Supporting STAAR™ Achievement: Targeting the TEKS and Readiness Standards

Grade 6 Mathematics

Teacher Edition

Product ID:
407-1672

Table of Contents

What Is *Supporting STAAR™ Achievement: Targeting the TEKS and Readiness Standards*?

1. A resource that focuses on the TEKS identified as readiness standards while integrating appropriate supporting standards and mathematical processes and skills

2. A resource that provides opportunities for rigorous mathematical conversations while providing supports for students at varying levels of readiness

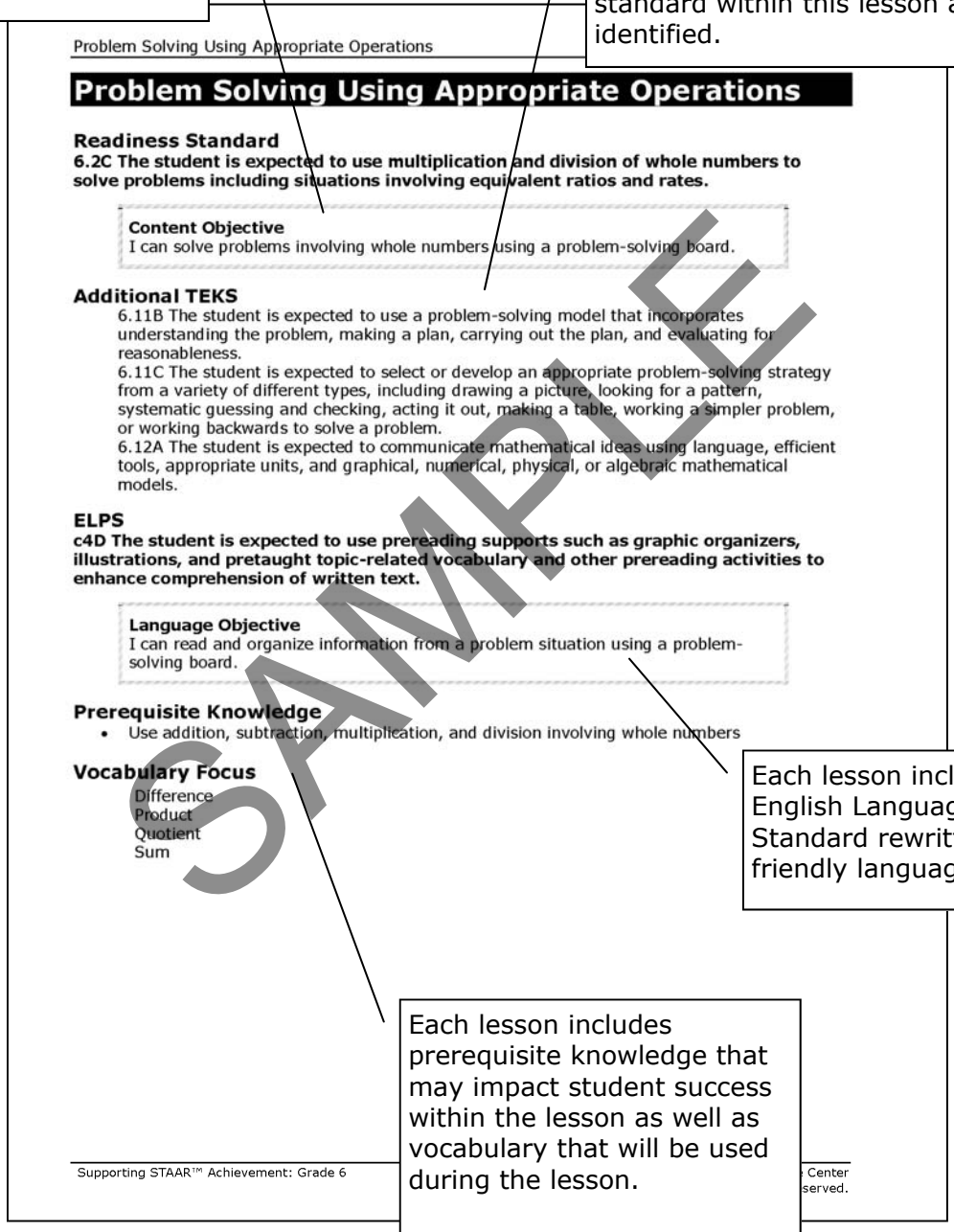
3. A resource that provides support for English language learners and students struggling to learn mathematics through Tier I differentiated activities, preteaching experiences, scaffolds for activities such as hint cards and graphic organizers, and facilitation questions

4. A resource that supports beginning as well as experienced teachers through clear instructions and facilitation questions that focus on potential stumbling blocks for students in the effort to bridge to formal understanding of mathematics

5. A resource of classroom-ready 5E lessons. The Engage phase of each lesson consists of a student-centered activity that either bridges from students' prior knowledge or encourages interest in deeper exploration of the concepts in the lesson. The Explore phase of each lesson provides students with an opportunity to "do mathematics" and begin to formulate ideas and conjectures. In the Explain phase of each lesson, students formalize the mathematical ideas from the Explore phase with a focus on academic vocabulary, as well as procedures related to the concepts. The Elaborate phase of each lesson allows students to apply or extend their understanding of the concepts in the lesson. The Evaluate phase consists of four selected-response or griddable items that can be used to assess student understanding.

Each readiness standard has been rewritten in student-friendly language so that students may gauge their learning.

Additional TEKS that support the conceptual and procedural development of the readiness standard within this lesson are identified.



Problem Solving Using Appropriate Operations

Problem Solving Using Appropriate Operations

Readiness Standard
6.2C The student is expected to use multiplication and division of whole numbers to solve problems including situations involving equivalent ratios and rates.

Content Objective
I can solve problems involving whole numbers using a problem-solving board.

Additional TEKS
6.11B The student is expected to use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating for reasonableness.
6.11C The student is expected to select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem.
6.12A The student is expected to communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models.

ELPS
c4D The student is expected to use prereading supports such as graphic organizers, illustrations, and pretaught topic-related vocabulary and other prereading activities to enhance comprehension of written text.

Language Objective
I can read and organize information from a problem situation using a problem-solving board.

