same speed.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things you have learned about waves.**

_____

_____

_____

_____

Name _____ **Date** _____

Exploring Space

Sunshine State Standards—SC.E.1: understands the interaction and organization in the Solar System and the universe . . . ; Also covers: SC.A.2, SC.H.1, SC.H.3

Before You Read

Preview the chapter including section titles and the section headings. Complete the table by listing at least one idea for each of the three sections in each column.

K What I know	W What I want to find out

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Do you think space exploration is worth the risk and expense? Explain.

Name _____ **Date** _____

Exploring Space

Section 1 Radiation from Space

Benchmarks—SC.A.2.3.3: The student knows that radiation, light, and heat are forms of energy used to cook food, treat diseases, and provide energy. Also covers: SC.H.1.3.1, SC.H.1.3.4, SC.H.1.3.5, SC.H.1.3.7, SC.H.3.3.5, SC.H.3.3.6

Skim *the objectives found in* What You'll Learn *for Section 1. Write three questions that come to mind from reading these statements.*

1. _____

2. _____

3. _____

Review Vocabulary **Define** universe *using your book or a dictionary*

universe _____

_____

New Vocabulary *Use your book or a dictionary to define the key terms.*

electromagnetic spectrum _____

_____

refracting telescope _____

_____

reflecting telescope _____

_____

observatory _____

_____

radio telescope _____

_____

Academic Vocabulary *Use a dictionary to define* visible.

visible _____

Name _____ **Date** _____

Section 1 Radiation from Space (continued)

Main Idea	Details

Electromagnetic Waves

I found this information on page _____.

List *the seven forms of electromagnetic radiation.*

1. _____ **5.** _____

2. _____ **6.** _____

3. _____ **7.** _____

4. _____

Compare and contrast short wavelength radiation *with* long wavelength radiation *by completing the table below.*

	Short Wavelength	Long Wavelength
Sketch of each wave		
Description of frequency		

Optical Telescopes

I found this information on page _____.

Compare *a* **refracting telescope** *with a* **reflecting telescope.**

- Draw cross-sections of each telescope.
- Use arrows to indicate the path taken by light in each type.
- Label the eyepiece lens, focal point, and any other mirrors or lenses.
- Model the shapes of a convex lens and a concave mirror.

refracting telescope

reflecting telescope

convex lens

concave mirror

Name _____ **Date** _____

Section 1 Radiation from Space (continued)

Main Idea

Details

Optical Telescopes

I found this information on page _____.

Summarize *information about the* Hubble Space Telescope *by completing the paragraph.*

Scientists expected clear pictures from the telescope because it was _____. First, astronauts had to _____. Astronomers used images from *Hubble* to discover a _____ at the center of the galaxy. *Hubble* will be replaced by the _____. This telescope will be able to _____.

Radio Telescopes

I found this information on page _____.

Organize *information about* radio telescopes *in the table below.*

Radio telescopes	
Purpose:	
Design:	
Collect information used to:	
1.	3.
2.	

CONNECT IT

Radio waves from space have been studied for decades, but scientists have yet to find signs of intelligent life. Suggest several explanations for this.

_____

_____

_____

_____

Name _____ **Date** _____

Exploring Space

Section 2 Early Space Missions

Benchmarks—SC.E.1.3.2: The student knows that available data from various satellite probes show the similarities and differences among planets and their moons in the Solar System. Also covers: SC.D.2.3.5, SC.D.1.3.5, SC.E.1.3.1, SC.H.1.3.3, SC.H.1.3.6, SC.H.3.3.5, SC.H.3.3.6

Predict *three things that you think might be discussed in this section after reading its headings.*

1. _____

_____

2. _____

_____

3. _____

_____

Review Vocabulary

Write the correct vocabulary term next to each definition.

_____ the force of attraction between two masses

New Vocabulary

_____ curved path followed by a satellite as it revolves around an object

_____ space mission with goal of landing a human on the Moon's surface

_____ special engine that can work in space and burns liquid or solid fuel

_____ space mission with goals of connecting spacecraft in orbit and investigating the effects of space travel on the human body

_____ any object that revolves around another object in space

_____ space mission with goal of orbiting a piloted spacecraft around Earth and bringing it back safely

_____ instrument that gathers information and sends it back to Earth

Academic Vocabulary

Define goal *to show it's scientific meaning.*

goal _____

_____

Name _____ **Date** _____

Section 2 Early Space Missions (continued)

