

SCIENCE

4 Today

Daily Skill Practice

Word bank to complete the sentences. Not all words will be used.

atmosphere exosphere gravity mesosphere
thermosphere troposphere

_____ is about 500 miles (805 km) high.


_____ to Earth because of _____.

_____ layer.

_____ layer, which is space, is the _____ layer.

_____ is in the _____ layer.

_____ diagram for a report about the atmosphere. Use the word bank in _____ to help you.



_____ are in the troposphere? Tell why each is _____.

_____ troposphere is made of oxygen.

_____ nitrogen gas in the air usable to organisms.

_____ also make nitrogen gas usable to organisms.

_____ nitrogen.

_____ oxygen in dead organisms into nitrogen gas.

_____ constantly decreasing each year.

Day 1

Day 2

Day 3

Day 4

Week #26 A

_____ Atmosphere

_____ the questions.

_____ ozone layer is often the topic of news reports. It has been reported that _____ the ozone layer had dangerously thinned in the 1980s, though NASA has recently reported that the layer is beginning to improve. Why do you think so many people are interested in the ozone layer of the atmosphere? Give two reasons.

_____ think would happen to the atmosphere if there was no gravity? How would that affect life on Earth?

_____ of each kind of gas in the troposphere. Use the chart to answer the questions.

Gas	Percent (%)
Nitrogen	78
Oxygen	21
Carbon dioxide	0.9
Water vapor	0.1

_____ non-categorized gases in the troposphere? How do they affect the atmosphere?

- Common Core aligned
- Daily practice paired with weekly assessments
- Ready to use for warm-ups, centers, or early finishers
- Reproducible
- A full 40 weeks of activities

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Introduction

Common Core Science 4 Today is a perfect supplement to any classroom science curriculum. Students' science skills will grow as they support their knowledge of science topics with a variety of engaging activities.

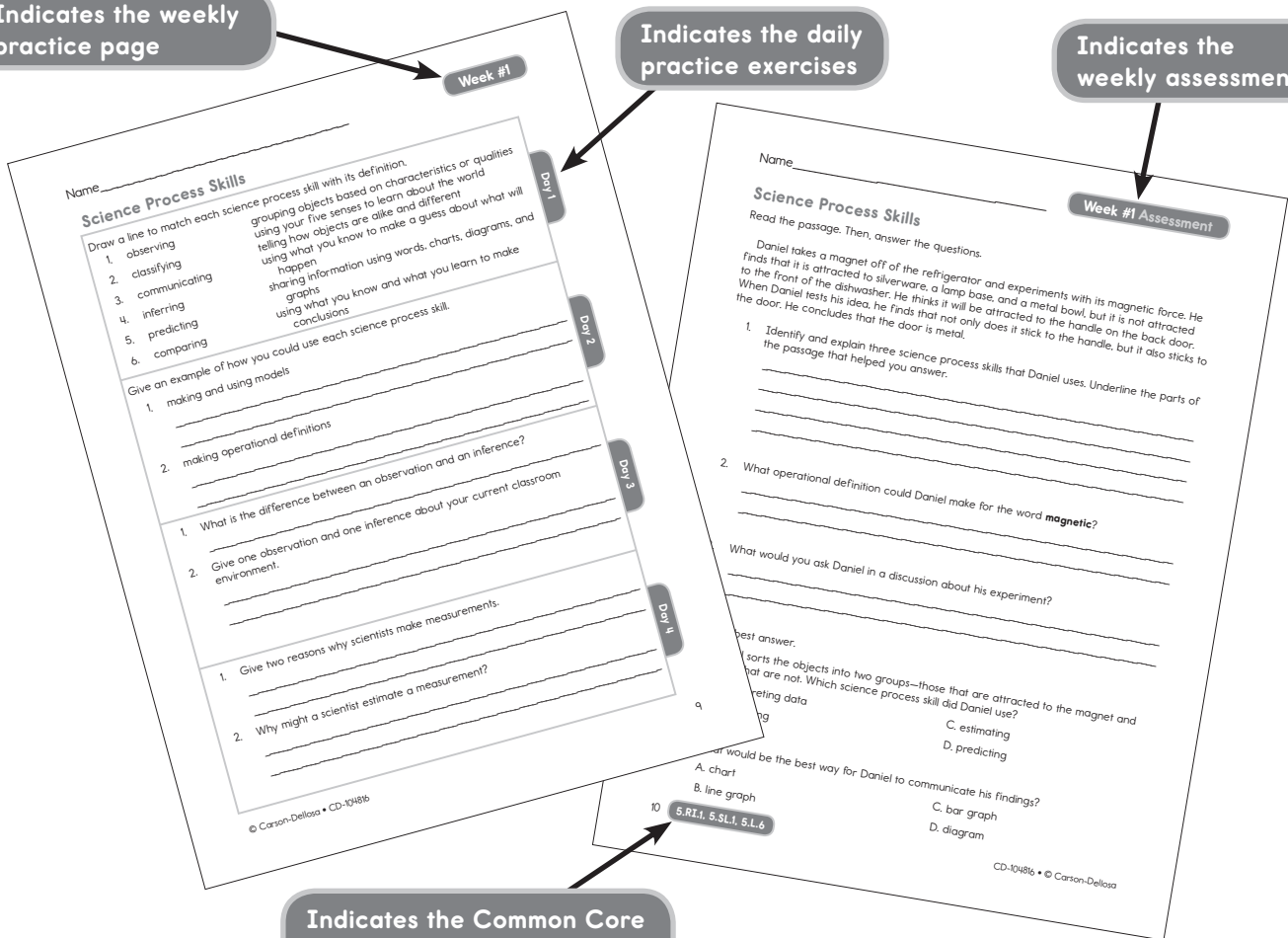
This book covers 40 weeks of daily practice. You may choose to work on the topics in the order presented or choose the topic that best reinforces your science curriculum for that week. During the course of four days, students take about 10 minutes to complete questions and activities focused on a science topic. On the fifth day, students complete a short assessment on the topic.