Prerequisite Knowledge
- Use addition, subtraction, multiplication, and division involving whole numbers

Vocabulary Focus
Difference
Product
Quotient
Sum

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SAMPLE

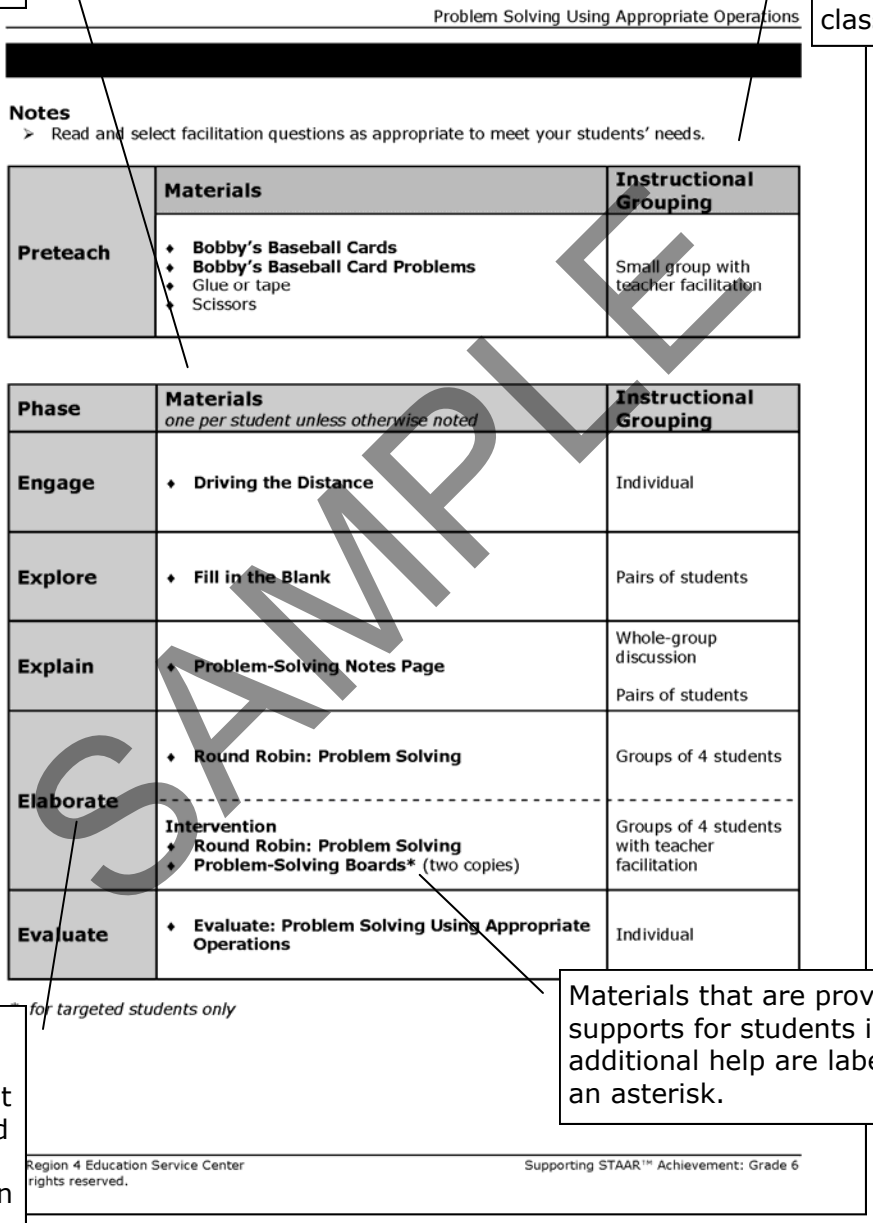
Each lesson includes an English Language Proficiency Standard rewritten in student-friendly language.

Each lesson includes prerequisite knowledge that may impact student success within the lesson as well as vocabulary that will be used during the lesson.

What Is in a Lesson Found in *Supporting STAAR™ Achievement: Targeting the TEKS and Readiness Standards*?

Materials for each phase are summarized on one page for ease in preparation.

Grouping strategies for each phase are summarized to assist in the arrangement of the classroom.



Problem Solving Using Appropriate Operations

Notes

- Read and select facilitation questions as appropriate to meet your students' needs.

	Materials	Instructional Grouping
Preteach	♦ **Bobby's Baseball Cards** ♦ **Bobby's Baseball Card Problems** ♦ Glue or tape ♦ Scissors	Small group with teacher facilitation

Phase	Materials *one per student unless otherwise noted*	Instructional Grouping
Engage	♦ **Driving the Distance**	Individual
Explore	♦ **Fill in the Blank**	Pairs of students
Explain	♦ **Problem-Solving Notes Page**	Whole-group discussion Pairs of students
Elaborate	♦ **Round Robin: Problem Solving**	Groups of 4 students
	Intervention ♦ **Round Robin: Problem Solving** ♦ **Problem-Solving Boards*** (two copies)	Groups of 4 students with teacher facilitation
Evaluate	♦ **Evaluate: Problem Solving Using Appropriate Operations**	Individual

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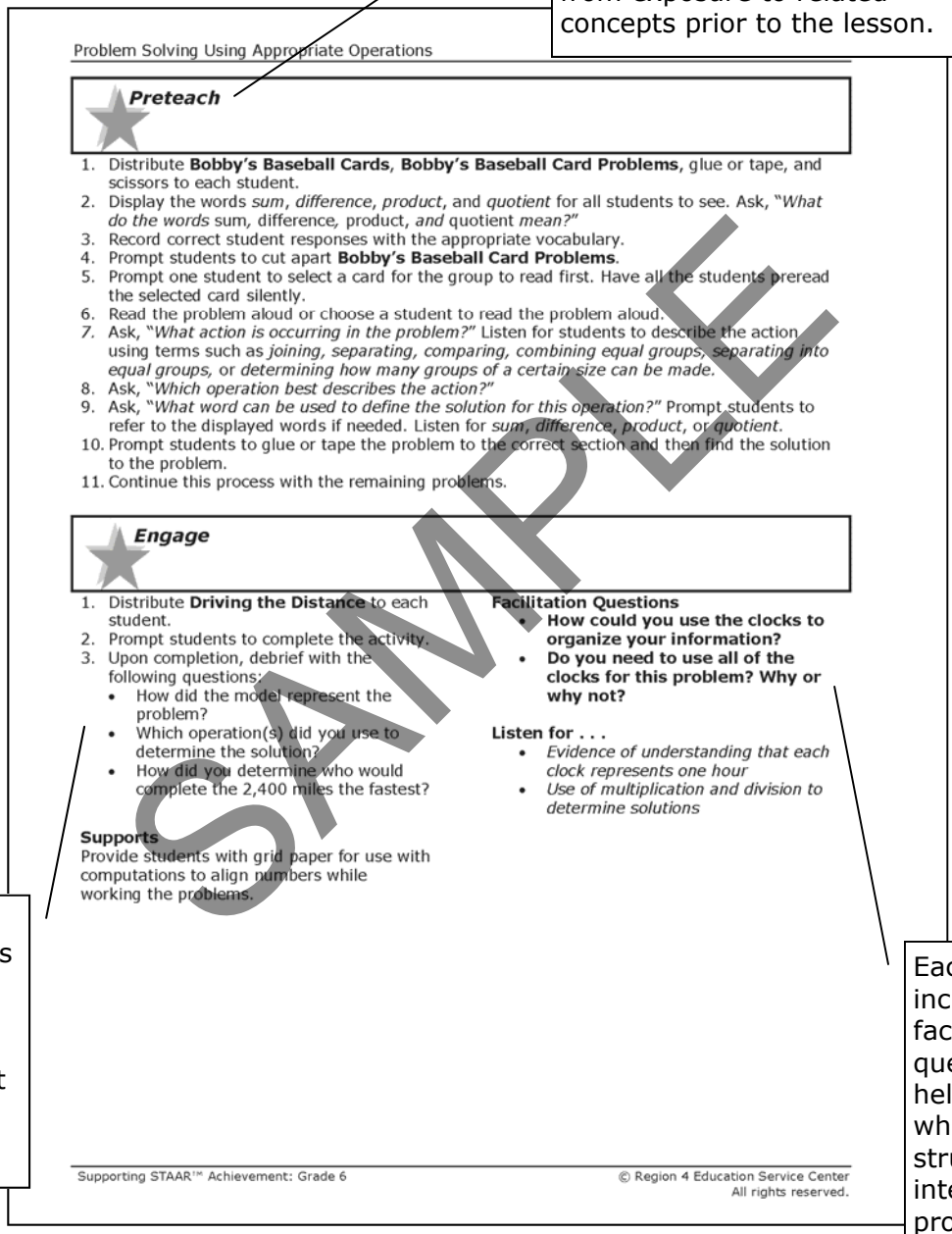
The Elaborate phase has two concurrent components: a student-facilitated activity and a teacher-facilitated activity that focuses on the needs of students struggling with the content.

