OER Secondary Mathematics
EDITION 1

Module 1

150-Day Topic Pacing Guides

MODULE 1, TOPIC 1 PACING GUIDE

150-Day Pacing

1 Thinking Proportionally

TOPIC 1: Circles and Ratios

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 7.1A, 7.1B, 7.1C, 7.1D, 7.1E, 7.1F, 7.1G

ELPS: 1.C, 1.E, 1.H, 2.D, 2.E, 2.I, 3.E, 4.E, 4.F, 4.G, 4.H, 5.B

Topic Pacing: 10 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
	Introduction to the Problem-Solving Model and Learning Resources	Students reflect on learning a new skill and the variety of ways they learn. The problem-solving model, TEKS mathematical process standards, and the Academic Glossary help students complete a problem-solving activity. Students reflect on and summarize the problem-solving process. Since the intent of this lesson is to introduce the problem-solving model and review the TEKS mathematical process standards, the focus is on process not content. Students will need access to the Academic Glossary, Problem-Solving Model Graphic Organizer, Problem-Solving Questions to Ask, and TEKs mathematical process standards which are located in the Course Guide. These materials should always be available to students throughout the course. **Materials Needed:** (located in the Course Guide) Academic Glossary, Problem-Solving Model Graphic Organizer, Problem-Solving Model Questions to Ask, TEKS Mathematical Process Standards	7.6D	**0**
1	Exploring the Ratio of Circle Circumference to Diameter	Students explore the relationship between the distance around a circle and the distance across a circle. They learn the terms *circumference*, *diameter*, and *radius*. Students use hands-on tools to measure the distances and compare the ratio of the circumference to the length of the diameter. They then use a compass to create their own circles and realize that for every circle the ratio of circumference to diameter is pi. Students practice solving for the diameter or the circumference in problems. **Materials Needed:** Centimeter Rulers, String, Compasses, Calculators with π Key	7.5B 7.8C **7.9B**	2
2	Area of Circles	Students explore the area of a circle in terms of its circumference. They cut a circle into sectors and fit the sectors together to form a parallelogram. The parallelogram helps students see the area of a circle in relation to its circumference: $A = \left(\frac{1}{2}C\right)r$. Students derive the area for a circle and then solve problems using the formulas for the circumference and area of circles. **Materials Needed:** Scissors, Calculators with a π Key, Problem-Solving Model Graphic Organizer	7.4B 7.8C **7.9B**	2

*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

MODULE 1, TOPIC 1 PACING GUIDE

150-Day Pacing

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
3	**Solving Area and Circumference Problems**	Students use the area of a circle formula and the circumference formula to solve for unknown measurements in problem situations. Some of the situations are problems composed of more than one figure, and some of the situations include shaded and non-shaded regions. Students then determine whether to use the circumference or area formula to solve problems involving circles. **Materials Needed:** Problem-Solving Model Graphic Organizer	**7.9B** **7.9C**	2
End of Topic Assessment				1
Learning Individually with Skills Practice *Schedule these days strategically throughout the topic to support student learning.*				3

*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

MODULE 1, TOPIC 1 PACING GUIDE

150-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

✪ *This activity highlights a key term or concept that is essential to the objectives of the lesson.*

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: 7.5B, 7.8C, **7.9B**			TEKS: 7.4B, 7.8C, **7.9B**	
LESSON 1 Exploring the Ratio of Circle Circumference to Diameter GETTING STARTED ✪ ACTIVITY 1 ✪ ACTIVITY 2 ✪	**LESSON 1** continued ACTIVITY 3 ✪ TALK THE TALK ✪	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 2** Area of Circles GETTING STARTED ✪ ACTIVITY 1 ✪	**LESSON 2** continued ACTIVITY 2 ✪ ACTIVITY 3 ✪ TALK THE TALK
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
	TEKS: **7.9B, 7.9C**			
LEARNING INDIVIDUALLY Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 3** Solving Area and Circumference Problems GETTING STARTED ✪ ACTIVITY 1 ✪ ACTIVITY 2 ✪	**LESSON 3** continued ACTIVITY 3 ✪ TALK THE TALK	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**END OF TOPIC ASSESSMENT**

*Bold TEKS = Readiness Standard

How can you incorporate Skills Practice with students?

There are three Learning Individually days scheduled within this topic. The placement of these days within the topic is flexible. The intent is to distribute spaced and interleaved practice throughout a topic and throughout the year. It is not necessary for students to complete all Skills Practice for the topic and different students may complete different problem sets. You should use data to strategically assign problem sets aligned to individual student needs. You should analyze student responses from the following embedded assessment opportunities to help assess individual needs: Essential Questions, Talk the Talks, Student Self-Reflections, and End of Topic Assessments. For students who are building their proficiency, you can assign problem sets to target specific skills. For students who have demonstrated proficiency, there are extension problems of varied levels of challenge.

How can you identify whether students are ready for new learning?

The Prepare section of the Lesson Assignments and the Spaced Practice set of Skills Practice can serve as diagnostic tools. Depending on available time, you can assign the Prepare section of the Lesson Assignments as homework or as a warm-up to identify students' prior knowledge for the upcoming lessons activities. You can also use the Spaced Practice sets of Skills Practice to analyze individual students' level of proficiency on standards from previous topics.

MODULE 1, TOPIC 2 PACING GUIDE

150-Day Pacing

1 Thinking Proportionally

TOPIC 2: Fractional Rates

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 7.1A, 7.1B, 7.1D, 7.1E, 7.1F, 7.1G

ELPS: 1.A, 1.D, 2.C, 3.F, 3.I, 4.B, 4.K, 5.C, 5.G

Topic Pacing: 8 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
1	**Unit Rate Representations**	In this lesson, students recall the concepts of ratio and unit rate and how to represent these mathematical objects using tables and graphs. Students use the unit rate as a measure of a qualitative characteristic: the strength of the lemon-lime taste of a punch recipe. They represent this measure in tables and graphs and with fractions in the numerator. **Materials Needed:** Problem-Solving Model Graphic Organizer	7.4B	1
2	**Solving Problems with Ratios of Fractions**	In this lesson, students determine ratios and write rates, including complex ratios and rates. Students will write proportions and use rates to determine miles per hour. They use common conversions to convert between the customary and metric measurement systems using unit rates and proportions. They will scale up and scale down to determine unknown quantities. **Materials Needed:** Problem-Solving Model Graphic Organizer	7.4B 7.4E	2
3	**Solving Proportions Using Means and Extremes**	Students solve several proportions embedded in real-world contexts. The term *variable* is introduced to represent an unknown quantity. Several proportions are solved using one of three methods: the scaling method, the unit rate method, and the means and extremes method. Students learn to isolate a variable in a proportion by using inverse operations. **Materials Needed:** Problem-Solving Model Graphic Organizer	**7.4D**	2
End of Topic Assessment				1
Learning Individually with Skills Practice *Schedule these days strategically throughout the topic to support student learning.*				2

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MODULE 1, TOPIC 2 PACING GUIDE

150-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

✪ *This activity highlights a key term or concept that is essential to the learning goals of the lesson.*