Main Idea

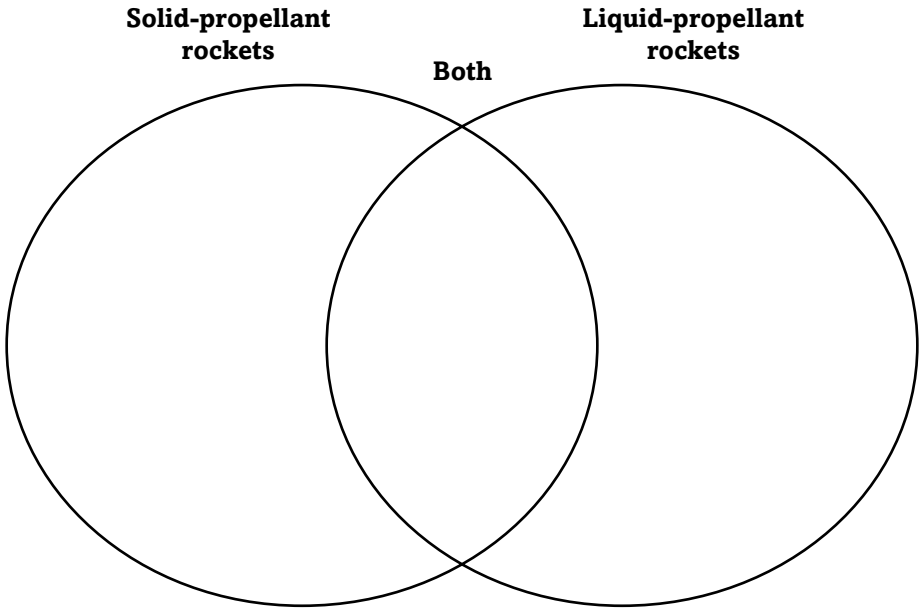
Details

The First Missions into Space

I found this information on page _____.

Compare and contrast *the two types of rockets by completing the Venn diagram with the information below.*

- can be shut down and restarted
- do not require air for operation
- liquid fuel and oxidizer stored in separate tanks
- preferred for long-term space missions
- gases thrust it forward
- rubberlike fuel contains oxidizer
- generally simpler
- cannot be shut down once ignited



I found this information on page _____.

Model *the path of a satellite by drawing a satellite in orbit around a planet. Show the path of the satellite, and the path it would take if it were not affected by gravity.*

Name _____ **Date** _____

Section 2 Early Space Missions (continued)

Main Idea

Details

Space Probes

I found this information on page _____.

Evaluate *the advantages and disadvantages of space probes compared to spacecraft piloted by humans.*

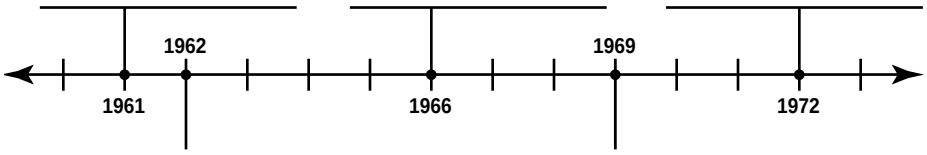
Space Probes	
Advantages	Disadvantages

Moon Quest

I found this information on page _____.

Create *a time line of the United States' quest to reach the Moon by identifying an event that corresponds to each date.*

1. _____ **3.** _____ **5.** _____



2. _____ **4.** _____

Connect It

Design a plan for a space mission to take humans to Mars. Analyze challenges the crew would have to face. Develop a simple training program to help prepare the crew to face these challenges.

Name _____ **Date** _____

Exploring Space

Section 3 Current and Future Space Missions

Benchmarks—SC.H.3.3.6: knows that no matter who does science . . ., or when or where they do it, the knowledge and technology that result can eventually become available to everyone. Also covers: SC.E.1.3.2, SC.H.1.3.3, SC.H.1.3.4, SC.H.1.3.6, SC.H.3.3.4, SC.H.3.3.5, SC.H.3.3.7

Skim *Section 3 of your text. Read the headings and examine the illustrations. Write three questions that come to mind. Try to answer your questions as you read.*

1. _____

2. _____

3. _____

Review Vocabulary

Use cosmonaut *in a sentence that shows its scientific meaning.*

cosmonaut _____

New Vocabulary

Use the following key terms in original sentences to show their scientific meaning.

space shuttle _____

space station _____

Academic Vocabulary

Define technology *to show it's scientific meaning.*

technology _____

Name _____ **Date** _____

Section 3 Current and Future Space Missions (continued)

Main Idea | **Details**

The Space Shuttle

I found this information on page _____.

Summarize *key facts about the* space shuttle *below.*

Engines: _____

_____

Uses: _____

_____

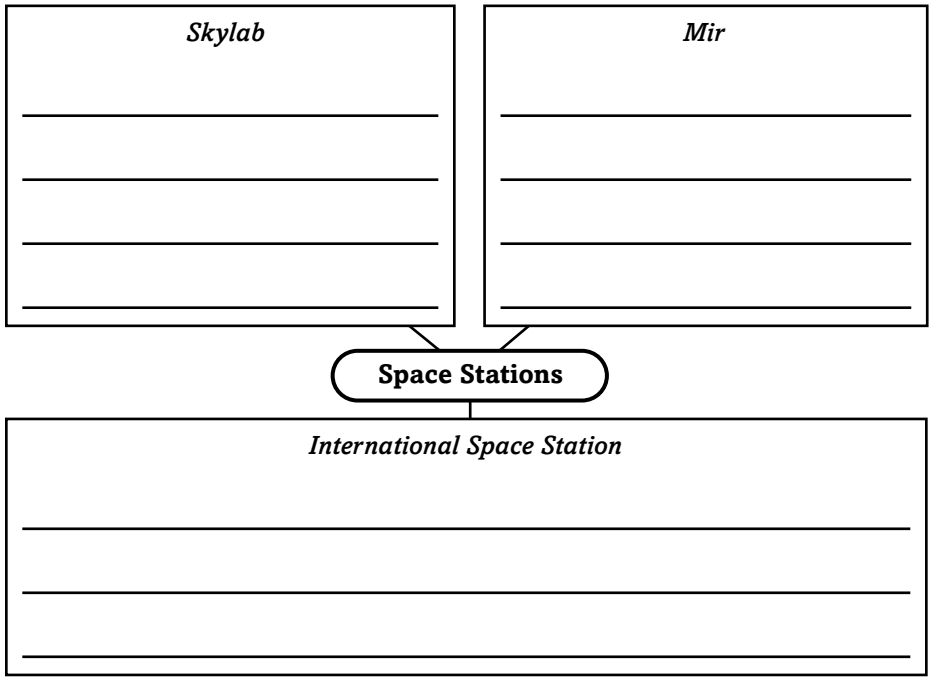
Landing: _____

_____

Space Stations Cooperation in Space

I found this information on page _____.