Materials that are provided as supports for students in need of additional help are labeled with an asterisk.

Each lesson includes a preteach activity that teachers may use with students who might benefit from exposure to related concepts prior to the lesson.



Problem Solving Using Appropriate Operations

Preteach

1. Distribute **Bobby's Baseball Cards**, **Bobby's Baseball Card Problems**, glue or tape, and scissors to each student.
2. Display the words *sum*, *difference*, *product*, and *quotient* for all students to see. Ask, "*What do the words* sum, difference, product, *and* quotient *mean?*"
3. Record correct student responses with the appropriate vocabulary.
4. Prompt students to cut apart **Bobby's Baseball Card Problems**.
5. Prompt one student to select a card for the group to read first. Have all the students preread the selected card silently.
6. Read the problem aloud or choose a student to read the problem aloud.
7. Ask, "*What action is occurring in the problem?*" Listen for students to describe the action using terms such as *joining, separating, comparing, combining equal groups, separating into equal groups,* or *determining how many groups of a certain size can be made.*
8. Ask, "*Which operation best describes the action?*"
9. Ask, "*What word can be used to define the solution for this operation?*" Prompt students to refer to the displayed words if needed. Listen for *sum*, *difference*, *product*, or *quotient*.
10. Prompt students to glue or tape the problem to the correct section and then find the solution to the problem.
11. Continue this process with the remaining problems.

Engage

1. Distribute **Driving the Distance** to each student.
2. Prompt students to complete the activity.
3. Upon completion, debrief with the following questions:
   - How did the model represent the problem?
   - Which operation(s) did you use to determine the solution?
   - How did you determine who would complete the 2,400 miles the fastest?

Supports
Provide students with grid paper for use with computations to align numbers while working the problems.

Facilitation Questions
- **How could you use the clocks to organize your information?**
- **Do you need to use all of the clocks for this problem? Why or why not?**

Listen for . . .
- *Evidence of understanding that each clock represents one hour*
- *Use of multiplication and division to determine solutions*

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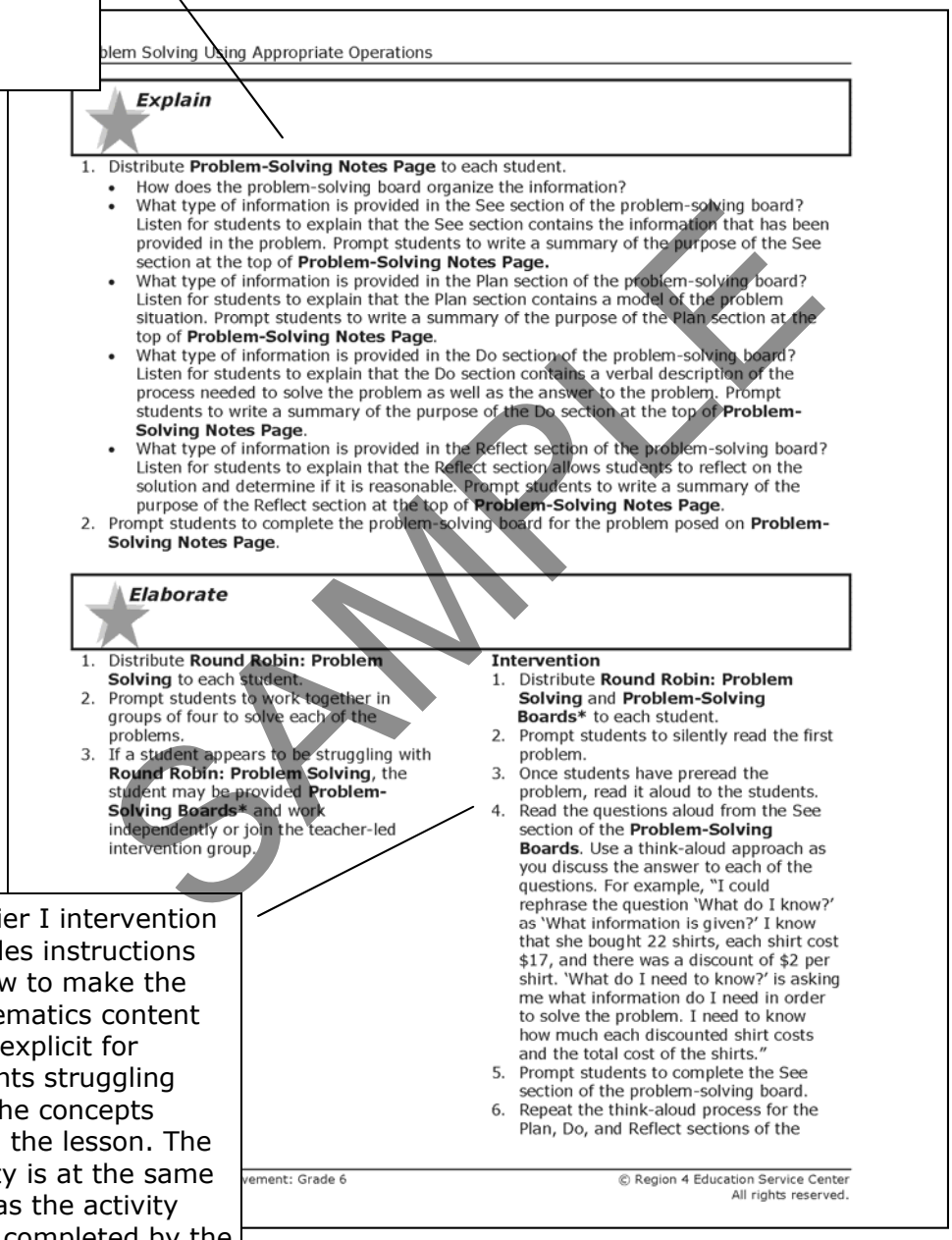
Each phase includes directions to implement the activity and the identification of additional student supports for the activity.

