



Grade 7 Math

 Collaboration Grade 7 Mathematics District Middle School 2014-2015

Tuesday, September 2, 2014, 3:37PM



Module 1 (Week 1, 4 Weeks)

Standards & Benchmarks

CA: CCCS: Mathematics, CA: Grade 6, Ratios & Proportional Relationships

6.RP Understand ratio concepts and use ratio reasoning to solve problems.

- 6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

CA: CCCS: Mathematics, CA: Grade 7, Ratios & Proportional Relationships

7.RP Analyze proportional relationships and use them to solve real-world and mathematical problems.

- 7.RP.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.
- 7.RP.2 Recognize and represent proportional relationships between quantities.
- 7.RP.2a Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
- 7.RP.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
- 7.RP.2c Represent proportional relationships by equations.
- 7.RP.2d Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.
- 7.RP.3 Use proportional relationships to solve multistep ratio and percent problems.

Text Support

MODULE 1 (17 days)

CHAPTER 1: RATIOS AND RATES (9 days)

MATHia Software [2 days - anywhere in this chapter]

Lesson 1.1 Introduction to Ratios and Rates, TIG pp. 3a-14 (6.RP.1, 7.RP.1) [1 day]

Student Assignments, SA pp. 1-4

Lesson 1.2 Ratios, Rates, and Mixture Problems, TIG pp. 15a-22a (7.RP.1) [1 day]

Student Assignments, SA pp. 5-8

Lesson 1.3 Rates and Proportions, TIG pp. 23a-30b (7.RP.1) [1 day]

Student Assignments, SA pp. 9-11

Lesson 1.4 Using Tables to Solve Problems, TIG pp. 31a-36a (7.RP.1, 7.RP.2.b) [1 day]

Student Assignments, SA pp. 13-16

Lesson 1.5 Using Proportions to Solve Problems, TIG pp. 37a-50 (7.RP.1, 7.RP.2.c, 7.RP.3) [1 day]

Student Assignments, SA pp. 17-22

Lesson 1.6 Using Unit Rates in Real World Applications, TIG pp. 51a-56 (7.RP.1, 7.RP.2.b, 7.RP.3) [1 day]

Student Assignments, SA pp. 23-25

Chapter 1 Summary (possible study guide), TIG pp. 57-63

Assessment / Performance Task [1 day]

CHAPTER 2 (PART 1): DIRECT VARIATION AND CONSTANT OF PROPORTIONALITY (6 days)

MATHia Software [1 day - anywhere in this chapter]

Lesson 2.1 Introduction to Direct Variation, TIG pp. 67a-74b (7.RP.1, 7.RP.2.a, 7.RP.2.d) [1 day]

Student Assignments, SA pp. 27-28

Resources

Materials Needed

None

Universal Access Support

coming in 2014-15...

Carnegie Learning Online

coming in 2014-15...

Teaching Resources/Documents

coming in 2014-15...

Professional Development

coming in 2014-15...

Standards & Benchmarks

Text Support

Resources

Lesson 2.2 Determining Equivalent Ratios, TIG pp. 75a-84a (7.RP.2.a) [1 day]
Student Assignments, SA pp. 29-32

Lesson 2.3 Determining and Applying the Constant of Proportionality, TIG pp. 85a-98b (7.RP.2.b, 7.RP.2.c) [2 days]
Student Assignments, SA pp. 33-35

Lesson 2.4 Using the Constant of Proportionality to Solve Proportions, TIG pp. 99a-104b (7.RP.2.a, 7.RP.2.b, 7.RP.2.c, 7.RP.3) [1 day]
Student Assignments, SA pp. 37-38

Module 1 Assessment and Reteach (5 days)

Administer Common Assessment #1
Choose 3-4 days of lessons from the following choices based on student needs:

Reteach

Lesson 1.1 Skills Practice, SSP pp. 335-341

Lesson 1.2 Skills Practice, SSP pp. 343-351

Lesson 1.3 Skills Practice, SSP pp. 353-358

Lesson 1.4 Skills Practice, SSP pp. 359-362

Lesson 1.5 Skills Practice, SSP pp. 363-366

Lesson 1.6 Skills Practice, SSP pp. 367-372

Lesson 2.1 Skills Practice, SSP pp. 373-381

Lesson 2.2 Skills Practice, SSP pp. 383-391

Lesson 2.3 Skills Practice, SSP pp. 393-402

Lesson 2.4 Skills Practice, SSP pp. 403-406

Extend

Lesson 1.1 Student Assignments, SA pp. 1-4

Lesson 1.2 Student Assignments, SA pp.

Module 1 Assessment and Reteach (Week 5, 1 Week)

Universal Access Support

coming in 2014-15...