Organize *information about* space stations. *Complete the concept map with key facts about each space station.*



Exploring Mercury Exploring the Moon

I found this information on page _____.

Complete *the table about missions to Mercury and the Moon.*

Probe	Destination	Purpose
Messeinger		
Lunar Prospector		

Name _____ **Date** _____

Section 3 Current and Future Space Missions (continued)

Main Idea

Details

Exploring Mars Exploring Saturn Planets Around Other Stars

I found this information on page _____.

Distinguish *the purpose of each of the following space probes.*

Mars Global Surveyor: _____

Mars Pathfinder: _____

Mars Odyssey: _____

Spirit and *Opportunity:* _____

_____

Phoenix: _____

Cassini: _____

_____

Summarize *the goal of the* Kepler *satellite.*

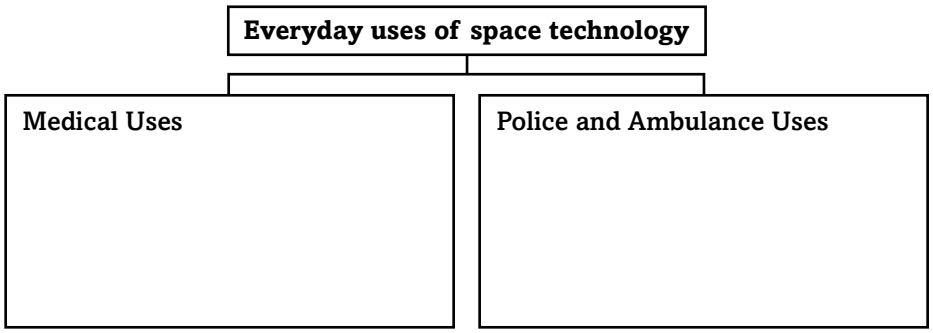
_____

_____

Everyday Space Technology

I found this information on page _____.

Classify *ways in which technology originally developed for space programs have been useful in everyday life.*



CONNECT IT

Research and construction of the earliest space stations was undertaken by nations working independently. Work on the International Space Station is being performed by many nations working together. Analyze some benefits to such international cooperation in scientific research.

_____

_____

_____

Name _____ **Date** _____

Tie It Together

Design a Rover

Much of today's planetary research is carried out using remote-controlled rovers that are monitored and maneuvered by scientists on Earth. Suppose that you could design a remote-controlled rover to conduct research on a planet or the Moon.

- Draw a sketch of your rover below.
- Identify features you would include on your rover.
- Explain why you would include each feature.
- Use what you have learned about space technologies in this section.

Name _____ **Date** _____

Exploring Space Chapter Wrap-Up

Review the ideas you listed in the table at the beginning of the chapter. Cross out any incorrect information in the first column. Then complete the table by filling in the third column.

K What I know	W What I want to find out	L What I learned

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things you have learned about exploring space.**

_____

_____

_____

_____

Name _____ **Date** _____

The Moon, Planets, and Stars

Sunshine State Standards—SC.E.1: The student understands the interaction and organization in the Solar System and the universe . . . . Also covers: SC.D.1, SC.H.1

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	The Moon, Planets, and Stars
	• A year on Earth is the time it takes to make one revolution around the Sun.
	• A spring tide occurs when the position of the Sun, Earth, and the Moon form a 90˚ angle to one another.
	• As a comet approaches the Sun, solar radiation changes some of the ice into gas.
	• The Sun may end its life as a black hole.

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Write a short story about what it would be like to ride on a comet as it orbits the Sun.

Name _____ **Date** _____

The Moon, Planets, and Stars

Section 1 Earth's Place in Space

Benchmarks—SC.E.1.3.1: The student understands the vast size of our Solar System and the relationship of the planets and their satellites. Also covers: SC.H.1.3.4, SC.D.1.3.5, SC.H.1.3.1, SC.H.1.3.6, SC.H.1.3.7, SC.H.2.3.1, SC.H.3.3.5

Skim *Section 1 of your book. Read the headings and look at the illustrations. Write three questions that come to mind.*

1. _____

2. _____

3. _____

Review Vocabulary

Define axis.

axis _____

New Vocabulary

Use your book to define the following terms.

orbit _____

lunar highlands _____

maria _____

spring tide _____

neap tide _____

Academic Vocabulary

Use a dictionary to define apparent.

apparent _____

Name _____ **Date** _____

Section 1 Earth's Place in Space (continued)

Main Idea | **Details**

Earth Moves

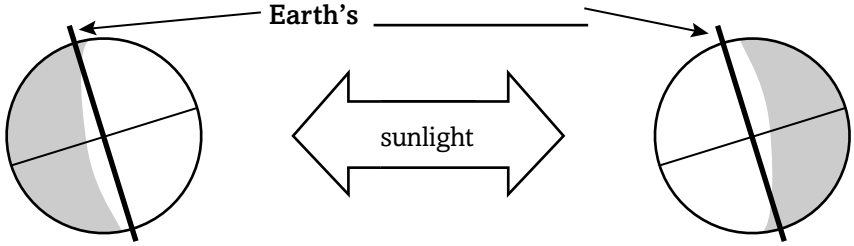
I found this information on page _____.