Each phase includes facilitation questions to help students who may be struggling to interpret or process components of the activity.

Titles of activity masters and student pages are printed in bold for ease of reference.



blem Solving Using Appropriate Operations

Explain

1. Distribute **Problem-Solving Notes Page** to each student.
   - How does the problem-solving board organize the information?
   - What type of information is provided in the See section of the problem-solving board? Listen for students to explain that the See section contains the information that has been provided in the problem. Prompt students to write a summary of the purpose of the See section at the top of **Problem-Solving Notes Page.**
   - What type of information is provided in the Plan section of the problem-solving board? Listen for students to explain that the Plan section contains a model of the problem situation. Prompt students to write a summary of the purpose of the Plan section at the top of **Problem-Solving Notes Page**.
   - What type of information is provided in the Do section of the problem-solving board? Listen for students to explain that the Do section contains a verbal description of the process needed to solve the problem as well as the answer to the problem. Prompt students to write a summary of the purpose of the Do section at the top of **Problem-Solving Notes Page**.
   - What type of information is provided in the Reflect section of the problem-solving board? Listen for students to explain that the Reflect section allows students to reflect on the solution and determine if it is reasonable. Prompt students to write a summary of the purpose of the Reflect section at the top of **Problem-Solving Notes Page**.
2. Prompt students to complete the problem-solving board for the problem posed on **Problem-Solving Notes Page**.

Elaborate

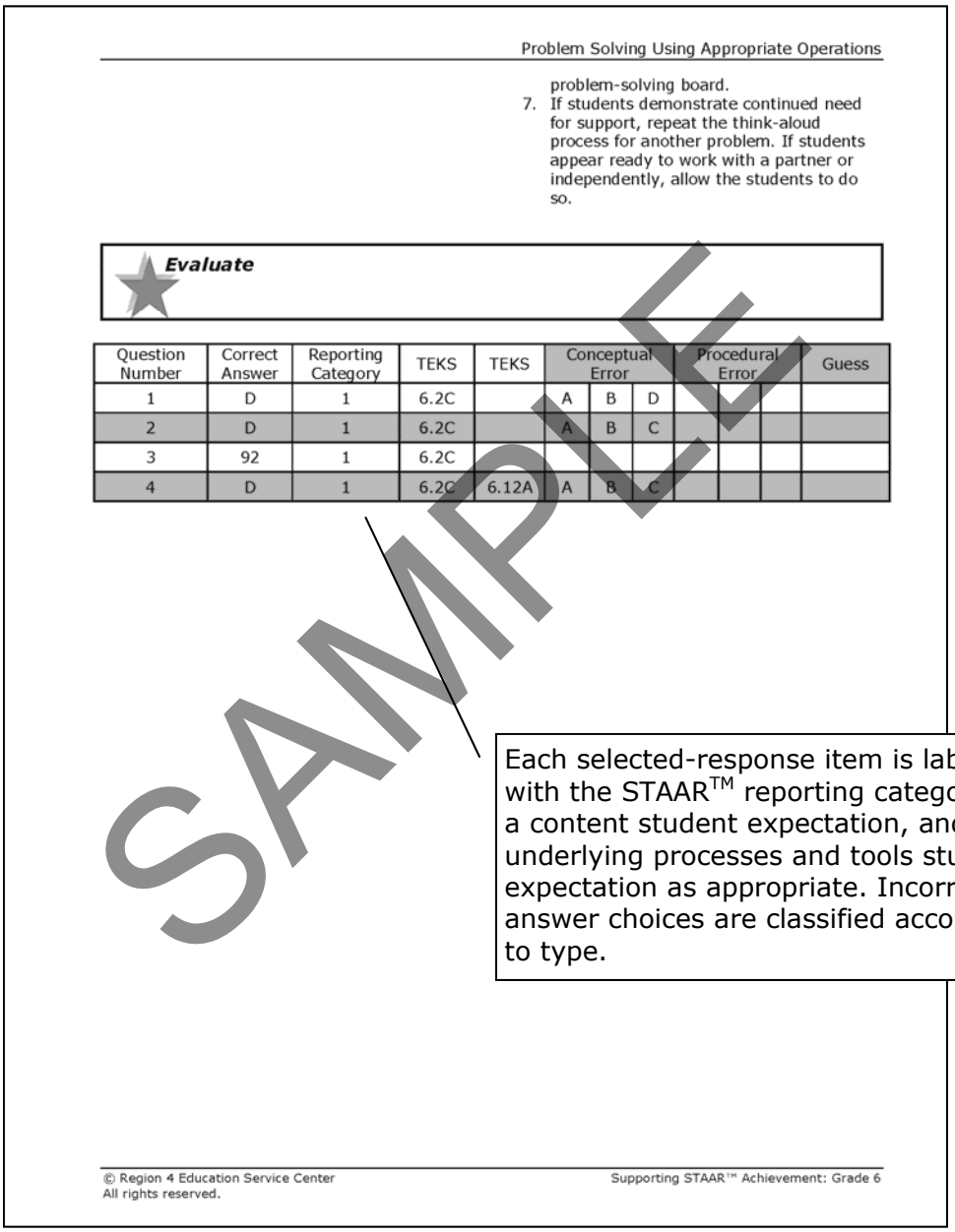
1. Distribute **Round Robin: Problem Solving** to each student.
2. Prompt students to work together in groups of four to solve each of the problems.
3. If a student appears to be struggling with **Round Robin: Problem Solving**, the student may be provided **Problem-Solving Boards*** and work independently or join the teacher-led intervention group.