Various skills and concepts in math and English language arts are reinforced throughout the book through activities that align to the Common Core State Standards. Because of the nature of the Speaking and Listening standards, classroom time constraints, and the format of the book, students may be asked to record verbal responses. You may wish to have students share their answers as time allows. To view these standards, please see the Common Core State Standards Alignment Matrix on pages 5 to 8.

Indicates the weekly practice page

Indicates the daily practice exercises

Indicates the weekly assessment



Indicates the Common Core State Standards covered in the daily practice exercises and the weekly assessment

Name _____

Science Process Skills

Draw a line to match each science process skill with its definition.

- | | |
|------------------|---|
| 1. observing | grouping objects based on characteristics or qualities |
| 2. classifying | using your five senses to learn about the world |
| 3. communicating | telling how objects are alike and different |
| 4. inferring | using what you know to make a guess about what will happen |
| 5. predicting | sharing information using words, charts, diagrams, and graphs |
| 6. comparing | using what you know and what you learn to make conclusions |

Day 1

Give an example of how you could use each science process skill.

1. making and using models

2. making operational definitions

Day 2

1. What is the difference between an observation and an inference?

2. Give one observation and one inference about your current classroom environment.

Day 3

1. Give two reasons why scientists make measurements.

2. Why might a scientist estimate a measurement?

Day 4

Name _____

Science Process Skills

Read the passage. Then, answer the questions.

Daniel takes a magnet off of the refrigerator and experiments with its magnetic force. He finds that it is attracted to silverware, a lamp base, and a metal bowl, but it is not attracted to the front of the dishwasher. He thinks it will be attracted to the handle on the back door. When Daniel tests his idea, he finds that not only does it stick to the handle, but it also sticks to the door. He concludes that the door is metal.

1. Identify and explain three science process skills that Daniel uses. Underline the parts of the passage that helped you answer.

2. What operational definition could Daniel make for the word **magnetic**?

3. What would you ask Daniel in a discussion about his experiment?

Circle the best answer.

4. Daniel sorts the objects into two groups—those that are attracted to the magnet and those that are not. Which science process skill did Daniel use?

- | | |
|----------------------|----------------|
| A. interpreting data | B. classifying |
| C. estimating | D. predicting |

5. What would be the best way for Daniel to communicate his findings?

- | | |
|--------------|---------------|
| A. T-chart | B. line graph |
| C. bar graph | D. diagram |

Name _____

Measurement and Graphic Aids

Complete the chart to tell corresponding units used to measure each characteristic.