Carnegie Learning Online

coming in 2014-15...

Teaching Resources/Documents

coming in 2014-15...

Professional Development

coming in 2014-15...

Standards & Benchmarks

Text Support

Resources

5-8

Lesson 1.3 Student Assignments, SA pp. 9-11

Lesson 1.4 Student Assignments, SA pp. 13-16

Lesson 1.5 Student Assignments, SA pp. 17-22

Lesson 1.6 Student Assignments, SA pp. 23-25

Lesson 2.1 Student Assignments, SA pp. 27-28

Lesson 2.2 Student Assignments, SA pp. 29-32

Lesson 2.3 Student Assignments, SA pp. 33-35

Lesson 2.4 Student Assignments, SA pp. 37-38

Module 2 (Week 6, 4 Weeks)

CA: CCCS: Mathematics, CA: Grade 7, Ratios & Proportional Relationships

7.RP Analyze proportional relationships and use them to solve real-world and mathematical problems.

- 7.RP.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.
- 7.RP.2 Recognize and represent proportional relationships between quantities.
- 7.RP.2a Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
- 7.RP.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
- 7.RP.2c Represent proportional relationships by equations.
- 7.RP.2d Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.
- 7.RP.3 Use proportional relationships to solve

MODULE 2 (19 days)

CHAPTER 2 (PART 2): GRAPHING DIRECT PROPORTIONS (6 days)

MATHia Software [1 day - anywhere in this chapter]

Lesson 2.5 Graphing Direct Proportions, TIG pp. 105a-118a

(7.RP.2.a, 7.RP.2.b, 7.RP.2.c, 7.RP.2.d) [2 days]

Student Assignments, SA pp. 39-42

Lesson 2.6 Using Direct Proportions, TIG pp. 119a-127d (7.RP.2.a, 7.RP.2.b, 7.RP.2.c) [1 day]

Student Assignments, SA pp. 43-45

Lesson 2.7 Interpreting Multiple Representations of Direct Proportions, TIG pp. 127-136b (7.RP.2.a, 7.RP.2.b, 7.RP.2.c, 7.RP.2.d) [1 day]

Student Assignments, SA pp. 47-48

Chapter 2 Summary (possible study guide)
TIG pp. 141-144

Assessment/Performance Task [1 day]

CHAPTER 3: RATES & PERCENTS (8 days)

MATHia Software [2 days - anywhere in this chapter]

Lesson 3.1 Estimate and Calculate

Materials Needed

Lesson 4.1 - Six-sided dice in two colors or scissors, markers, and tape

Lesson 4.2 - Painters tape

Lesson 4.3 - Two color counters

Lesson 4.4 - Two color counters

Universal Access Support

coming in 2014-15...

Carnegie Learning Online

coming in 2014-15...

Teaching Resources/Documents

coming in 2014-15...

Professional Development

coming in 2014-15...

Standards & Benchmarks

multistep ratio and percent problems.

CA: CCCS: Mathematics, CA: Grade 7, The Number System
7.NS Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

- 7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
- 7.NS.1a Describe situations in which opposite quantities combine to make 0.
- 7.NS.1b Understand $p + q$ as the number located a distance $|q|$ from p , in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
- 7.NS.1c Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
- 7.NS.1d Apply properties of operations as strategies to add and subtract rational numbers.
- 7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
- 7.NS.2a Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
- 7.NS.2b Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.
- 7.NS.2c Apply properties of operations as strategies to multiply and divide rational numbers.

Text Support

Percents and Rates, TIG pp. 147a-152a (7.RP.1, 7.RP.3) [1 day]

Student Assignments, SA pp. 49-50

Lesson 3.2 Solving Percent Problems, TIG pp. 153a-160a (7.RP.2.c, 7.RP.3) [1 day]

Student Assignments, SA pp. 51-54

Lesson 3.3 Using Proportions and Percent Equations,

TIG pp.161a-168b (7.RP.2.c, 7.RP.3) [1 day]

Student Assignments, SA pp. 55-58

Lesson 3.4 Using Percents, TIG pp.169-176a (7.RP.2.a, 7.RP.2.c, 7.RP.3) [1 day]

Student Assignments, SA pp. 59-62

Lesson 3.5 Solving Percent Problems Involving Proportions,

TIG pp.177a-186 (7.RP.2.a, 7.RP.b, 7.RP.2.c, 7.RP.3) [1 day]

Student Assignments, SA pp. 63-64

Chapter 3 Summary (possible study guide)

TIG pp. 187-191

Assessment/Performance Task [1 day]

CHAPTER 4 (PART 1) ADDITION AND SUBTRACTION WITH RATIONAL NUMBERS (5 days)

MATHia Software [1 day - anywhere in this chapter]