Intervention

1. Distribute **Round Robin: Problem Solving** and **Problem-Solving Boards*** to each student.
2. Prompt students to silently read the first problem.
3. Once students have preread the problem, read it aloud to the students.
4. Read the questions aloud from the See section of the **Problem-Solving Boards**. Use a think-aloud approach as you discuss the answer to each of the questions. For example, "I could rephrase the question 'What do I know?' as 'What information is given?' I know that she bought 22 shirts, each shirt cost $17, and there was a discount of $2 per shirt. 'What do I need to know?' is asking me what information do I need in order to solve the problem. I need to know how much each discounted shirt costs and the total cost of the shirts."
5. Prompt students to complete the See section of the problem-solving board.
6. Repeat the think-aloud process for the Plan, Do, and Reflect sections of the

vement: Grade 6

The Tier I intervention provides instructions on how to make the mathematics content more explicit for students struggling with the concepts within the lesson. The activity is at the same rigor as the activity being completed by the students in a self-directed environment.



Problem Solving Using Appropriate Operations

problem-solving board.

7. If students demonstrate continued need for support, repeat the think-aloud process for another problem. If students appear ready to work with a partner or independently, allow the students to do so.

Evaluate

Question Number	Correct Answer	Reporting Category	TEKS	TEKS	Conceptual Error			Procedural Error			Guess
1	D	1	6.2C		A	B	D				
2	D	1	6.2C		A	B	C				
3	92	1	6.2C								
4	D	1	6.2C	6.12A	A	B	C				

Each selected-response item is labeled with the STAAR™ reporting category, a content student expectation, and an underlying processes and tools student expectation as appropriate. Incorrect answer choices are classified according to type.

Supporting STAAR™ Achievement: Grade 6

Equations from Problem Situations

Readiness Standard

6.5 The student is expected to formulate equations from problem situations described by linear relationships.

Content Objective
I can write equations to represent problems using variables.

Additional TEKS

6.2E The student is expected to use order of operations to simplify whole number expressions (without exponents) in problem solving situations.
6.11A The student is expected to identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics.
6.12A The student is expected to communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models.

ELPS

c3D The student is expected to speak using grade-level content area vocabulary in context to internalize new English words and build academic language proficiency.

Language Objective
I can learn math vocabulary by speaking to a partner using sentence frames.

Additional ELPS

c1C The student is expected to use strategic learning techniques such as concept mapping, drawing, memorizing, comparing, contrasting, and reviewing to acquire basic and grade-level vocabulary.
c5B The student is expected to write using newly acquired basic vocabulary and content-based grade-level vocabulary.

Prerequisite Knowledge

- Use symbols to represent and describe arithmetic sequences
- Simplify whole-number expressions (without exponents) using order of operations
- Use simple equations to represent meaningful problem situations

Vocabulary Focus

Equation
Expression
Known
Unknown
Variable
Order of Operations

Notes

- Read and select facilitation questions as appropriate to meet your students' needs.

	Materials	Instructional Grouping
Preteach	♦ **Describe the Process** ♦ Paper bag containing 1-inch square tiles (some of each color: blue, green, yellow, red)	Small group with teacher facilitation

Phase	Materials *one per student unless otherwise noted*	Instructional Grouping
Engage	♦ **Isabelle's Ice Cream Shoppe** ♦ **Isabelle's Ice Cream Shoppe Menu** (one menu per pair of students) ♦ **Isabelle's Ice Cream Shoppe*** ♦ **Isabelle's Ice Cream Shoppe Menu*** (one menu per pair of students) ♦ **Spinners*** ♦ Paper clip (one per pair of students)	Pairs of students
Explore	♦ **Barry's Boardwalk Café** ♦ Small sticky notes ♦ **Barry's Boardwalk Café Hint Cards*** ♦ Scissors ♦ Tape or glue*	Pairs of students
Explain	♦ **Equations from Problem Situations Notes Page**	Whole-group discussion
Elaborate	♦ **Equation Dominoes** ♦ Scissors ♦ Tape or glue ♦ Construction paper (one piece per group)	Pairs of students
	Intervention ♦ **Equation Dominoes** ♦ Scissors ♦ Tape or glue ♦ Construction paper (one piece per group)	Small group with teacher facilitation
Evaluate	♦ **Evaluate: Equations from Problem Situations**	Individual

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Preteach

Teacher Note: The color tiles are nonproportional models for the values.

1. Distribute paper bags containing 1-inch square tiles and **Describe the Process** to each student or pair of students. Each bag should contain some of each color: blue, green, yellow, and red.
2. Prompt students to draw some tiles from the bag and sort their collections into stacks by color. Record the number of tiles of each color.
   - *What process could you use to determine the value of the blue tiles in your collection?* Listen for an appropriate process, which may include forming groups of two tiles, which would have a value of $1, then counting the number of groups. If students seem to be verbalizing additive thinking, ask questions to lead them toward multiplicative thinking.
     - *If I had 50 blue tiles, what would you do to determine their value?*
     - *If I had 175 tiles, what would you do to determine their value?*
   - *What symbols are used to represent multiplication?* Most commonly, students are familiar with the $\times$ symbol to represent multiplication. Remind students that as we use variables more frequently, we revise our notation so as not to confuse $\times$ as multiplication with x, a commonly used variable. Other ways to represent multiplication include a dot symbol such as $3 \bullet 5$, or parentheses, such as (3)(5) or 3(5).
3. Prompt students to complete the table, writing a multiplicative expression for each color in the Process column and the result of that expression in the Value of Tiles column.
   - *How could you determine the value of the entire collection of tiles?* Listen for students to verbalize a process involving addition of the values of each color to determine a total value.
   - *How could we use the completed Process column to write an expression representing the value of the entire collection of tiles?* Students should combine the expressions to represent their sum.
4. If students demonstrate continued need for support, repeat this process for an additional problem.
5. Prompt students to work independently or with a partner to repeat this process for Problems 2–3.
6. Prompt students to choose one of the three collections and use the expression generated for the selected collection to write an equation for Problem 4.
   - *What is the difference between the expressions we wrote for Problems 1–3 and the equation written for Problem 4?* Listen for students to recognize that the equation includes an equals sign. The expression for the selected collection is embedded in the equation. The equation clearly identifies what the value of the collection represents (t = total value).