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: 7.4B	TEKS: 7.4B, 7.4E			TEKS: **7.4D**
LESSON 1 Unit Rate Representations **GETTING STARTED** **ACTIVITY 1** ✪ **TALK THE TALK**	**LESSON 2** Solving Problems with Ratios of Fractions **GETTING STARTED** ✪ **ACTIVITY 1** **ACTIVITY 2** ✪	**LESSON 2** continued **ACTIVITY 3** ✪ **ACTIVITY 4** ✪ **TALK THE TALK**	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 3** Tagging Sharks **GETTING STARTED** ✪ **ACTIVITY 1** ✪
Day 6	**Day 7**	**Day 8**		
LESSON 3 continued **ACTIVITY 2** ✪ **ACTIVITY 3** ✪ **TALK THE TALK**	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	**END OF TOPIC ASSESSMENT**		

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There are two Learning Individually days scheduled within this topic. The placement of these days within the topic is flexible. The intent is to distribute spaced and interleaved practice throughout a topic and throughout the year. It is not necessary for students to complete all Skills Practice for the topic and different students may complete different problem sets. You should use data to strategically assign problem sets aligned to individual student needs. You should analyze student responses from the following embedded assessment opportunities to help assess individual needs: Essential Questions, Talk the Talks, Student Self-Reflections, and End of Topic Assessments. For students who are building their proficiency, you can assign problem sets to target specific skills. For students who have demonstrated proficiency, there are extension problems of varied levels of challenge.

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MODULE 1, TOPIC 3 PACING GUIDE

150-Day Pacing

1 Thinking Proportionally

TOPIC 3: Proportionality

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 7.1A, 7.1B, 7.1C, 7.1D, 7.1E, 7.1G

ELPS: 1.A, 1.B, 1.F, 2.A, 2.G, 2.I, 3.C, 3.D, 3.G, 4.G, 4.I, 5.E, 5.F

Topic Pacing: 14 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
1	**Proportional Relationships**	Students explore tables and graphs that illustrate proportional relationships. First, students review equivalent ratios and that the graphs of equivalent ratios form straight lines that pass through the origin. They are then given three sets of scenarios, equations, and graphs to match, using any strategy. Each group illustrates a different type of relationship: linear and proportional, linear and non-proportional, or non-linear. Students classify the groups of representations as linear and non-linear and use tables of values to classify the linear relationships as proportional or as non-proportional. They summarize the relationships between the terms *linear relationship*, *proportional relationship*, and *equivalent ratios*. Students are then given three new situations to analyze. They create tables of values and graphs and determine if a proportional relationship exists between two quantities. **Materials Needed:** Scissors, Tape or Glue Sticks	**7.4A** 7.4C	3
2	**Constant of Proportionality**	Students learn how to use equations to represent proportional relationships. Students write constants of proportionality based on the direction of the proportional relationship. They then use a scenario to set up a proportion and write two different equations for the scenario, depending on the direction of the proportional relationship. Students identify and interpret the constant of proportionality in the context of a scenario and solve problems using the equations that represent the proportional relationship. Next, students consider an additional situation in which the constant of proportionality and the corresponding equation depend on the question asked. They use the constants of proportionality to write equations, express the equations in terms of proportional relationships, and generalize the equation for proportional relationships. Students then practice using the constant of proportionality to solve for unknown quantities. **Materials Needed:** Problem-Solving Model Graphic Organizer	**7.4A** 7.4C **7.4D**	**2**

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MODULE 1, TOPIC 3 PACING GUIDE

150-Day Pacing

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
3	**Identifying the Constant of Proportionality in Graphs**	In this lesson, students analyze real-world and mathematical situations, both proportional and non-proportional, represented on graphs and then identify the constant of proportionality when appropriate. Students write equations to represent the situations from the graphs. Throughout the lesson, students interpret the meaning of points on graphs in terms of a proportional relationship, including the meaning of (1, *y*) and (0, 0). **Materials Needed:** None	**7.4A** 7.4C **7.4D**	2
4	**Constant of Proportionality in Multiple Representations**	Students use proportional relationships to create equivalent multiple representations, such as diagrams, equations, tables, and graphs of the situation. A proportional relationship may initially be expressed using only words, a table of values, an equation, or a graph. For example, given only the information that "*q* varies proportionally with *p*," students will write an equation, complete a table of values, determine the constant of proportionality, construct a graph from the table of values, and create a scenario to fit the graph. **Materials Needed:** Problem-Solving Model Graphic Organizer	**7.4A** 7.4C	**2**
End of Topic Assessment				1
Learning Individually with Skills Practice *Schedule these days strategically throughout the topic to support student learning.*				4

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MODULE 1, TOPIC 3 PACING GUIDE

150-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

✪ *This activity highlights a key term or concept that is essential to the learning goals of the lesson.*

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: **7.4A**, 7.4C **LESSON 1** Proportional Relationships **GETTING STARTED** ✪ **ACTIVITY 1** ✪	**LESSON 1** continued **ACTIVITY 2** ✪ **ACTIVITY 3** ✪	**LESSON 1** continued **ACTIVITY 4** ✪ **TALK THE TALK** ✪	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	TEKS: **7.4A**, 7.4C, **7.4D** **LESSON 2** Constant of Proportionality **GETTING STARTED** **<essential>** **ACTIVITY 1** ✪
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
LESSON 2 continued **ACTIVITY 2** ✪ **ACTIVITY 3** **ACTIVITY 4** ✪ **TALK THE TALK**	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	TEKS: **7.4A**, 7.4C, **7.4D** **LESSON 3** Identifying the Constant of Proportionality in Graphs **GETTING STARTED** ✪ **ACTIVITY 1** ✪	**LESSON 3** continued **ACTIVITY 2** ✪ **ACTIVITY 3** ✪ **TALK THE TALK** ✪	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*
Day 11	**Day 12**	**Day 13**	**Day 14**	
TEKS: **7.4A**, 7.4C **LESSON 4** Constant of Proportionality in Multiple Representations **GETTING STARTED** **ACTIVITY 1** ✪ **ACTIVITY 2** ✪	**LESSON 4** continued **ACTIVITY 3** ✪ **ACTIVITY 4** ✪ **ACTIVITY 5** ✪ **TALK THE TALK** ✪	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	**END OF TOPIC ASSESSMENT**	

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OER Secondary Mathematics
EDITION 1

Module 2

150-Day Topic Pacing Guides

MODULE 2, TOPIC 1 PACING GUIDE

150-Day Pacing

2 Applying Proportionality

TOPIC 1: Proportional Relationships

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 7.1A, 7.1B, 7.1C, 7.1D, 7.1E, 7.1F, 7.1G