Lesson 4.1 Using Models to Understand Integers,

TIG pp.195a-204 (7.NS.1.a, 7.NS.1.b) [1 day]

Student Assignments, SA pp. 65

Lesson 4.2 Adding Integers/Part 1, TIG pp.205a-214a (7.NS.1.b) [1 day]

Student Assignments, SA pp. 67-71

Lesson 4.3 Adding Integers/Part 2, TIG pp.215a-225d (7.NS.1.a, 7.NS.1.b, 7.NS.1.c) [1 day]

Student Assignments, SA pp. 73-76

Lesson 4.4 Subtracting Integers, TIG pp. 225-238b

(7.NS.1.a, 7.NS.1.b, 7.NS.1.c, 7.NS.1.d) [1 day]

Student Assignments, SA pp. 77-80

Resources

Standards & Benchmarks

- 7.NS.2d Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
- 7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.

Module 2 Assessment and Reteach

(Week 10, 1
Week)

Text Support

Module 2 Assessment and Reteach (5 days)

Administer Common Assessment #2
Choose 3-4 days of lessons from the following choices based on student needs:

Reteach

Lesson 2.5 Skills Practice, SSP pp. 407-413

Lesson 2.6 Skills Practice, SSP pp. 415-426

Lesson 2.7 Skills Practice, SSP pp. 427-434

Lesson 3.1 Skills Practice, SSP pp. 435-441

Lesson 3.2 Skills Practice, SSP pp. 443-458

Lesson 3.3 Skills Practice, SSP pp. 459-467

Lesson 3.4 Skills Practice, SSP pp. 469-480

Lesson 3.5 Skills Practice, SSP pp. 481-488

Lesson 4.1 Skills Practice, SSP pp. 489-492

Lesson 4.2 Skills Practice, SSP pp. 493-498

Lesson 4.3 Skills Practice, SSP pp. 499-507

Lesson 4.4 Skills Practice, SSP pp. 509-514

Extend

Lesson 2.5 Student Assignments, SA pp. 39-42

Lesson 2.6 Student Assignments, SA pp. 43-45

Lesson 2.7 Student Assignments, SA pp.

Resources

Universal Access Support

coming in 2014-15...

Carnegie Learning Online

coming in 2014-15...

Teaching Resources/Documents

coming in 2014-15...

Professional Development

coming in 2014-15...

Standards & Benchmarks

Text Support

Resources

47-48

Lesson 3.1 Student Assignments, SA pp. 49-50

Lesson 3.2 Student Assignments, SA pp. 51-54

Lesson 3.3 Student Assignments, SA pp. 55-58

Lesson 3.4 Student Assignments, SA pp. 59-62

Lesson 3.5 Student Assignments, SA pp. 63-64

Lesson 4.1 Student Assignments, SA pp. 65

Lesson 4.2 Student Assignments, SA pp. 67-71

Lesson 4.3 Student Assignments, SA pp. 73-76

Lesson 4.4 Student Assignments, SA pp. 77-80

Module 3

(Week 11, 5 Weeks)

CA: CCCS: Mathematics, CA: Grade 6, Expressions & Equations
6.EE Reason about and solve one-variable equations and inequalities.

- 6.EE.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

CA: CCCS: Mathematics, CA: Grade 7, The Number System
7.NS Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

- 7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
- 7.NS.1a Describe situations in which opposite quantities combine to make 0.
- 7.NS.1b Understand $p + q$ as the number located a distance $|q|$ from p , in the positive or negative direction

MODULE 3 (24 days)

CHAPTER 4 (PART 2): ADDITION AND SUBTRACTION WITH RATIONAL NUMBERS (3 days)

MATHia Software [1 day - anywhere in this chapter]

Lesson 4.5 Adding & Subtracting Rational Numbers, TIG pp. 239a-246 (7.NS.1.a, 7.NS.1.b, 7.NS.1.c) [1 day]

Student Assignments, SA pp. 81-83
Chapter Summary (possible study guide), TIG pp. 247-250

Assessment/Performance Task [1 day]

CHAPTER 5: MULTIPLICATION AND DIVISION WITH RATIONAL NUMBERS (8 days)

MATHia Software [2 days - anywhere in this chapter]

Lesson 5.1 Multiplying and Dividing Integers, TIG pp. 253a-262b (7.NS.2.a, 7.NS.2.b, 7.NS.2.c) [1 day]

Student Assignments, SA pp. 85-86

Lesson 5.2 Multiplying and Dividing Rational Numbers, TIG pp. 263a-266 (7.NS.2.a, 7.NS.2.b, 7.NS.2.c) [1 day]

Materials Needed

Lesson 5.1 - Two color counters

Lesson 6.4 - Graphing calculator

Universal Access Support

coming in 2014-15...