Engage

1. Distribute **Isabelle's Ice Cream Shoppe** to each student.
2. Distribute a paper clip and **Isabelle's Ice Cream Shoppe Menu** to each pair of students.
3. Prompt students to complete the activity.
4. Upon completion, debrief with the following questions:
   - How did you represent the cost of multiple toppings?
   - How were all four expressions alike? How were they different? Listen for students to verbalize that all included a single cost for a container; all included

Facilitation Questions

- **What process would you use to determine the cost of the toppings?**
- **What process would you use to determine the cost of the specialty toppings?**
- **What process would you use to determine the cost of your ice cream creation?**

Listen for . . .

- *Student use of key terms: sum, product, expression*

$0.75 times the number of toppings; the process is the same each time. Some may include specialty toppings; the number of toppings is different each time.

5. Use this opportunity to review order of operations and two-variable expressions.
   - Are grouping symbols/parentheses necessary in this expression: $2.50 + (0.75 \bullet t)$? Why?
   - How could we write an expression representing the cost of a small cake cone with *t* toppings and *s* specialty toppings? *Listen for students to generate the expression* $2.50 + (0.75 \bullet t) + (1.25 \bullet s)$.
   - When is it necessary to use grouping symbols/parentheses?

Supports
Distribute **Isabelle's Ice Cream Shoppe*** to each student and **Isabelle's Ice Cream Shoppe Menu*** and **Spinners*** to each pair of students.

Explore

1. Distribute **Barry's Boardwalk Café** and small sticky notes to each student.
2. Prompt students to complete the activity.
3. Upon completion, debrief with the following questions:
   - Why are variables necessary in these situations?
   - What do the variables represent?
4. Prompt a few pairs of students to share their situations and corresponding equations with the class.
   - What items did you and your partner order?
   - What equation did you write to represent your orders?
   - How did the sticky notes help you in writing the equation?

Supports
Distribute **Barry's Boardwalk Café Hint Cards***, scissors, and tape or glue to each student. The cards are designed so that they may be attached to **Barry's Boardwalk Café** and used as fill-in-the-blank templates for Problems 3–5. Consider limiting the number of sticky notes for Problem 3 to 3–4 per student.

Facilitation Questions
- **How does the equation in Problem 2 compare to the equation in Problem 1?**
- **Are there any other items on the menu for the same price?**
- **What operation might you use to indicate that you are sharing or splitting the cost?**
- **What operation would you use to determine the amount of change received?**

Listen for . . .
- *Student use of key terms: variable, sum, product, equation*
- *Student use of multiplicative thinking to determine the cost of the menu items*
- *Student use of appropriate multiplication symbols and notation*
- *Evidence of student understanding of order of operations*

- *Student use of multiplicative thinking to determine the cost of the toppings and/or specialty toppings*
- *Student use of appropriate multiplication symbols and notation*
- *Evidence of student understanding of order of operations*

Explain

1. Prompt students to revisit the equations written during the completion of **Barry's Boardwalk Café.**
   - When was multiplication used? What other situations can you think of that use multiplication?
   - When did you include grouping symbols? Why?
   - Why are grouping symbols **not** included around the $2 \bullet 2.89$ part of the equation in Problem 2? Listen for references to order of operations.
   - When was subtraction used? What other situations can you think of that use subtraction?
   - When was division used? What other situations can you think of that use division?
   - What situations did you and your partner write?
   - How were you able to correctly represent your partner's situation with an equation?
2. Prompt students to revisit the expressions written during the Engage phase when completing **Isabelle's Ice Cream Shoppe**.
   - Did you include specialty toppings in your expression if you spun a zero? Why or why not? What might the expression look like if we did include the zero?
   - If we didn't know the number of toppings, how could we have represented the unknown value in our expressions? Listen for students to verbalize that a variable would be an appropriate way to represent the unknown value.
   - How could we write an expression representing the cost of a small cake cone with *t* toppings and no specialty toppings? Listen for students to generate the expression $2.50 + (0.75 \bullet t)$. Write the expression so it is visible to all students. Ask students to share with a partner their own explanation of the expression and how it connects to the situation.
3. Ask, "What is the difference between an equation and an expression?" *Listen for students to verbalize that an equation must have an equals sign.*
4. Distribute **Equations from Problem Situations Notes Page** to each student and prompt students to complete the vocabulary organizer.
5. Prompt students to use the word bank to complete the fill-in-the-blank section of the notes page.
   - What is the purpose of using a variable? Listen for representation of an unknown value.
   - When might more than one variable be needed? Listen for verbalization of a situation that includes more than one unknown value.
6. Upon completion, students should read, compare, and contrast their responses with a partner.
7. Prompt students to work with a partner to complete the last section of the notes page. Upon completion, prompt a few students to share their equations with the class.
   - What was known and what was unknown?
   - Which unknown value was represented with a variable?
   - What operations did you include? Why?

Elaborate

1. Distribute **Equation Dominoes**, scissors, tape or glue, and one piece of construction paper to each pair of students.
2. Prompt students to cut apart the dominoes cards and match each problem situation to the appropriate equation and attach the matched cards to the construction paper.
3. If a student appears to be struggling with **Equation Dominoes**, the student may

Intervention

1. Distribute **Equation Dominoes**, scissors, tape or glue, and one piece of construction paper to each pair of students.
2. Prompt each pair of students to cut apart the dominoes cards and find the card with the phone problem on the right side of the domino.
3. Work with this group of students to determine the processes needed to

join the teacher-led intervention group.

determine the total cost of the touch-screen phone.

- What does x represent?
- What does $98 represent?
- What is the relationship between the $98 amount and *x*? Listen for students to verbalize that $98 is half of *x*, the total cost of the touch-screen phone.
- Based on the relationship you just described, what would you need to do to determine the total cost? Listen for students to describe a need for multiplying by two.

4. Prompt students to find the dominoes with the following equations on the left side: $x = \frac{98}{2}$ and $x = 98 \bullet 2$.
   - Which of these two equations shows the relationship you described?
5. Prompt students to attach the matched dominoes to the construction paper and to locate the domino with the equation to match the Lindsey problem.
6. If students demonstrate continued need for support, repeat this process for an additional problem. If students appear ready to work with a partner or independently, allow the students to do so. Students may use the **Equations from Problem Situations Notes Page** as appropriate.