ELPS: 1.A, 1.B, 1.E, 2.D, 2.F, 2.G, 2.I, 3.A, 3.E, 3.F, 3.J, 4.C, 4.F, 4.J, 5.B, 5.D, 5.G

Topic Pacing: 17 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
1	**Introducing Proportions to Solve Percent Problems**	Students review using models to solve percent problems. They analyze strategies for calculating the unknown value in a percent problem. Students then set up $\frac{\text{part of a quantity}}{\text{whole of quantity}} = \frac{\text{percent part}}{\text{percent whole}}$ proportions to solve markdown and markup percent problems. They analyze strategies that require one or more steps to answer the question in a problem. Students solve percent problems that result from a direct variation relationship between the two quantities. They identify the constant of proportionality, write an equation to represent the situation, and solve for unknown quantities. **Materials Needed:** Problem-Solving Model Graphic Organizer	7.4C **7.4D** 7.13F	2
2	**Calculating Tips, Commission, and Simple Interest**	Students solve proportions and percent equations. Tipping and commission are used as the contexts throughout the activities. Examples of using a proportion and using a percent equation to determine amounts of tips are given. Students explain how the variable was isolated in each solution process. They are given percents and solve for unknown tip amounts using both a proportion and a percent equation. Students are given examples using proportions and percent equations to determine unknown tip percents and explain how the variable was isolated in these solutions. They then solve for an unknown total bill when they know the tip percent and the desired tip amount. Students connect percents in the context of commissions to direct variation and proportionality. A 10% commission rate is shown in a partially complete table of values. Students complete the table, graph the relationship between the quantities, write an equation to represent the situation, and solve for unknown quantities. Students compute commissions, commission rates, and total sales. **Materials Needed:** Problem-Solving Model Graphic Organizer	7.4C **7.4D** 7.13E	3

*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

MODULE 2, TOPIC 1 PACING GUIDE

150-Day Pacing

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
3	**Sales Tax, Income Tax, and Fees**	This lesson focuses on sales tax and income tax. Students use their knowledge and skills using percents to make sense of these financial concepts. Students are introduced to sales tax. They analyze three representations (table, graph, and equation) that model sales tax charges for three states. Students then solve problems related to income tax. In the final activity, students identify the percent relationship between two amounts as a proportional relationship with a unit rate and constant of proportionality. **Materials Needed:** None	7.4C **7.4D** 7.13A	2
4	**Percent Increase and Percent Decrease**	Definitions are given for *percent increase* and *percent decrease*. Students will compute percent increase and percent decrease in several situations. In the last activity, students apply percent increase and decrease to solving problems involving geometric measurement. **Materials Needed:** Problem-Solving Model Graphic Organizer	**7.4D**	2
5	**Scale and Scale Drawings**	Students use scale models to calculate measurements and enlarge and reduce the size of models. They encounter real-world situations involving maps and blueprints. In each of these situations, they will enlarge or reduce the size of objects and calculate relevant measurements. Students explore scale drawings. The scale of a drawing is drawing length : actual length and the scale of a map is map distance : actual distance. Students analyze a map of the United States and approximate distances between cities. **Materials Needed:** Centimeter Rulers	7.5A **7.5C**	**2**
End of Topic Assessment				1
Learning Individually with Skills Practice *Schedule these days strategically throughout the topic to support student learning.*				5

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MODULE 2, TOPIC 1 PACING GUIDE

150-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

✪ *This activity highlights a key term or concept that is essential to the learning goals of the lesson.*

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: 7.4C, **7.4D**, 7.13F			TEKS: 7.4C, **7.4D**, 7.13E	
LESSON 1 Introducing Proportions to Solve Percent Problems GETTING STARTED ACTIVITY 1 ACTIVITY 2 ✪	**LESSON 1** continued ACTIVITY 3 ✪ ACTIVITY 4 ✪ TALK THE TALK ✪	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 2** Calculating Tips, Commissions, and Simple Interest GETTING STARTED ✪ ACTIVITY 1 ✪ ACTIVITY 2 ✪	**LESSON 2** continued ACTIVITY 3 ✪ ACTIVITY 4 ✪ ACTIVITY 5 ✪
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
		TEKS: 7.4C, **7.4D**, 7.13A		
LESSON 2 continued ACTIVITY 6 ✪ TALK THE TALK	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 3** Sales Tax, Income Tax, and Fees GETTING STARTED ✪ ACTIVITY 1 ✪	**LESSON 3** continued ACTIVITY 2 ✪ ACTIVITY 3 ✪ TALK THE TALK ✪	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*
Day 11	**Day 12**	**Day 13**	**Day 14**	**Day 15**
TEKS: **7.4D**			TEKS: 7.5A, **7.5C**	
LESSON 4 Percent Increase and Percent Decrease GETTING STARTED ACTIVITY 1 ✪ ACTIVITY 2 ✪	**LESSON 4** continued ACTIVITY 3 ✪ TALK THE TALK ✪	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 5** Scale and Scale Drawings GETTING STARTED ✪ ACTIVITY 1 ✪	**LESSON 5** continued ACTIVITY 2 ✪ ACTIVITY 3 ACTIVITY 4 TALK THE TALK ✪
Day 16	**Day 17**			
LEARNING INDIVIDUALLY Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**END OF TOPIC ASSESSMENT**			

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How can you incorporate Skills Practice with students?

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MODULE 2, TOPIC 2 PACING GUIDE

150-Day Pacing

2 Applying Proportionality

TOPIC 2: Financial Literacy: Interest and Budgets

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 7.1A, 7.1B, 7.1C, 7.1D, 7.1E, 7.1F, 7.1G

ELPS: 1.D, 2.C, 2.H, 3.B, 3.D, 4.A, 4.E, 5.E, 5.F

Topic Pacing: 8 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
1	**Simple and Compound Interest**	This lesson focuses on comparing and contrasting simple interest and compound interest. Students are introduced to the mathematical terms *principal*, *simple interest*, and *compound interest*. They analyze a table comparing an investment using both simple and compound interest over 30 years. They learn that simple interest calculations produce a constant rate of change and a linear graph, while compound interest calculations produce an increasing rate of change and a graph that curves upward. Students are presented with the simple interest formula, $I = Prt$, where I represents the interest, P represents the principal, r represents the interest rate, and t represents the time in years. They use the formula primarily to calculate the amount of interest earned, although in one, case students calculate the rate of interest. Students calculate compound interest using two different methods. They complete some table entries using the simple interest formula on the growing principal. Next, students use the compound interest formula, $A = P(1 + r)^t$, where A represents the final balance, P represents the original principal amount invested, r represents the annual rate, and t represents the time in years. Students use the formula primarily to calculate the new balance including interest, although in one case, they calculate the amount of time it will take to double the principal. Throughout the lesson, students are asked to explain the differences between simple interest and compound interest. **Materials Needed:** Calculators, Problem-Solving Model Graphic Organizer	7.13E	2
2	**Net Worth Statements**	Students are introduced to the financial terms *net worth*, *assets*, and *liabilities*. They categorize a list of items as being assets or liabilities and discuss ambiguous cases. Students are introduced to another asset, the retirement investment account. Common examples of retirement accounts, *401(k)* and *403(b) plans*, are explained. Students then organize a more complex list of assets and liabilities with dollar amounts to complete a net worth statement. **Materials Needed:** None	7.13C	1

*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

MODULE 2, TOPIC 2 PACING GUIDE

150-Day Pacing

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
3	**Personal Budgets**	Students are introduced to the concept of a personal budget. They are provided a budget for a family represented as a circle graph along with the family's income. They calculate the amount of money spent for each category after estimating the percents from the circle graph. Next, students are provided with the dollar values for a family's expenses and they must determine the percents and create a circle graph for the family budget. A circle template is provided with sectors representing 5% to aid in making an accurate circle graph rather than have students use a protractor. Throughout the lesson, students are asked to determine the gross income needed to maintain the family budget represented by the circle graph. To further bring the concept of budget to reality, students use a family budget estimator to determine the minimum household budget needed for a family to meet its basic needs in their region of the state. They are then asked to figure out the hourly wage necessary to provide for the family. **Materials Needed:** Devices with Internet Access, Calculators, Problem-Solving Model Graphic Organizer	**7.4D** 7.13B 7.13D	2
End of Topic Assessment				1
Learning Individually with Skills Practice *Schedule these days strategically throughout the topic to support student learning.*				2