Summarize *how Earth moves by completing the chart below.*

Earth's Movement		
Type of Movement	Description	Duration of One Cycle
Rotation		
Revolution		

I found this information on page _____.

Contrast ***Earth's tilt relative to the Sun during the Northern Hemisphere's summer and winter by labeling the diagram and completing the captions below.***



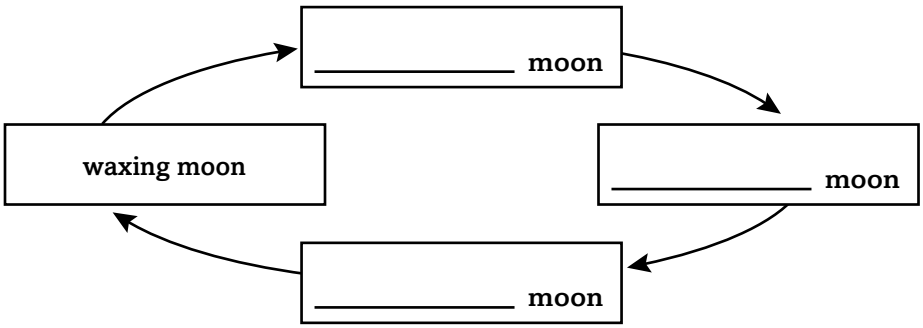
During _____, the Northern Hemisphere is tilted _____ from the Sun. Sunlight strikes the hemisphere at a _____ angle for _____ hours than during the _____.

During _____, the Northern Hemisphere is tilted _____ from the Sun. Sunlight strikes the hemisphere at a _____ angle for _____ hours than during the _____.

Earth's Moon

I found this information on page _____.

Sequence ***the*** lunar cycle ***by completing the diagram.***



Name _____ **Date** _____

Section 1 Earth's Place in Space (continued)

Main Idea

Details

Earth's Moon

I found this information on page _____.

Model *the alignments that cause* solar *and* lunar eclipses *by drawing and labeling diagrams showing the positions of the Sun, the Moon, and Earth relative to one another.*

Solar Eclipse
Lunar Eclipse

I found this information on page _____.

Compare spring tides *with* neap tides *by completing the table below.*

Type of Tide	How It Occurs	Effect on Gravity	Effect on Tidal Height
Spring			
Neap			

CONNECT IT

Draw a diagram of the Moon's present phase. The diagram should depict the orientation of the Sun, Earth, and the Moon to one another. You can look at a calendar or newspaper to find out the present phase.

Name _____ **Date** _____

The Moon, Planets, and Stars

Section 2 The Solar System

Benchmarks—SC.E.1.3.1: The student understands the vast size of our Solar System and the relationship of the planets and their satellites. Also covers SC.D.1.3.5; SC.E.1.3.2

Scan *the headings of Section 2 in your book. Identify three things that will be discussed as you tour the solar system.*

1. _____

2. _____

3. _____

Review Vocabulary

Define system.

system _____

_____

New Vocabulary

Fill in the blanks with the correct vocabulary.

_____ system of nine planets and numerous other objects that orbit the Sun

_____ distance equal to 150 million km

_____ large body of ice and rock that orbits the Sun

_____ rock from space that survives its plunge through the atmosphere and lands on Earth's surface

Academic Vocabulary

Use your book or a dictionary to define **concentrate.**

concentrate _____

Name _____ **Date** _____

Section 2 The Solar System (continued)

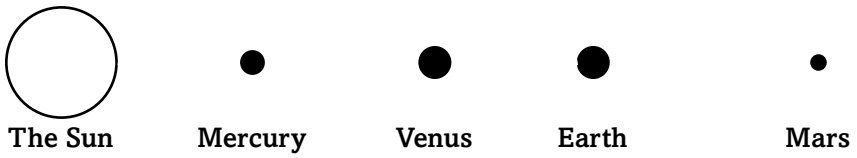
Main Idea

Details

Distance in Space

I found this information on page _____.

Model *an* astronomical unit *by marking the distance on the diagram.*



Touring the Solar System and Inner Planets

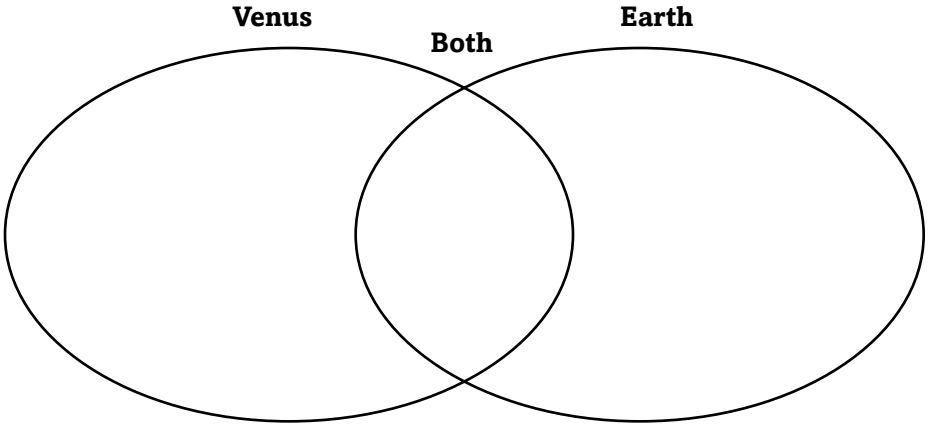
I found this information on page _____.