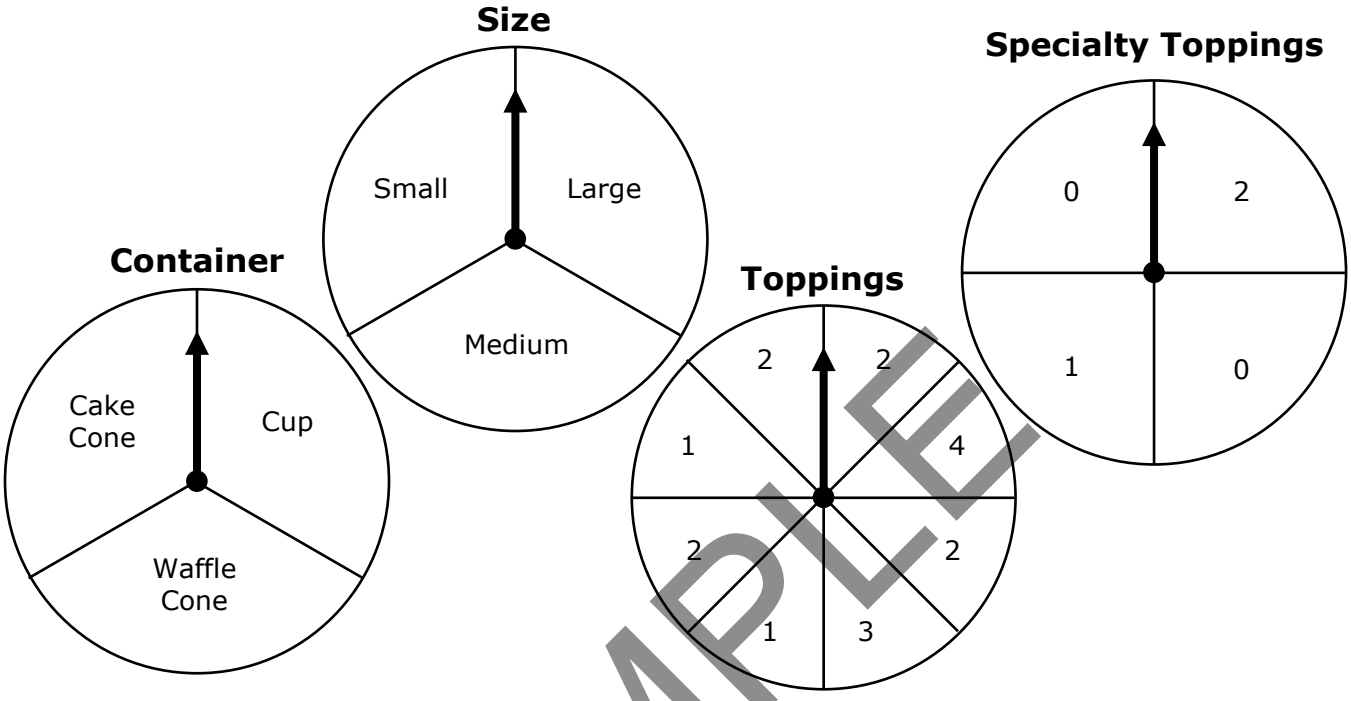
Evaluate

Question Number	Correct Answer	Reporting Category	TEKS	TEKS	Conceptual Error			Procedural Error			Guess
1	B	2	6.5	6.11A	C			A	D		
2	D	2	6.5	6.12A				A	B	C	
3	B	2	6.5	6.11A	A	C	D				
4	A	2	6.5	6.12A	B	C	D				

Name: _____ Equations from Problem Situations

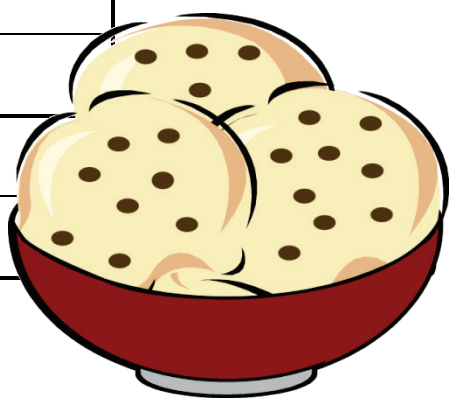
Isabelle's Ice Cream Shoppe

- Use your pencil and a paper clip to spin each spinner one time to determine your order.
- Record the results of each spin in the table below.
- Use **Isabelle's Ice Cream Shoppe Menu** to write an expression representing the cost of each order.



Spinner Results

	Container	Size	Number of Toppings	Number of Specialty Toppings
First Order				
	Expression:			
Second Order				
	Expression:			
Third Order				
	Expression:			
Fourth Order				
	Expression:			



Cut along the bold dotted lines. Two menus are provided.

Isabelle's Ice Cream Shoppe Menu

Ice Cream

	Small	Medium	Large
Cup	*$2*	*$3*	*$4*
Cake Cone	*$2.50*	*$3.50*	*$4.50*
Waffle Cone	*$3*	*$4*	*$5*

- Sweet Vanilla Cream
- Creamy Chocolate Dream
- Sinful Strawberry
- Blissful Blueberry
- Ridiculous Raspberry

Toppings
$0.75 each

- Chocolate Chips
- Rainbow Sprinkles
- Chocolate Sprinkles
- Chopped Cherries
- Chopped Pecans
- Gummy Candy
- Toasted Coconut
- Crushed Pineapple
- Mini Marshmallows

Specialty Toppings
$1.25 each

- Apple Pie Filling
- Cherry Pie Filling
- Yogurt Covered Pretzels
- Crushed Pralines
- Brownie Chunks
- Marshmallow Crème
- Honey Almond Clusters
- Macadamia Nuts
- Candy Bar Bits

Isabelle's Ice Cream Shoppe Menu

Ice Cream

	Small	Medium	Large
Cup	*$2*	*$3*	*$4*
Cake Cone	*$2.50*	*$3.50*	*$4.50*
Waffle Cone	*$3*	*$4*	*$5*

- Sweet Vanilla Cream
- Creamy Chocolate Dream
- Sinful Strawberry
- Blissful Blueberry
- Ridiculous Raspberry

Toppings
$0.75 each

- Chocolate Chips
- Rainbow Sprinkles
- Chocolate Sprinkles
- Chopped Cherries
- Chopped Pecans
- Gummy Candy
- Toasted Coconut
- Crushed Pineapple
- Mini Marshmallows

Specialty Toppings
$1.25 each

- Apple Pie Filling
- Cherry Pie Filling
- Yogurt Covered Pretzels
- Crushed Pralines
- Brownie Chunks
- Marshmallow Crème
- Honey Almond Clusters
- Macadamia Nuts
- Candy Bar Bits

Name: _____ Equations from Problem Situations

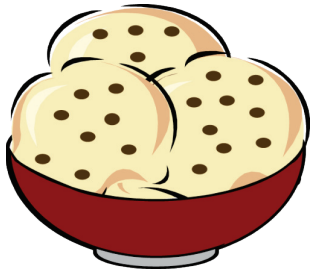
Isabelle's Ice Cream Shoppe*

- Use your pencil, paper clip, and **Spinners*** to spin each spinner one time to determine your order.
- Record the results of each spin in the table below.
- Use **Isabelle's Ice Cream Shoppe Menu*** to write an expression representing the cost of each order.