Characteristic	Customary Units	Metric Units
1. mass		
2. liquid capacity		
3. length		
4. distance		
5. temperature		

Day 1

1. What measurement system is used in the science community?

2. Why do all scientists use this system?

Day 2

1. Mia made a chart to show the kinds of materials in her recycling bin. What two conclusions can she make based on the data in the chart?

Material	Number of Pieces
aluminum	8
tin	2
plastics	3
glass	2
paper	5

Day 3

1. Draw a graphic aid to show the data in the chart for a report Mia is presenting.

Day 4

Name _____

Measurement and Graphic Aids

Answer the questions.

Carla grew 10 plants for an experiment. She measured their growth each week and recorded the data in a chart.

Week 3			
Plant	Height (cm)	Plant	Height (cm)
1	$1\frac{1}{4}$	6	$1\frac{1}{2}$
2	$1\frac{1}{4}$	7	2
3	$1\frac{3}{4}$	8	$1\frac{1}{2}$
4	$1\frac{1}{2}$	9	$1\frac{5}{8}$
5	$1\frac{1}{8}$	10	$1\frac{3}{4}$

1. Draw a line plot to show the data for the week.

2. Why is a line plot a good graphic aid to show the data?

3. What conclusion can Carla make from her data?

4. What is the average height of a three-week-old plant? To find the average, add all of the heights together and divide by the total number of plants.

Name _____

Experiments

Write **true** or **false**.

1. _____ An experiment always tests a hypothesis.
2. _____ A scientist makes a prediction based on the results of the experiment.
3. _____ Experiments need to be controlled to make sure they are fair.
4. _____ It is important to change at least two variables during an experiment.
5. _____ All data needs to be carefully recorded during an experiment.

Day 1

1. Your partner for a science experiment wants to begin right away. You would like to read through the entire set of instructions. What would you say to your partner?

Day 2

1. What are three safety rules that people should follow during an experiment? Write a paragraph for a public safety announcement.

Day 3

1. Your class divides into several groups to complete the same experiment. The groups get different results. How would you explain the possible reasons for the differences?

Day 4

Name _____

Variables

1. What is a variable?

2. What is the function of a variable in an experiment?

Day 1

Use each term in a sentence to explain its meaning.

1. dependent variable _____

2. independent variable _____

3. controlled variable _____

Day 2

1. Mona plans to do an experiment with her dog and his food. She is going to change the amount of food and the time of day she feeds her dog to see if the changes affect how quickly he eats the meal. Explain to Mona why she should change her experiment and how.

Day 3

Drew is experimenting on a circuit. He wants to know if the size of the wire used affects battery life. Identify the variables in Drew's experiment.

1. independent variable _____

2. dependent variable _____

3. controlled variables _____

Day 4

Name _____

Variables

Identify the independent, dependent, and controlled variables for each experiment.

- Chelsea wants to test how different soil additives affect plant growth. She decides to test sand, compost, fertilizer, gypsum, and lime. She uses the same potting mix and seeds for each pot and adds two tablespoons of each additive to the soil before planting the seeds. She makes three pots with each additive. She places them all in a windowsill and waters them daily. She also measures the height of each plant daily.

A. independent variable _____

B. dependent variable _____

C. controlled variables _____

- Nick wants to experiment with how temperature affects different candies. He gathers chocolate bars, gummy bears, lollipops, and gum. He places one of each type of candy on the counter, in the freezer, and in a microwave for 30 seconds. He tests each candy for hardness, as well as any other observable changes, and records his observations.

A. independent variable _____

B. dependent variable _____

C. controlled variables _____

- Luke wants to make a better oven mitt. He plans to test different materials such as newspaper folded 2" thick, fleece, corrugated cardboard, and woven sea grass. With an adult's help, he places four metal pans in a 350° oven for 30 minutes. Then, an adult removes the pans from the oven and places each one on the materials. He places a thermometer under each material to immediately measure the amount of heat transfer. He tests the materials again at five minutes and a last time at 10 minutes.

A. independent variable _____

B. dependent variable _____

C. controlled variables _____

Answer Key

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Day 1: 1. using your five senses to learn about the world; 2. grouping objects based on characteristics or qualities; 3. sharing information using words, charts, diagrams, and graphs; 4. using what you know and what you learn to make conclusions; 5. using what you know to make a guess about what will happen; 6. telling how objects are alike and different;

Day 2: 1–2. Answers will vary. **Day 3:** 1. An observation is a concrete fact that can be observed. An inference is a conclusion based on observed facts. 2. Answers will vary.