Organize *key facts about Mercury by completing the table.*

Location	
Surface	
Atmosphere	
Temperature	

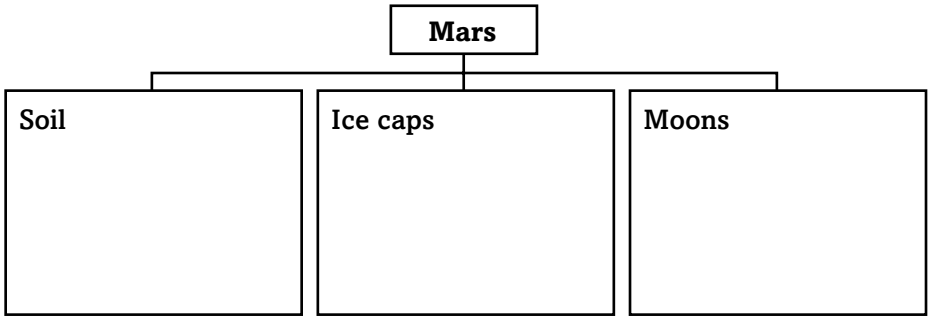
I found this information on page _____.

Compare and contrast *the physical properties of Venus and Earth by completing the Venn diagram with at least five facts.*



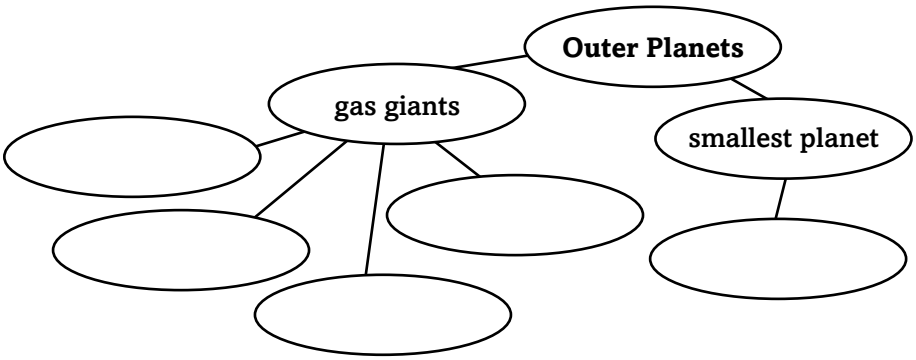
I found this information on page _____.

Complete *the graphic organizer to identify key features of Mars.*



Name _____ **Date** _____

Section 2 The Solar System (continued)

Main Idea	Details
Outer Planets *I found this information on page _____.*	**Summarize** *the characteristics shared by the gas giants and contrast them with Pluto.* The gas giants may have solid _____ but none has a solid _____. They are surrounded by _____ and _____. Pluto is composed of _____ and _____.
I found this information on page _____.	**Organize** *information about the outer planets in the chart.* 
Comets *I found this information on page _____.*	**Model** *a comet by sketching one as it would appear as it gets close to the sun. Indicate the parts and what they consist of.*

CONNECT IT **Identify factors that may prevent life from existing on other planets within our solar system.**

_____

_____

_____

_____

Name _____ **Date** _____

The Moon, Planets, and Stars

Section 3 Stars and Galaxies

Benchmarks—SC.E.1.3.3: The student understands that our Sun is one of the many stars in our galaxy. Also covers: SC.D.1.3.5, SC.E.1.3.1, SC.E.1.3.4, SC.E.2.3.1, SC.H.1.3.5, SC.H.1.3.6, SC.H.3.3.7, SC.H.2.3.1, SC.H.3.3.4, SC.H.3.3.5

Predict *three things that will be discussed as you scan the headings and illustrations of Section 3.*

1. _____
2. _____
3. _____

Review Vocabulary

Define star.

star _____

New Vocabulary

Use your book to define the following terms.

constellation _____

supernova _____

galaxy _____

light-year _____

Academic Vocabulary

Use a dictionary to define collapse *as a verb.*

collapse _____

Name _____ **Date** _____

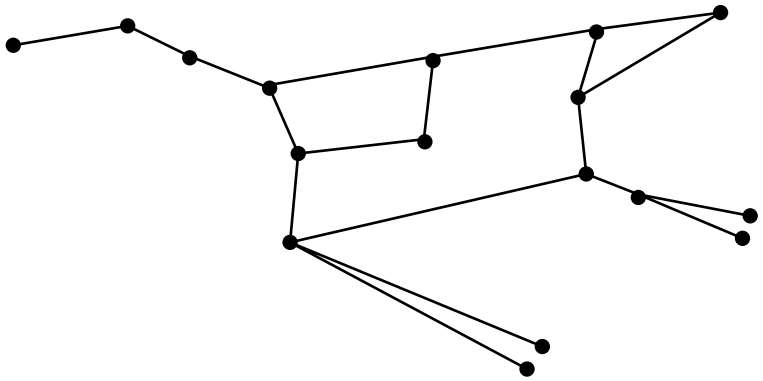
Section 3 Stars and Galaxies (continued)

Main Idea	Details

Stars

I found this information on page _____.

Model *a constellation by circling the Big Dipper within the constellation Ursa Major.*



I found this information on page _____.