First Order	Type, Size, or Amount	Unit Price (price per one)	Total Price (process)
Container			
Size			
Number of Toppings			
Number of Specialty Toppings			
Expression:			

Second Order	Type, Size, or Amount	Unit Price (price per one)	Total Price (process)
Container			
Size			
Number of Toppings			
Number of Specialty Toppings			
Expression:			

Third Order	Type, Size, or Amount	Unit Price (price per one)	Total Price (process)
Container			
Size			
Number of Toppings			
Number of Specialty Toppings			
Expression:			



Cut along the bold dotted lines. Two menus are provided.

Isabelle's Ice Cream Shoppe Menu*

Ice Cream	Small	Medium	Large
Cup	*$2*	*$3*	*$4*
Cake Cone	*$2.50*	*$3.50*	*$4.50*
Waffle Cone	*$3*	*$4*	*$5*

Toppings: $0.75 each

Specialty Toppings: $1.25 each

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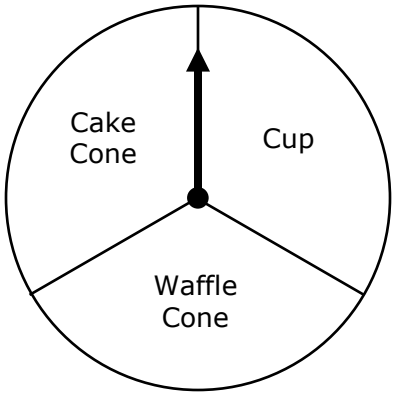
Spinners*

Container



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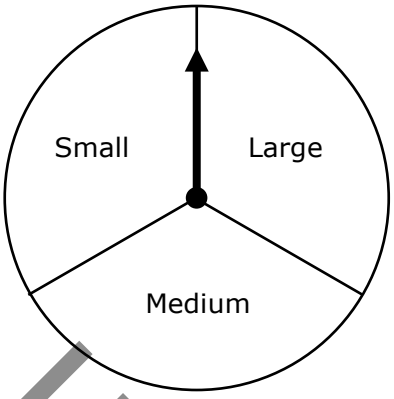
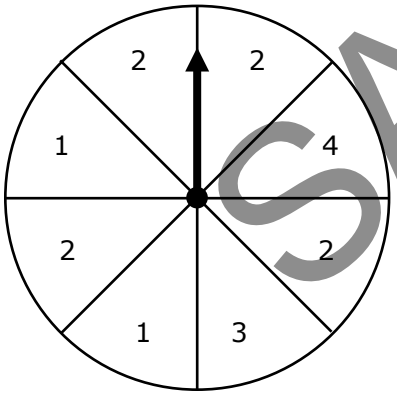
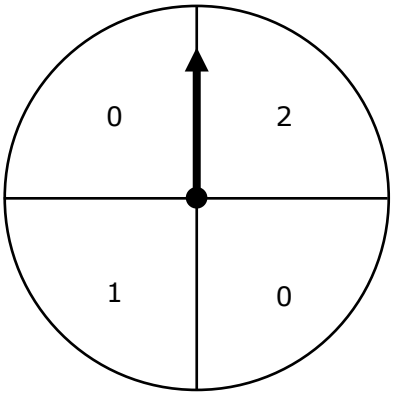


Toppings



Specialty Toppings



Barry's Boardwalk Café (Answer Key)

The menu for Barry's Boardwalk Café is shown below. Use the prices listed on the menu to answer the questions below.

Barry's Boardwalk Café

ENTRÉES		SIDES	
8-inch Personal Pizza		French Fries	$1.49
Cheese	$3.99	Onion Rings	$2.29
Pepperoni	$4.99	Side Salad	$2.89
Hamburger	$2.49	Fruit Cup	$1.79
Cheeseburger	$2.99		
Hot Dog	$1.99	DRINKS	
Chicken Strips	$4.49	S	M	L
		$0.99	$1.89	$2.39

1. Write an equation representing the total cost, c, of a pepperoni pizza, side salad, and large drink.

$$c = \mathbf{4.99 + 2.89 + 2.39}$$

2. What might the equation shown below represent?

$$c = 4.99 + 2 \bullet 2.89 + 2.39$$

The equation could represent the total cost of a pepperoni pizza, 2 side salads, and a large drink.

3. What would you order if you were buying lunch from Barry's Boardwalk Café?
   a. Write the items you want to order and the cost of each on a small sticky note. Use a different sticky note for each item you want to order.
   b. Combine your sticky notes with your partner's sticky notes.
   c. Group the sticky notes so that items with the same cost are together.
   d. Use the grouped sticky notes to write an expression representing the total cost of your combined order.
      Answers may vary.
      4.99 + 2.99 + 2.29 + 1.49 + 2 · 2.39
   e. Write an equation showing how much each of you would spend, s, if you evenly split the cost of the combined order.
      Answers may vary.
      s = (4.99 + 2.99 + 2.29 + 1.49 + 2 · 2.39) ÷ 2
   f. Write an equation showing how much change you would receive, c, if you paid for your half of the order, s, with a $50 bill.
      c = 50 – s
      or
      c = 50 – [(4.99 + 2.99 + 2.99 +1.49 + 2 · 2.39) ÷ 2].

4. Write an equation representing the amount of change received, *r*, when Natalie bought two hamburgers, a fruit cup, and an order of french fries and paid with a $20 bill.

   ***r* = 20 – (2 · 2.49 + 1.79 + 1.49)**

5. Brianna and Ashley shared an order of chicken strips and an order of onion rings. They each also purchased a small drink. If the girls shared the cost evenly, write an equation showing each person's share, *s*, of the bill.

   ***s* = (4.49 + 2.29 + 2 · 0.99) ÷ 2**

6. Write your own story problem that could be represented in an equation based on the menu. Trade papers with your partner and write the equations for each other.

   MY SITUATION:
   Answers may vary.

   EQUATION: _____

Barry's Boardwalk Café Hint Cards*

Cut along the bold dotted lines. Two sets are provided.

#3e

$s = (\_\_\_\_\_) \div \_\_\_\_\_$

#3f

$c = 50 - (\_\_\_\_\_)$

#4

$r = \square - (\square \cdot \square + \square + \square)$

#5

$s = (\square + \square + \square \square \square) \square \square$

#3e

$s = (\_\_\_\_\_) \div \_\_\_\_\_$

#3f

$c = 50 - (\_\_\_\_\_)$

#4

$r = \square - (\square \cdot \square + \square + \square)$

#5

$s = (\square + \square + \square \square \square) \square \square$