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MODULE 2, TOPIC 2 PACING GUIDE

150-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

✪ *This activity highlights a key term or concept that is essential to the learning goals of the lesson.*

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: 7.13E			TEKS: 7.13C	TEKS: **7.4D**, 7.13B, 7.13D
LESSON 1 Simple and Compound Interest **GETTING STARTED** ✪ **ACTIVITY 1** ✪ **ACTIVITY 2** ✪	**LESSON 1** continued **ACTIVITY 3** ✪ **TALK THE TALK** ✪	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 2** Net Worth Statements **GETTING STARTED** **ACTIVITY 1** ✪ **ACTIVITY 2** ✪ **TALK THE TALK**	**LESSON 3** Personal Budgets **GETTING STARTED** ✪ **ACTIVITY 1** ✪
Day 6	**Day 7**	**Day 8**		
LESSON 3 continued **ACTIVITY 2** ✪ **ACTIVITY 3** ✪ **TALK THE TALK**	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	**END OF TOPIC ASSESSMENT**		

*Bold TEKS = Readiness Standard

How can you incorporate Skills Practice with students?

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How can you identify whether students are ready for new learning?

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Secondary Mathematics
EDITION 1

Module 3

150-Day Topic Pacing Guides

MODULE 3, TOPIC 1 PACING GUIDE

150-Day Pacing

3 Reasoning Algebraically

TOPIC 1: Operating with Rational Numbers

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 7.1A, 7.1B, 7.1C, 7.1D, 7.1E, 7.1F, 7.1G

ELPS: 1.D, 1.E, 1.F, 2.D, 2.G, 2.H, 3.A, 3.B, 3.D, 3.G, 4.A, 4.C, 4.K, 5.E

Topic Pacing: 11 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
1	Adding and Subtracting Rational Numbers	Students apply their knowledge of adding and subtracting positive and negative integers to a set of rational numbers. **Materials Needed:** Problem-Solving Model Graphic Organizer	7.2A 7.3A **7.3B**	**1**
2	Quotients of Integers	Students divide integers. They learn that the quotients of any two integers are rational numbers. Students express rational numbers written as negative fractions in equivalent forms by changing the negative sign's position. Finally, they perform operations with positive and negative rational numbers to solve real-world problems. **Materials Needed:** Problem-Solving Model Graphic Organizer	7.3A **7.3B**	2
3	Simplifying Expressions to Solve Problems	Students solve real-world problems involving simplifying numeric expressions using the four operations and signed rational numbers. Students also evaluate expressions with signed rational numbers for a variable and use the Order of Operations to simplify. **Materials Needed:** Problem-Solving Model Graphic Organizer	7.3A **7.3B** **7.4D**	**1**
4	Using Number Properties to Interpret Expressions with Signed Numbers	Students solve mathematical problems involving simplifying numeric expressions using number properties and signed rational numbers. Students will also use what they know about the opposites of numbers to derive a method for distributing and factoring with -1 and to convert subtraction to the addition of the opposite of a number. **Materials Needed:** None	7.3A **7.3B**	2

*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

MODULE 3, TOPIC 1 PACING GUIDE

150-Day Pacing

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
		Students review variables, algebraic expressions, and how to evaluate algebraic expressions. They plot a variety of variable expressions with x on a number line, first under the condition that $x > 0$ and then under the condition that $x < 0$, focusing on the distance of x from 0 to determine the placement of the expressions. Students substitute values for the variable to validate the correct placement of the expressions on the number lines. They then substitute values for unknowns in two related contexts. Finally, students formally review evaluating an algebraic expression and practice this skill, with and without tables. **Materials Needed:** Index Cards, Tape	7.3A **7.3B**	**0**
5	**Evaluating Algebraic Expressions**			
6	**Rewriting Expressions Using the Distributive Property**	Students rewrite linear expressions using the distributive property. First, they plot related algebraic expressions on a number line by reasoning about magnitude. Students realize that rewriting the expressions reveals structural similarities in the expressions, which allows them to more accurately plot the expressions. They then review the distributive property. Students expand algebraic expressions using both the area model and symbolic representations, focusing on the symbolic. They then reverse the process to factor linear expressions. Students factor expressions by factoring out the greatest common factor and by factoring out the coefficient of the linear variable. Finally, students rewrite expressions in multiple ways by factoring the same value from each term of the expression. **Materials Needed:** None	7.3A **7.3B**	**0**
End of Topic Assessment				1
Learning Individually with Skills Practice *Schedule these days strategically throughout the topic to support student learning.*				**4**

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MODULE 3, TOPIC 1 PACING GUIDE

150-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

✪ *This activity highlights a key term or concept that is essential to the learning goals of the lesson.*

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS; 7.2A, 7.3A, **7.3B**		TEKS: 7.3A, **7.3B**		
LESSON 1 Adding and Subtracting Rational Numbers **GETTING STARTED** ✪ **ACTIVITY 1** ✪ **ACTIVITY 2** ✪ **ACTIVITY 3** **TALK THE TALK**	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 2** Quotients of Integers **GETTING STARTED** ✪ **ACTIVITY 1** ✪	**LESSON 2** continued **ACTIVITY 2** ✪ **TALK THE TALK** ✪	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
TEKS: 7.3A, **7.3B, 7.4D**		TEKS: 7.3A, **7.3B**		
LESSON 3 Simplifying Expressions to Solve Problems **GETTING STARTED** **ACTIVITY 1** ✪ **ACTIVITY 2** **ACTIVITY 3** ✪ **TALK THE TALK** ✪	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 4** Using Number Properties to Interpret Expressions with Signed Numbers **GETTING STARTED** **ACTIVITY 1** ✪	**LESSON 4** continued **ACTIVITY 2** ✪ **ACTIVITY 3** **TALK THE TALK** ✪	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*
Day 11				
END OF TOPIC ASSESSMENT				

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MODULE 3, TOPIC 2 PACING GUIDE

150-Day Pacing

3 Reasoning Algebraically

TOPIC 2: Two-Step Equations and Inequalities

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 7.1A, 7.1B, 7.1C, 7.1D, 7.1E, 7.1F, 7.1G