Day 4: 1. Answers will vary but may include to be objective and to allow other scientists to try to repeat their experiments successfully. 2. Answers will vary but may include to make a conclusion simpler to understand.

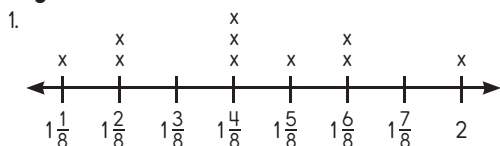
Page 10

1. Answers will vary but may include that he makes a hypothesis about what the magnet will stick to and tests it in an experiment. He observes the results of the experiment to see that the magnet does stick to the handle. He infers that the door is also metal, because the magnet sticks to it. 2. Answers will vary but may include that magnetic means having a force that attracts metal objects. 3. Answers will vary. 4. B; 5. A

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Day 1: 1. pound, gram; 2. quart, liter; 3. inch, centimeter; 4. mile, kilometer; 5. degrees Fahrenheit, degrees Celsius; **Day 2:** 1. The metric system is used in the science community. 2. Answers will vary but may include that the metric system allows scientists all around the world to understand the data gathered, even if they do not speak the same language. **Day 3:** 1. Answers will vary. **Day 4:** 1. Drawings will vary but may include a bar graph.

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2. A line plot shows trends in data. 3. Answers will vary.

4. $1\frac{21}{40}$ centimeters

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Day 1: 1. true; 2. false; 3. true; 4. false; 5. true; **Day 2:** 1. Answers will vary but may include that you should read the instructions. You need to make sure you have all of the materials called for. You also need to know how to set up the experiment to complete it. **Day 3:** 1. Answers will vary. **Day 4:** Answers will vary but may include that some control variables may have been slightly different.

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1. Answers will vary but may include that she should examine the plant for problems such as bugs and amounts of water given to the plant. 2. Answers will vary but may include goggles, hand lens, and water. 3. Answers will vary.

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Day 1: 1. A variable is an element in an experiment that is able to vary, or change. 2. In an experiment, the variable is changed in order to find its effect on something else.

Day 2: 1. Answers will vary but may include that a dependent variable's values change because of changes in another variable. 2. Answers will vary but may include that the independent variable is the variable that is changed in an experiment. 3. Answers will vary but may include that a controlled variable is any variable that stays the same in an experiment. **Day 3:** 1. Mona should only change one variable at a time. If she does not, she will not know what variable causes a change in the speed at which her dog eats. **Day 4:** 1. size of the wire; 2. battery life; 3. Answers will vary but may include the length of the wires, the brand of battery, and the amount of time the battery stays connected.

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1. A. soil additives; B. plant height; C. Answers will vary but may include amount of sunlight, amount of water, and frequency of watering. 2. A. temperature; B. hardness and other observable changes; C. Answers will vary but may include the same brand of candy, the place used to change the temperature, and the amount of time the candy spent there. 3. A. the material used; B. temperature/heat transfer; C. Answers will vary but may include the amount of time the object is heated, the time intervals at which the heat is tested, and using the same thermometer each time.

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Day 1: 1. In a scientific context, evidence is the data collected in an experiment. 2. Answers will vary but may include that evidence is important because it allows other scientists to retry and compare the experiment results. **Day 2:** 1. Answers will vary. **Day 3:** 1. E; 2. E; 3. S; 4. S; 5. E; **Day 4:** 1. Conclusions are based on evidence. 2. Evidence allows scientists to accurately compare the results of repeated experiments.

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1. Answers will vary but may include checking the relative dimness of lightbulbs. 2. Answers will vary but may include finding the mass of the moss before and after letting it dry out for a period of time. 3. Answers will vary but may include giving people a blind taste test and asking them to choose the sample made with artificial sweeteners. 4. Answers will vary but may include measuring the volume of aged versus fresh bags. 5. Answers will vary.

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Day 1: 1. Matter; 2. element; 3. atom; 4. periodic; 5. molecule;

Day 2: 1. true; 2. false; 3. true; 4. false; 5. true;

Day 3: 1. A. electron; B. proton; C. nucleus; D. neutron;

2. Answers will vary. **Day 4:** 1. oxygen; 2. It tells the number of protons in the element. 3. 8; 4. It tells the symbol for the element.