

**Parent Guide for Student Success**

For use with Chapter 1

**Chapter Overview** One way that you can help your student succeed in Chapter 1 is by discussing the lesson goals in the chart below. When a lesson is completed, ask your student to interpret the lesson goals for you and to explain how the mathematics of the lesson relates to one of the key applications listed in the chart.

| <i>Lesson Title</i>  | <i>Lesson Goals</i>   | <i>Key Applications</i>   |
|--|---|---|
| <b>1.1: Patterns and Inductive Reasoning</b>                   | Find and describe patterns. Use inductive reasoning to make real-life conjectures.                                    | <ul style="list-style-type: none"> <li>• Moon Cycles</li> <li>• Bacteria Growth</li> <li>• Molecular Compounds</li> </ul> |
| <b>1.2: Points, Lines, and Planes</b>                          | Understand and use basic undefined terms and defined terms of geometry. Sketch the intersections of lines and planes. | <ul style="list-style-type: none"> <li>• Photographs</li> <li>• Sculpture</li> <li>• Perspective Drawing</li> </ul>       |
| <b>1.3: Segments and Their Measures</b>                        | Use segment postulates. Use the Distance Formula to measure distances.  | <ul style="list-style-type: none"> <li>• Map Reading</li> <li>• Incline Railway</li> <li>• Long-Distance Rates</li> </ul> |
| <b>1.4: Angles and Their Measures</b>                          | Use angle postulates and classify angles as acute, right, obtuse, or straight.  | <ul style="list-style-type: none"> <li>• Angle of Vision</li> <li>• Geography</li> <li>• Airport Runways</li> </ul>       |
| <b>1.5: Segment and Angle Bisectors</b>                        | Bisect a segment and bisect an angle.   | <ul style="list-style-type: none"> <li>• Kite Design</li> <li>• Strike Zone</li> <li>• Paper Airplanes</li> </ul>         |
| <b>1.6: Angle Pair Relationships</b>                           | Identify vertical angles and linear pairs. Identify complementary and supplementary angles.                           | <ul style="list-style-type: none"> <li>• Stair Railings</li> <li>• Bridges</li> <li>• Planting Trees</li> </ul>           |
| <b>1.7: Introduction to Perimeter, Circumference, and Area</b> | Find the perimeter and area of common plane figures. Use a general problem-solving plan.                              | <ul style="list-style-type: none"> <li>• Flag Design</li> <li>• Millennium Dome</li> <li>• Cranberry Harvest</li> </ul>   |

**Study Strategy**

**Learning Vocabulary** is the study strategy featured in Chapter 1 (see page 2). Be sure your student has set up a notebook in which to keep math notes, with a section for definitions of new words. Encourage your student to make sure that vocabulary notes are clear and up-to-date, with appropriate use of diagrams. Your student can use these vocabulary notes to share with you what was done in class and to study for tests and quizzes.

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**Key Ideas** Your student can demonstrate understanding of key concepts by working through the following exercises with you.

| <b>Lesson</b> | <b>Exercise</b>   |
|---------------|---|
| <b>1.1</b>    | Describe a pattern in the sequence of numbers. Predict the next number.<br>4, 4, 8, 12, 20, 32, . . .   |
| <b>1.2</b>    | Give an example of the intersection of two planes in a room in your house.  |
| <b>1.3</b>    | Use the Distance Formula to decide whether $\overline{PQ} \cong \overline{QR}$ for $P(2, 3)$ , $Q(4, -2)$ , and $R(-1, 0)$ . Explain.   |
| <b>1.4</b>    | Think about the angle between the hands of a clock at 10:00. Is the angle <i>acute</i> , <i>right</i> , <i>obtuse</i> , or <i>straight</i> ? What about at 7:00?  |
| <b>1.5</b>    | Segment $PQ$ has midpoint $M$ . $P$ has coordinates $(-3, 5)$ . $M$ has coordinates $(7, -1)$ . Find the coordinates of $Q$ .   |
| <b>1.6</b>    | Main Street in a certain town is straight. Water Street dead ends into Main Street so the angle on one corner is twice the angle on the other corner. Find the angles formed by Main and Water Streets.           |
| <b>1.7</b>    | The circular area around a flag pole has a diameter of 12 feet. A landscaper charges \$2 a square foot to establish a lawn. How much would it cost to establish a lawn around the flag pole? Use 3.14 for $\pi$ . |

**Home Involvement Activity**

**You Will Need:** A tape measure

**Directions:** Measure the dimensions of a room in your home. Find the area. Find a type of carpet you like and find out how much the carpet costs per square foot. Not including labor for installation, how much would it cost to carpet the room?

**Answers**  
**1.1:** Each number after the first two is the sum of the two numbers before it. The next number is 52.  
**1.2:** *Sample answer:* where the floor and one of the walls meet **1.3:** Yes, both have length  $\sqrt{29}$ .  
**1.4:** acute; obtuse **1.5:**  $(17, -7)$  **1.6:**  $60^\circ$  and  $120^\circ$  **1.7:** \$226.08

ANSWERS