ELPS: 1.C, 1.D, 1.E, 1.G, 2.C, 2.H, 2.I, 3.C, 3.F, 4.A, 4.B, 4.H, 5.C, 5.D, 5.F

Topic Pacing: 13 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
1	Modeling Equations as Equal Expressions	This lesson models real-world situations using picture algebra and defines equations as representing equal expressions. Students are asked to use models to solve for unknown quantities and write expressions and equations. Students model contextual situations using bar models. The models serve two purposes: they assist students in solving the problem, and they provide scaffolding for writing expressions and equations in the remaining questions. **Materials Needed:** None	7.10A **7.11A**	2
2	Solving Equations Using Algebra Tiles	Students use pan balances to develop an understanding of equality. They conclude they can achieve balance by subtracting the same quantity from both sides, adding the same quantity to both sides, multiplying the same quantity to both sides, or dividing the same quantity into both sides. Students use algebra tiles and apply these balance strategies to two-step numeric equations containing a single variable. Students determine whether values are solutions to equations and graph solutions to equations on number lines. **Materials Needed:** Algebra Tiles (printable version at the end of the lesson), Scissors	7.10B **7.11A** 7.11B	2
3	Solving Equations on a Double Number Line	In this lesson, students model contextual and mathematical situations using double number lines, extending their equation-solving representations from discrete algebra tiles to continuous number-line models. The models serve two purposes: they assist students in solving the problem, and they provide scaffolding for writing expressions and equations in the remaining questions. **Materials Needed:** None	7.10B **7.11A** 7.11B	2

*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

MODULE 3, TOPIC 2 PACING GUIDE

150-Day Pacing

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
4	**Using Inverse Operations to Solve Equations**	Now that students have explored both discrete and continuous models for equation problem solving, they learn the formal strategies for solving two-step equations and formalize the language of solving equations. They review the properties of equality and use the properties to justify applying inverse operations to solve equations. Because of the properties of equality, when an operation is applied to both sides of an equation, the transformed equation has the same solution as the original equation. Students then use inverse operations to solve equations. Students learn strategies for developing efficiency in solving two-step equations. They learn that, because of the properties of equality, they can multiply or divide all terms of an equation by the same rational number to ease computations. They apply the strategies learned throughout the lesson to solve two-step linear equations, including number riddles. As students solve equations, they also check their solutions. Finally, students summarize solving two-step equations and write real-world scenarios that model situations involving equations. **Materials Needed:** Problem-Solving Model Graphic Organizer	7.10A 7.10B 7.10C **7.11A** 7.11B	2
5	**Using Inverse Operations to Solve Inequalities**	Students use algebra tiles and inverse operations to solve inequalities. Students compare the steps of solving equations to inequalities, verify the solutions of inequalities, and graph solutions of inequalities. This lesson lays the foundation for solving one-variable, two-step inequalities and representing their solutions on number lines, which students will revisit in Topic 3: *Multiple Representations of Equations*. **Materials Needed:** Algebra Tiles (printable version at the end of the lesson), Scissors, Problem-Solving Model Graphic Organizer	7.10A 7.10B 7.10C **7.11A** 7.11B	1
End of Topic Assessment				1
Learning Individually with Skills Practice *Schedule these days strategically throughout the topic to support student learning.*				3

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MODULE 3, TOPIC 2 PACING GUIDE

150-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

✪ *This activity highlights a key term or concept that is essential to the learning goals of the lesson.*

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: 7.10A, **7.11A**		TEKS 7.10B, **7.11A**, 7.11B		
LESSON 1 Modeling Equations as Equal Expressions GETTING STARTED ✪ ACTIVITY 1 ✪ ACTIVITY 2 ✪	**LESSON 1** continued ACTIVITY 3 ✪ ACTIVITY 4 ✪ TALK THE TALK	**LESSON 2** Solving Equations Using Algebra Tiles GETTING STARTED ACTIVITY 1 ✪ ACTIVITY 2 ✪	**LESSON 2** continued ACTIVITY 3 ✪ TALK THE TALK ✪	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*

Day 6	Day 7	Day 8	Day 9	Day 10
TEKS: 7.10B, **7.11A**, 7.11B			TEKS: 7.10A, 7.10B, 7.10C, **7.11A**, 7.11B	
LESSON 3 Solving Equations on a Double Number Line GETTING STARTED ✪ ACTIVITY 1 ✪	**LESSON 3** continued ACTIVITY 2 ✪ ACTIVITY 3 ✪ TALK THE TALK	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 4** Using Inverse Operations to Solve Equations GETTING STARTED ✪ ACTIVITY 1 ✪ ACTIVITY 2 ✪	**LESSON 4** continued ACTIVITY 3 ✪ ACTIVITY 4 ✪ TALK THE TALK ✪

Day 11	Day 12	Day 13
TEKS 7.10A, 7.10B, 7.10C, **7.11A**, 7.11B		
LESSON 5 Using Inverse Operations to Solve Inequalities GETTING STARTED ✪ ACTIVITY 1 ✪ TALK THE TALK ✪	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**END OF TOPIC ASSESSMENT**

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MODULE 3, TOPIC 3 PACING GUIDE

150-Day Pacing

3 Reasoning Algebraically

TOPIC 3: Multiple Representations of Equations

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 7.1A, 7.1B, 7.1C, 7.1E, 7.1F, 7.1G

ELPS: 1.G, 1.H, 2.A, 2.B, 3.B, 5.A, 5.F, 5.G

Topic Pacing: 10 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
1	**Representing Equations with Tables and Graphs**	Students analyze linear equations using tables and graphs. Given situations written as sentences, students identify the quantities that change, the quantities that remain constant, and the quantity that depends on the other. They write and solve equations. Students then create a table of values related to the situation. Using the table of values, students create a graph of the situation represented by the data, considering the maximum values, minimum values, and intervals. Students then answer questions related to possible ordered pairs and use the equation and the graph to justify their reasoning. In one situation, students answer questions regarding events that occurred before a specified time, and the timing of those events are represented using negative numbers. Throughout the lesson, students explain if the linear situations represent proportional relationships using the tables, equations, and graphs. **Materials Needed:** Straightedges	**7.7A** 7.10A **7.11A**	2
2	**Building Inequalities and Equations to Solve Problems**	Students work with a negative rate of change. They use negative values to create a table and graph a problem situation. Students write an equation that represents the situation with a negative value for the unit rate of change, answer several questions, and enter the results in a table which is used to graph the situation. Students analyze the graph to write inequalities based on constraints provided in the scenario. Students write and solve inequalities to answer questions about the scenario. This lesson builds on the skills students learned in the previous topic, Whatever the Title Is. The activities incorporate graphing on the coordinate plane-- which students learned in the previous course-- to deepen their understanding of solving one-variable, two-step inequalities and graphing their solutions on number lines. **Materials Needed:** Straightedges	**7.4A** **7.7A** 7.10A **7.11A**	**2**

*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

MODULE 3, TOPIC 3 PACING GUIDE

150-Day Pacing

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
3	**Using Multiple Representations to Solve Problems**	Students put together all that they have learned about the different representations of a linear relationship. Throughout these activities, students are given one of the representations—a verbal description, an equation, a table, or a graph—and they have to use what they know from that representation to create the other representations. They connect these different representations to model each situation. **Materials Needed:** Problem-Solving Model Graphic Organizer, Straightedges	**7.4A** **7.7A**	**2**
End of Topic Assessment				1
Learning Individually with Skills Practice *Schedule these days strategically throughout the topic to support student learning.*				3

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MODULE 3, TOPIC 3 PACING GUIDE

150-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

✪ *This activity highlights a key term or concept that is essential to the learning goals of the lesson.*