Compare *stars' colors and temperatures by completing the table.*

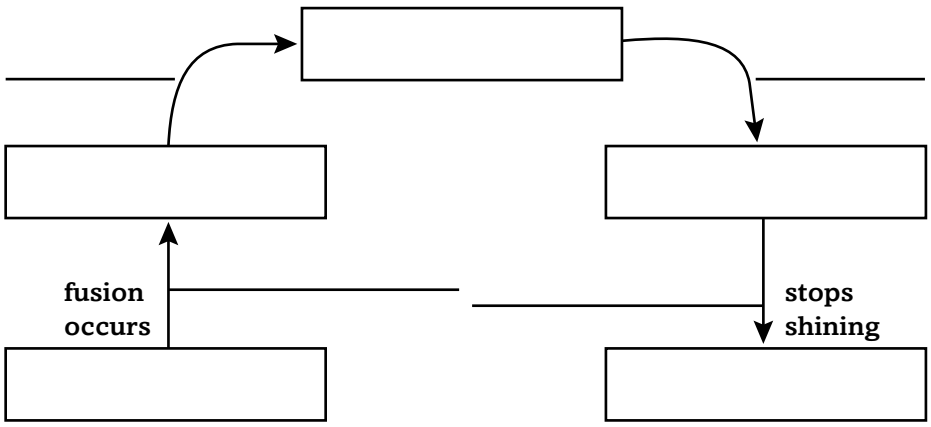
Stars' Colors and Temperatures	
Color	**Temperature**
red	
yellow	
bluish-white	

The Lives of Stars

I found this information on page _____.

Sequence *the life cycle of a medium-sized star using the terms below to complete the graphic organizer.*

- black dwarf
- cloud of dust, gas
- expands
- giant
- medium-sized star
- shrinks
- temperature cools
- temperature rises
- white dwarf



Name _____ **Date** _____

Section 3 Stars and Galaxies (continued)

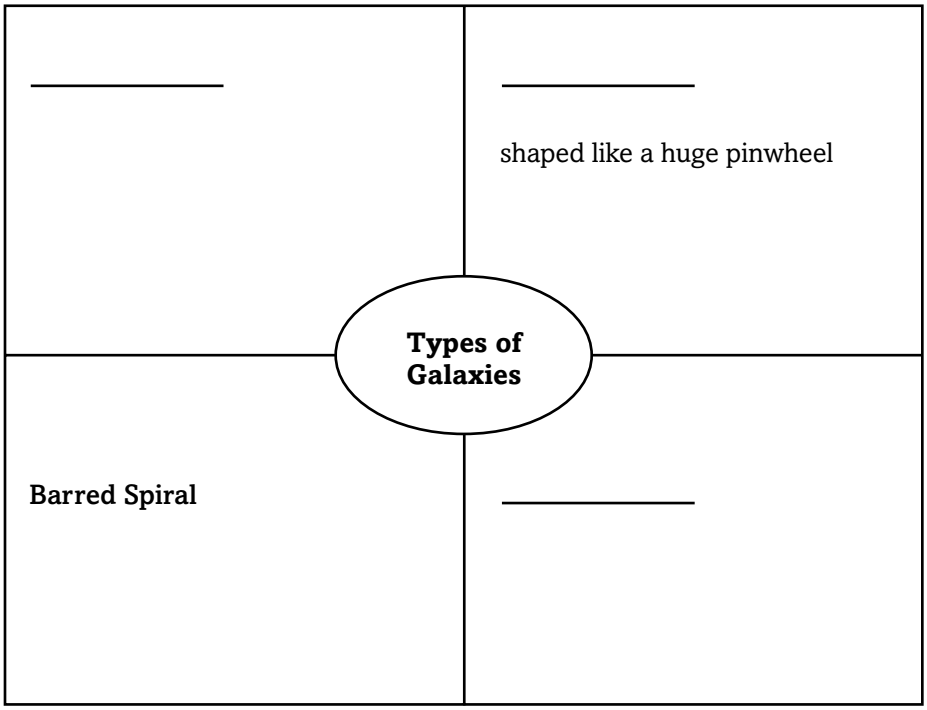
Main Idea

Details

Galaxies

I found this information on page _____.

Classify *the four major types of galaxies by completing the graphic organizer.*



The Universe

I found this information on page _____.

Summarize *information about the makeup of the universe by filling in the blanks of the paragraph below.*

Each galaxy contains _____ of stars. As many as _____ galaxies might exist. The universe seems to be continually _____. In relation to the vastness of the universe, Earth is smaller than one _____.

Synthesize It

The stars in the universe have been compared to the grains of sand on Earth. Write a sentence to explain this comparison.

_____

_____

_____

_____

Name _____ **Date** _____

Tie It Together

Write a Space Trip Story

You have completed a trip through the universe. Although everything in space is quite amazing, what part of space most interests you? Write a short story about a journey through your favorite part of space.

Name _____ **Date** _____

The Moon, Planets, and Stars

Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned and complete the table below. Compare your previous answers to these.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

The Moon, Planets, and Stars	After You Read
• A year on Earth is the time it takes to make one revolution around the Sun.	
• A spring tide occurs when the position of the Sun, Earth, and the Moon form a 90˚ angle to one another.	
• As a comet approaches the Sun, solar radiation changes some of the ice into gas.	
• The Sun may end its life as a black hole.	

Review

Use this checklist to help you study.

- ☐ Review the information you included in your Foldable.
- ☐ Study your *Science Notebook* on this chapter.
- ☐ Study the definitions of vocabulary words.
- ☐ Review daily homework assignments.
- ☐ Re-read the chapter and review the charts, graphs, and illustrations.
- ☐ Review the Self Check at the end of each section.
- ☐ Look over the Chapter Review at the end of the chapter.