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: **7.7A**, 7.10A, **7.11A**			TEKS: **7.4A**, **7.7A**, 7.10A, **7.11A**	
LESSON 1 Representing Equations with Tables and Graphs GETTING STARTED ACTIVITY 1 ✪	**LESSON 1** continued ACTIVITY 2 ✪ TALK THE TALK ✪	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 2** Building Inequalities and Equations to Solve Problems GETTING STARTED ✪ ACTIVITY 1 ✪	**LESSON 2** continued ACTIVITY 2 ✪ ACTIVITY 3 ✪ TALK THE TALK ✪
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
	TEKS: **7.4A**, **7.7A**			
LEARNING INDIVIDUALLY Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 3** Using Multiple Representations to Solve Problems GETTING STARTED ACTIVITY 1 ✪ ACTIVITY 2 ✪	**LESSON 3** continued ACTIVITY 3 ✪ ACTIVITY 4 ✪ TALK THE TALK	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**END OF TOPIC ASSESSMENT**

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Secondary Mathematics
EDITION 1

Module 4

150-Day Topic Pacing Guides

MODULE 4, TOPIC 1 PACING GUIDE

150-Day Pacing

4 Analyzing Populations and Probabilities

TOPIC 1: Introduction to Probability

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 7.1A, 7.1B, 7.1C, 7.1D, 7.1E, 7.1F, 7.1G

ELPS: 1.E, 2.C, 2.G, 3.D, 3.F, 3.G, 4.B, 4.C, 4.K, 5.B

Topic Pacing: 13 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
1	**Defining and Representing Probability**	Students conduct an experiment that involves rolling one six-sided number cube. The terms *outcome*, *experiment*, *sample space*, *event*, *simple event*, *probability*, *complementary events*, *and equally likely* are defined. Students calculate probabilities rolling number cubes, using spinners, and drawing marbles from a bag. **Materials Needed:** None	7.6E **7.6I** **7.6H**	3
2	**Probability Models**	The terms *probability model*, *uniform probability model*, and *non-uniform probability model* are defined in this lesson. Students will develop a probability model for an experiment and use it to determine probabilities of events. They will construct and interpret uniform and non-uniform probability models. **Materials Needed:** None	**7.6I**	**1**
3	**Determining Experimental Probability of Simple Events**	Students flip a coin multiple times to determine the probabilities of heads and tails based on the results of the experiment. The terms *theoretical probability* and *experimental probability* are defined in this lesson. Students conduct trials of a Toss the Cup experiment to estimate probabilities of the 3 outcomes. They also conduct trials of a spinner game in order to calculate experimental probabilities using data. Students use those experimental probabilities to predict the number of outcomes for a given number of trials. They then compare the experimental probabilities to the theoretical probabilities using *percent error*. **Materials Needed:** Coins, Paper or Plastic Cups, Paper Clips	7.6C 7.6D **7.6H** **7.6I**	2

*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

MODULE 4, TOPIC 1 PACING GUIDE

150-Day Pacing

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
4	**Simulating Simple Experiments**	The term *simulation* is defined in this lesson. A coin toss serves as a simulation to determine the experimental probability of the percent of female chickens hatched. Students note that as the number of trials increases, the experimental probability approaches the theoretical probability. Other situations used in this lesson are a five-question multiple-choice test, a ten-question true-or-false test, a number cube game, and a card game. Students describe simulation models that fit each situation. **Materials Needed:** Coins, Paper Clips, Number Cubes, Technology to Simulate a Spinner, Note Cards, Problem-Solving Graphic Organizer	7.6B 7.6C 7.6D	2
End of Topic Assessment				1
Learning Individually with Skills Practice *Schedule these days strategically throughout the topic to support student learning.*				4

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MODULE 4, TOPIC 1 PACING GUIDE

150-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

✪ *This activity highlights a key term or concept that is essential to the learning goals of the lesson.*

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: 7.6E, **7.6H**, **7.6I**				TEKS: **7.6I**
LESSON 1 Defining and Representing Probability **GETTING STARTED** **ACTIVITY 1** ✪	**LESSON 1** continued **ACTIVITY 2** ✪ **ACTIVITY 3** ✪	**LESSON 1** continued **ACTIVITY 4** ✪ **ACTIVITY 5** ✪ **TALK THE TALK**	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 2** Probability Models **GETTING STARTED** **ACTIVITY 1** ✪ **ACTIVITY 2** ✪ **ACTIVITY 3** **TALK THE TALK**
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
	TEKS: 7.6C, 7.6D, **7.6H**, **7.6I**			TEKS: 7.6B, 7.6C, 7.6D
LEARNING INDIVIDUALLY **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 3** Determining Experimental Probability of Simple Events **GETTING STARTED** **ACTIVITY 1** ✪ **ACTIVITY 2** ✪	**LESSON 3** continued **ACTIVITY 3** ✪ **ACTIVITY 4** **TALK THE TALK** ✪	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 4** Simulating Simple Experiments **GETTING STARTED** **ACTIVITY 1** ✪ **ACTIVITY 2** ✪
Day 11	**Day 12**	**Day 13**		
LESSON 4 continued **ACTIVITY 3** ✪ **TALK THE TALK** ✪	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	**END OF TOPIC ASSESSMENT**		

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MODULE 4, TOPIC 2 PACING GUIDE

150-Day Pacing

4 Analyzing Populations and Probabilities

TOPIC 2: Compound Probability

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 7.1A, 7.1B, 7.1C, 7.1D, 7.1E, 7.1F, 7.1G

ELPS: 1.A, 1.E, 1.F, 2.C, 2.E, 2.G, 3.D, 4.G, 5.B,

Topic Pacing: 11 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
1	Using Arrays to Organize Outcomes	This lesson provides the foundation for probability of compound events. Students use arrays and lists to determine sample spaces and then to calculate probabilities. First, they conduct an experiment tossing two coins and predict the theoretical probability of each outcome based on their experiment. Next, students conduct trials using a six-sided number cube, record the data in a table, and determine the experimental probabilities of each possible sum of the numbers on the cubes. They use an array to organize the outcomes, determine the sample space, and then determine the theoretical probabilities. These probabilities are used to calculate probabilities of compound events (but not stated as such) and make predictions using proportional reasoning. Finally, students practice these skills with a 4-section spinner and the Getting Started activity. **Materials needed:** Coins (one per student), Six-Sided Number Cubes (one per student)	7.6A 7.6C 7.6D **7.6I**	2
2	Using Tree Diagrams	Students use experimental data to create a probability model and then construct a second probability model using theoretical probabilities for comparison purposes. Tree diagrams are introduced as another method to illustrate all the possible outcomes in a sample space. They then analyze a given tree diagram modeling the same situation and create a third probability model. In the second activity, a five-sided spinner and a tree diagram are used to generate all possible outcomes to create a probability model and answer related questions. To demonstrate their understanding, students create a tree diagram for all possible outcomes of correctly guessing the answers to a 3-question true or false test. They then use the tree diagram to create a probability model and use the model to determine specified probabilities. **Materials needed:** None	7.6A **7.6I**	**1**