SUMMARIZE IT **After reading this chapter, identify three things you have learned about the Moon, planets, and stars.**

_____

_____

_____

FCAT Vocabulary Glossary

abiotic an environmental factor not associated with the activities of living organisms

acceleration rate of change in velocity, usually expressed in meters per second; involves an increase or decrease in speed and/or a change in direction

air resistance force of air on moving objects

allele any of two or more alternate forms of a gene that an organism may have for a particular trait

amplitude in any periodic function (e.g., a wave) the maximum absolute variation of the function

asexual reproduction a form of reproduction in which new individuals are formed without the involvement of gametes

biodiversity the existence of a wide range of different species in a given area or specific period of time

biotic factors in an environment relating to, caused by, or produced by living organisms

calorie unit of energy; the amount of heat needed to raise one gram of water one degree Celsius at standard atmospheric pressure

chemical weathering the breakdown and alteration of rocks at or near Earth's surface as a result of chemical processes

circuit an interconnection of electrical elements forming a complete path for the flow of current

conduction the transmission of heat through a medium and without the motion of the medium

conservation of energy a fundamental principle stating energy cannot be created nor destroyed but only changed from one form to another

convection heat transfer in a gas or liquid by the circulation of currents from one region to another

crest the peak or highest point on a wave

crust outermost layer of Earth covering the mantle

dependent variable factor being measured or observed in an experiment

deposition the process by which sediment is carried by forces (e.g., wind, rain, or water currents) and left in a certain area

dominance tendency of certain (dominant) alleles to mask the expression of their corresponding (recessive) alleles

ecosystem an ecological community, together with its environment, functioning as a unit

efficiency the relative effectiveness of a system or device determined by comparing input and output

electromagnetic radiation the emission and propagation of the entire range of electromagnetic spectrum including: gamma rays, x-rays, ultraviolet radiation, visible light, microwaves, and radio waves

electron a stable elementary particle that is negatively charged and orbits the nucleus of an atom

entropy a measure of randomness or disorder of a closed system

erosion a combination of natural processes in which materials from Earth's surface are loosened, dissolved, or worn away and transported from one place to another

fossil fuels the remains of animal or plant life from past geologic ages that are now in a form suitable for use as a fuel (e.g., oil, coal, or natural gas)

frequency the number of cycles or waves per unit time

gene a specific part of a chromosome or sequence of DNA that determines a particular feature or characteristic in an organism

heterozygous cell or organism that has two different alleles for a particular trait

homozygous cell or organism that has identical rather than different alleles for a particular trait

independent variable the factor that is changed in an experiment in order to study changes in the dependent variable

inertia the property of an object, due to its mass, by which it resists any change in its position unless overcome by force

FCAT Vocabulary Glossary

magnetic field the region where magnetic force exists around magnets or electric currents

mass the amount of matter an object contains

meiosis the process of nuclear division in cells during which the number of chromosomes is reduced by half

mitosis a process of nuclear division in eukaryotic cells during which the nucleus of a cell divides into two nuclei, each with the same number of chromosomes

neap tide a twice-monthly tide of minimal range that occurs when the Sun, Moon, and Earth are at right angles to each other, thus decreasing the total tidal force exerted on Earth

neutral a particle, object, or system that lacks a net charge

neutron a subatomic particle having zero charge, found in the nucleus of an atom

nucleus the center region of an atom where protons and neutrons are located; also a cell structure that contains the cell's genetic material

ocean basin a depression on the surface of Earth occupied by water

plate tectonics theory of global dynamics in which Earth's crust is divided into a smaller number of large, rigid plates whose movements cause seismic activity along their borders

potential energy energy stored in an object due to the object's configuration and position

pressure the force exerted per unit area

prism a piece of glass with polished plane surfaces that disperses a beam of white light into its component colors

proton a subatomic particle having a positive charge and which is found in the nucleus of an atom

Punnett square a graphic checkboard used to determine results from a particular genetic cross

radiation emission of energy in the form of rays or waves

recessive an allele for a trait that will be masked unless the organism is homozygous for this trait

screw a type of simple machine that consists of an inclined plane wrapped around a cylinder

sexual reproduction reproduction involving the union of gametes producing an offspring with traits from both parents

spectroscope an instrument that uses a prism to separate and catalog light wavelengths

speed amount of distance traveled divided by time taken; the time-rate at which any physical process takes place

spring tide the tide of increased range that occurs twice monthly at the new and full phases of the Moon

thermal energy internal energy found by adding the kinetic energy of particles making up a substance

tropism the motion of an organism or part of an organism toward or away from an external stimulus

trough the lowest point on a wave

variable an event, condition, or factor that can be changed or controlled in order to study or test a hypothesis in a scientific experiment

velocity the time-rate at which a body changes its position; defined as displacement divided by the time of travel

vibration a repetitive movement around an equilibrium point

virus a noncellular, disease-causing particle that uses the genetic material from its host to reproduce

wavelength the distance between crests of a wave

wedge a type of simple machine that consists of an inclined plane used to separate two objects

wheel and axle a type of simple machine that consists of a rod driven through the center of a cylinder that is allowed to rotate freely, yielding a mechanical advantage equal to the cylinder's diameter