*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

MODULE 4, TOPIC 2 PACING GUIDE

150-Day Pacing

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
3	**Determining Compound Probability**	The term *compound event* is defined in this lesson. Within the context of the first situation, students determine the probability for 3 events by calculating the sum of the probabilities of each event. In the second situation, students calculate and compare the probability of a compound event with the word and to the probability of a compound event with the word or. They distinguish between the two compound events; they state that the compound event associated with the word and means simple events both (or all) occur, while the compound event associated with the word or means any combination of one or more simple events occurring. When calculating the probability of a compound event, students learn not to count repeated outcomes if the same outcome appears in more than one simple event. **Materials needed:** None	7.6A 7.6D	2
4	**Simulating Probability of Compound Events**	Students design and conduct simulations that model three situations. They use the tool of their choice to simulate the free throws made by a basketball player. Students then use a random number table to model a problem situation involving various blood groups that a person might have and donate. Finally, students use the tool of their choice to simulate the kicks by a football kicker. During these problems, students have the opportunity to reinforce their new knowledge of compound probabilities. Students use the simulations to determine the number out of the next set number that meet the criterion, as well as how many people, free throws, or kicks until the first success. **Materials needed:** Six-Sided Number Cubes, Other Simulation Tools, as desired	7.6B 7.6C 7.6D	2
End of Topic Assessment				1
Learning Individually with Skills Practice *Schedule these days strategically throughout the topic to support student learning.*				3

*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

MODULE 4, TOPIC 2 PACING GUIDE

150-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: 7.6A, 7.6C, 7.6D, **7.6I**		TEKS: 7.6A, **7.6I**		TEKS: 7.6A, 7.6D
LESSON 1 Using Arrays to Organize Outcomes **GETTING STARTED** **ACTIVITY 1**	**LESSON 1** continued **ACTIVITY 2** **ACTIVITY 3** **TALK THE TALK**	**LESSON 2** Using Tree Diagrams **GETTING STARTED** **ACTIVITY 1** **ACTIVITY 2** **TALK THE TALK**	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 3** Determining Compound Probability **GETTING STARTED** **ACTIVITY 1**
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
		TEKS: 7.6B, 7.6C, 7.6D		
LESSON 3 continued **ACTIVITY 2** **TALK THE TALK**	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 4** Simulating Probability of Compound Events **GETTING STARTED** **ACTIVITY 1**	**LESSON 4** continued **ACTIVITY 2** **TALK THE TALK**	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*
Day 11				
END OF TOPIC ASSESSMENT				

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MODULE 4, TOPIC 3 PACING GUIDE

150-Day Pacing

4 Analyzing Populations and Probabilities

TOPIC 3: Drawing Inferences

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 7.1A, 7.1B, 7.1C, 7.1D, 7.1E, 7.1G

ELPS: 1.D, 1.E, 1.G, 2.D, 2.H, 3.A, 3.D, 3.E, 3.G, 4.A, 4.G, 4.J, 5.B, 5.G

Topic Pacing: 16 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
1	**Collecting Random Samples**	Students review the statistical process and deepen their understanding of the second component of the process: data collection. They are introduced to new terms related to data collection. Students then read various problem situations and differentiate between *census* and *sample* and *parameter* and *statistic*. Students learn that a sample is smaller than the population, and it represents characteristics of the population. They encounter methods for selecting samples from a population and determine if methods inadvertently misrepresent the population. Students use two tools to generate random numbers: randomly selecting numbers from a bag and using provided random number tables. **Materials Needed:** Paper Bags, Scissors, Blank Paper	7.6F 7.12B	2
2	**Using Random Samples to Draw Inferences**	Students use statistical information gathered from a sample to determine a parameter for a population. They complete this process two times with one scenario. The first time students may select the sample using various methods; however, the second time they follow a specific strategy to select a random sample. In each case, students use proportional reasoning to estimate the parameter. They compute percent error and conclude that statistics obtained from samples are more likely to represent the parameter of the population if the sample is randomly chosen. They then analyze data from 100 samples and predict the parameter from the data. Finally, students are provided with a scenario and must design and carry out a sampling plan to estimate the parameter. **Materials Needed:** Problem-Solving Model Graphic Organizer	7.6B 7.6F 7.12B	2
3	**Bar Graphs**	In this lesson, students analyze categorical data presented in bar graphs. Students analyze three types of bar graphs–single bar graphs (with horizontal or vertical bars), double bar graphs, and stacked bar graphs. Students then answer questions about data provided and create their own graphs from data sets. **Materials Needed:** None	**7.6G** 7.12C	2

*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

MODULE 4, TOPIC 3 PACING GUIDE

150-Day Pacing

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
4	**Comparing Two Populations**	Within the context of a situation, students calculate the measures of center and measures of variability for two different populations. They compare the difference of the measures of center for the two populations to their measures of variation. Students construct line plots and determine a five-number summary for a data set for comparison purposes. A stem-and-leaf plot is used to display data in one situation. **Materials Needed:** None	**7.6G** **7.12A**	2
5	**Using Random Samples from Two Populations to Draw Conclusions**	Students use random samples to draw conclusions about two populations. The characteristics of the two populations are analyzed using graphical displays in the form of stem-and-leaf plots and box plots. In the first situation, students are given a table of values containing data for two populations. In the second situation, students are given two histograms containing data for two distinct populations. Students create graphical displays to answer questions related to each problem situation. Questions focus on means, medians, ranges, mean absolute deviation, and interquartile ranges. **Materials Needed:** Problem-Solving Model Graphic Organizer	7.6F **7.12A** 7.12C	2
End of Topic Assessment				1
Learning Individually with Skills Practice *Schedule these days strategically throughout the topic to support student learning.*				5

*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

MODULE 4, TOPIC 3 PACING GUIDE

150-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: 7.6F, 7.12B **LESSON 1** Collecting Random Samples **GETTING STARTED** **ACTIVITY 1**	**LESSON 1** continued **ACTIVITY 2** **ACTIVITY 3** **TALK THE TALK**	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	TEKS: 7.6B, 7.6F, 7.12B **LESSON 2** Using Random Samples to Draw Inferences **GETTING STARTED** **ACTIVITY 1**	**LESSON 2** continued **ACTIVITY 2** **ACTIVITY 3** **TALK THE TALK**
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
LEARNING INDIVIDUALLY **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	TEKS: **7.6G**, 7.12C **LESSON 3** Bar Graphs **GETTING STARTED** **ACTIVITY 1**	**LESSON 3** continued **ACTIVITY 2** **ACTIVITY 3** **TALK THE TALK**	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	TEKS; **7.6G, 7.12A** **LESSON 4** Comparing Two Populations **GETTING STARTED** **ACTIVITY 1**
Day 11	**Day 12**	**Day 13**	**Day 14**	**Day 15**
LESSON 4 continued **ACTIVITY 2** **TALK THE TALK**	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*	TEKS: 7.6F, **7.12A**, 7.12C **LESSON 5** Using Random Samples from Two Populations to Draw Conclusions **GETTING STARTED** **ACTIVITY 1** **ACTIVITY 2**	**LESSON 5** continued **ACTIVITY 3** **TALK THE TALK**	**LEARNING INDIVIDUALLY** **Skills Practice** *This is a suggested placement. Move based on student data and individual needs.*
Day 16				
END OF TOPIC ASSESSMENT				

*Bold TEKS = Readiness Standard

How can you incorporate Skills Practice with students?

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How can you identify whether students are ready for new learning?