Florida Science Academic Vocabulary Glossary

accurate: free from error; close to the correct amount

achieve: to gain, accomplish, attain, reach

adapt: to change to fit new conditions; to change in order to make suitable

adjacent: near, close, or adjoining

adjust: to arrange the parts of something to make it work correctly

adult: fully developed; grown

affect: to bring about a change in

apparent: appearing to be but not necessarily so, seeming; readily seen, visible, readily understood or perceived; evident; obvious

approach: to come near

available: ready to use

capable: able to do things; fit

category: group or class of things; a division in a classification system

chart: a sheet that gives information about something in the form of a diagram, graph, or table

chemical: any substance used in or obtained by a chemical process

code: (noun) set of signals representing letters or numerals, used to send messages; (verb) to put in the form of symbols of a code

collapse: to fall together, shrink

communicate: to make known or give information

compensate: to make up for

component: part of a machine or system

compound: made up of individual parts; made of two or more separate parts or elements

concentrate: to bring or come close together in one place

constant: not changing; continuing

contact: the act or state of touching or meeting

contract: to draw together; shrink in size

controversy: argument or debate

convert: to change from one form or use to another; to alter the physical or chemical nature or properties of

coordinate: to cause to work well together

cycle: a repeating sequence of events

decline: to become less in health, power, value, or number

definite: clear; without doubt

derive: to get or receive from a source

device: tool or instrument designed for a particular purpose

differentiate: to tell or see the difference

displace: to take the place of or remove from the usual or proper place

dominate: to have a command place; to exert mastery control, or preeminence; to control or rule

eliminate: to get rid of

emerge: to come out; to appear

enable: to make possible; to make able; to give means or power to

encounter: to meet or experience

enormous: having great size

Florida Science Academic Vocabulary Glossary

erode: to wear away

estimate: (noun) an opinion of the value, quality, size, or cost of something; (verb) to form an opinion by reasoning

evaluate: to determine the significance of something

exclude: to restrict or stop the entrance of

expand: to get bigger

external: positioned outside; beyond

extract: to take, get, or pull out

factor: a substance that functions in a body system

feature: part, appearance, or characteristic of something

function: (noun) a specific job or purpose; (verb) to carry out a specific action

fundamental: original or basic

goal: objective or end that one strives to achieve

hierarchy: a ranked series or order

hypothesis: something that is suggested as being true for the purposes of argument or of further investigation

identical: exactly the same; same as

impact: a strong, immediate effect

indicate: to make known or show; to be or give a sign of; to point out

individual: being or characteristic of a single thing

initial: of or relating to the beginning; first

insert: to put or fit (something) into something else

interact: to act upon one another; to influence one another

intermediate: in the middle or being between

internal: of or on the inside

interval: space or time between things

investigate: to search into something in order to learn the facts

item: object or thing

layer: one thickness of something over another, horizon

likewise: in the same way

mechanism: part or piece of machinery

medium: substance through which a force or effect is transmitted

method: particular procedure, technique, or way to do something; a process

neutral: neither negative nor positive

normal: conforming to a type, standard, or regular pattern

nuclear: of or relating to the atomic nucleus

obtain: to get through effort; gain

occur: to happen; to take place

overlap: one thing extends over another

parallel: everywhere the same distance apart

passive: induced by an outside agent

perceive: to observe or become aware of through the senses

percent: in, to, or for every one hundred

period: a repeating interval; row of the periodic table

phenomenon: any fact, condition, or happening that can be seen, heard, etc. and described in a scientific way

positive: real and numerically greater than zero

predict: to tell what one thinks will happen in the future; to foretell in advance on the basis of observation, experience, or scientific reason

principle: basic generalization that is accepted as true and that can be used as a basis for reasoning

process: series of changes by which something develops; series of changes that leads to a result

promote: to contribute to the growth of; to help bring into being

random: haphazard course; without definite aim, direction, rule, or method; lacking a definite plan, purpose, or pattern

ratio: relation of one thing to another in size or amount

react: to act because something has happened; to respond

recover: to get back something that has been lost

refine: to separate from impurities

regulate: to control according to rules or a system

reject: to refuse to accept or use

release: to set free; to let go

require: to be in need of

resource: something that lies ready for use or that can be drawn on for aid or to take care of a need

respond: to react to a stimulus

reveal: to make known; to show or display

rigid: not bending or moving; stiff and hard

section: one of several parts that together make up a whole

sequence: series; an order of events; one thing following another in a fixed order

series: a number of similar things coming one after another

significant: important; having meaning or effect

similar: having many but not all qualities in common; almost, but not exactly the same

source: that from which something comes into existence, develops, or derives; a thing or place from which something comes or is obtained

sphere: a round body, such as a ball, on which all points are the same distance from the center

stable: firmly established; not changing or fluctuating; not easily moved or changed

strategy: plan, scheme, or system

structure: arrangement of parts or the way parts are arranged

survey: to look at or study in detail

symbol: something that represents something else

technology: use of science for practical reasons, especially in engineering and industry

temporary: not permanent or lasting

theory: explanation of things or events based on scientific knowledge resulting from many observations and experiments; a group of ideas or principles that explain why or how something happens

transfer: to carry or send from one person, place, or position to another

Florida Science Academic Vocabulary Glossary

transform: to change the condition, nature, or function of; to convert

transport: to carry from one place to another

trend: a general movement or tendency

undergo: to go through; have happen to one

underlie: to lie beneath

unique: being the only one; unusual; remarkable

vary: to change; to make or become different

version: variant of an original

visible: able to be seen; perceptible with the eye

voluntary: acting, done, or given of one's own free will; by choice

widespread: widely scattered or prevalent