The Prepare section of the Lesson Assignments and the Spaced Practice sets of Skills Practice can serve as diagnostic tools. Depending on available time, you can assign the Prepare section of the Lesson Assignments as homework or as a warm-up to identify students' prior knowledge for the upcoming lesson's activities. You can also use the Spaced Practice sets of Skills Practice to analyze individual students' level of proficiency on standards from previous topics.

Secondary Mathematics

EDITION 1

Module 5

150-Day Topic Pacing Guides

MODULE 5, TOPIC 1 PACING GUIDE

150-Day Pacing

5 Constructing and Measuring

TOPIC 1: Angle Relationships

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 7.1C, 7.1D, 7.1E, 7.1F, 7.1G

ELPS: 1.A, 1.C, 1.E, 2.C, 3.D, 3.F, 4.F, 4.G, 5.B

Topic Pacing: 7 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
1	**Solving Equations Using the Triangle Sum Theorem**	In this lesson, students build on their previous knowledge of the Triangle Sum Theorem. They write and solve equations involving the sum of angles in triangles, including isosceles triangles. **Materials Needed:** None	7.11C	1
2	**Relationships Between 90° and 180° Angles**	Students explore the relationships between 90° and 180° angles. They learn the definitions of *complementary angles*, *supplementary angles*, and *perpendicular lines*. Students use a protractor to explore the relationship between complementary and supplementary angles. They then use patty paper to deepen their knowledge of perpendicular lines and the relationship to complementary and supplementary angles. Students then apply what they know about complementary angles to write and solve two different equations in one variable. **Materials Needed:** Protractors, Straightedges, Patty Paper (5 sheets per student)	7.11C	1
3	**Special Angle Relationships**	Students explore the types of angles formed when two lines intersect. They learn the definitions of *adjacent angles*, *linear pairs of angles*, and *vertical angles*. Throughout the lesson, students use patty paper to illustrate the special angle pairs and any special relationships between the measures of angle pairs. **Materials Needed:** Protractors, Straightedges, Patty Paper (5 sheets per student)	7.11C	2
End of Topic Assessment				1
Learning Individually with Skills Practice *Schedule these days strategically throughout the topic to support student learning.*				2

*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

MODULE 5, TOPIC 1 PACING GUIDE

150-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

✪ *This activity highlights a key term or concept that is essential to the learning goals of the lesson.*

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: 7.11C	TEKS: 7.11C		TEKS: 7.11C	
LESSON 1 Solving Equations Using the Triangle Sum Theorem GETTING STARTED ACTIVITY 1 ✪ ACTIVITY 2 ✪ TALK THE TALK ✪	**LESSON 2** Relationships Between 90° and 180° Angles GETTING STARTED ✪ ACTIVITY 1 ✪ ACTIVITY 2 ✪ TALK THE TALK	**LEARNING INDIVIDUALLY** SKILLS PRACTICE *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 3** Special Angle Relationships GETTING STARTED ACTIVITY 1 ✪ ACTIVITY 2 ✪	**LESSON 3** continued ACTIVITY 3 ✪ TALK THE TALK ✪

Day 6	Day 7
LEARNING INDIVIDUALLY SKILLS PRACTICE *This is a suggested placement. Move based on student data and individual needs.*	**END OF TOPIC ASSESSMENT**

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MODULE 5, TOPIC 2 PACING GUIDE

150-Day Pacing

5 Constructing and Measuring

TOPIC 2: Area, Surface Area, and Volume

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 7.1A, 7.1B, 7.1D, 7.1F, 7.1G

ELPS: 1.A, 1.C, 1.E, 1.G, 2.I, 3.H, 4.D, 4.F, 4.G, 5.B, 5.C, 5.D

Topic Pacing: 12 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
1	**Composite Figures**	In this lesson, students calculate the area of complex figures. They compare two methods: decomposing a figure into familiar shapes and composing a figure into a rectangle. Students then solve problems in context, including the area of countries using map scales to approximate areas. They use given dimensions and problem solving to calculate the area of a triangle embedded in a square. **Materials Needed:** Centimeter Rulers, Problem-Solving Model Graphic Organizer	**7.9C**	**1**
2	**Total Surface Area of Prisms and Pyramids**	Students apply mathematical and spatial reasoning to determine the surface areas of prisms and pyramids using nets, drawings, and measurements. Students solve a variety of surface area problems and distinguish between volume and surface area measurements. **Materials Needed:** Scissors, Tape, Rulers, Problem-Solving Model Graphic Organizer	7.3A 7.9D	3
3	**Volume of Prisms and Pyramids**	Students cut out given nets and assemble an open rectangular prism and an open rectangular pyramid. They compare the models and determine that the heights and bases are congruent. Students fill the models with birdseed to discover that the volume of the pyramid is one-third the volume of the prism, and they then write the formula for the volume of each. Students repeat the activity for a triangular prism and a triangular pyramid with congruent heights and bases. They then use the volume formulas to solve problems involving rectangular and triangular prisms and pyramids. **Materials Needed:** Scissors, Tape, Birdseed or Rice, Paper, Rulers	7.8A 7.8B **7.9A**	2
4	**Volume and Surface Area Problems with Prisms and Pyramids**	Students compare two different pieces of acoustical foam: one that is made up of square pyramids and one that is made up of triangular prisms. Students are introduced to the term *lateral area*, and they compare the surface areas and lateral areas of the foam pieces. They then determine the total amount of foam that covers the top surface of the two pieces of foam. Finally, students use the formulas for the volume, surface area, and lateral area of rectangular and triangular prisms and pyramids to solve real-world problems. **Materials Needed:** Rulers, Calculators (optional), Problem-Solving Model Graphic Organizer	**7.9A** 7.9D	2
End of Topic Assessment				1
Learning Individually with Skills Practice *Schedule these days strategically throughout the topic to support student learning.*				3

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MODULE 5, TOPIC 2 PACING GUIDE

150-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

✪ *This activity highlights a key term or concept that is essential to the learning goals of the lesson.*

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: **7.9C**		TEKS: 7.3A, 7.9D		
LESSON 1 Composite Figures GETTING STARTED ✪ ACTIVITY 1 ✪ ACTIVITY 2 TALK THE TALK ✪	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 2** Total Surface Area of Prisms and Pyramids GETTING STARTED ✪ ACTIVITY 1 ✪	**LESSON 2** continued ACTIVITY 2 ✪ ACTIVITY 3 ✪	**LESSON 2** continued ACTIVITY 4 ✪ TALK THE TALK ✪
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
	TEKS: 7.8A, 7.8B, **7.9A**		TEKS: **7.9A** 7.9D	
LEARNING INDIVIDUALLY Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 3** Volume of Prisms and Pyramids GETTING STARTED ✪ ACTIVITY 1 ✪	**LESSON 3** continued ACTIVITY 2 ✪ ACTIVITY 3 ✪ TALK THE TALK ✪	**LESSON 4** Volume and Surface Area Problems with Pyramids and Prisms GETTING STARTED ACTIVITY 1 ✪	**LESSON 4** continued ACTIVITY 2 ✪ ACTIVITY 3 ✪ TALK THE TALK ✪
Day 11	**Day 12**			
LEARNING INDIVIDUALLY Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**END OF TOPIC ASSESSMENT**			

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