Carnegie Learning Online

coming in 2014-15...

Teaching Resources/Documents

coming in 2014-15...

Professional Development

coming in 2014-15...

Standards & Benchmarks

depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.

- 7.NS.1c Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
- 7.NS.1d Apply properties of operations as strategies to add and subtract rational numbers.
- 7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
- 7.NS.2a Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
- 7.NS.2b Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.
- 7.NS.2c Apply properties of operations as strategies to multiply and divide rational numbers.
- 7.NS.2d Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
- 7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.

CA: CCCS: Mathematics, CA: Grade 7, Expressions & Equations

7.EE Use properties of operations to generate equivalent expressions.

- 7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
- 7.EE.2 Understand that rewriting an expression in

Text Support

Student Assignments, SA pp. 87-89

Lesson 5.3 Simplifying Arithmetic Expressions with Rational Numbers, TIG pp. 267a-272a (7.NS.1.d, 7.NS.2.a, 7.NS.2.c) [1 day]

Student Assignments, SA pp. 91-94

Lesson 5.4 Evaluating Expressions with Rational Numbers, TIG pp. 273a-282 (7.NS.1.d, 7.NS.2.a, 7.NS.2.b, 7.NS.2.c, 7.NS.3) [1 day]

Student Assignments, SA pp. 95-98

Lesson 5.5 Exact Decimal Representations of Fractions, TIG pp. 283a-288a (7.NS.1.d, 7.NS.2.d) [1 day]

Student Assignments, SA pp. 99-102

Chapter Summary (possible study guide), TIG pp. 289-292

Assessment / Performance Task [1 day]

CHAPTER 6: NUMERICAL AND ALGEBRAIC EXPRESSIONS AND EQUATIONS (8 days)

MATHia Software [2 days - anywhere in this chapter]

Lesson 6.1 Evaluating Algebraic Expressions, TIG pp. 295a-302a (6.EE.6, 7.NS.3) [1 day]

Student Assignments, SA pp. 103-106

Lesson 6.2 Simplifying Expressions Using Distributive Properties, TIG pp. 303a-308a (7.NS.3, 7.EE.1, 7.EE.2) [1 day]

Student Assignments, SA pp. 107-109

Lesson 6.3 Factoring Algebraic Expressions, TIG pp. 309a-316 (7.EE.1, 7.EE.2) [1 day]

Student Assignments, SA pp. 111-112

Lesson 6.4 Verifying that Expressions are Equivalent, TIG pp. 317a-324 (7.EE.1, 7.EE.2) [1 day]

Student Assignments, SA pp. 113-115

Lesson 6.5 Simplifying Algebraic Expressions Using Operations and their Properties, TIG pp. 325a-332a (7.EE.1, 7.EE.2) [1 day]

Student Assignments, SA pp. 117-119

Resources

Standards & Benchmarks

different forms in a problem context can shed light on the problem and how the quantities in it are related.

7.EE Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

- 7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.
- 7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
- 7.EE.4a Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.

Module 3 Assessment and Reteach

(Week 16, 1
Week)

Text Support

*Chapter Summary (possible study guide),
TIG pp. 333-337*

Assessment / Performance Task [1 day]

CHAPTER 7 (PART 1): SOLVING EQUATIONS AND INEQUALITIES (5 days)

**Lesson 7.1 Picture Algebra, TIG pp.
341a-346b** (7.EE.2, 7.EE.3, 7.EE.4.a) [1
day]

Student Assignments, SA pp. 121-122

**Lesson 7.2 Solving Equations, TIG pp.
347a-354a** (7.EE.3, 7.EE.4.a) [1 day]

Student Assignments, SA pp. 123-126

**Lesson 7.3 Solving Two-Step
Equations, TIG pp. 355a-362a** (7.EE.3,
7.EE.4.a) [1 day]

Student Assignments, SA pp. 127-129

**Lesson 7.4 Using Two-Step Equations,
TIG pp. 363a-372a** (7.EE.1, 7.EE.2,
7.EE.3, 7.EE.4.a) [2 days]

Student Assignments, SA pp. 131-136

(Chapter 7 will be completed after
Common Assessment #3, during the
Semester Review)

Module 3 Assessment and Reteach (5 days)

**Administer Common Assessment #3
Choose 3 days of lessons from the
following choices based on student
needs:**

Reteach

*Lesson 4.5 Skills Practice, SSP pp. 515-
520*

*Lesson 5.1 Skills Practice, SSP pp. 521-
528*

*Lesson 5.2 Skills Practice, SSP pp. 529-
532*

*Lesson 5.3 Skills Practice, SSP pp. 533-
539*

*Lesson 5.4 Skills Practice, SSP pp. 541-
549*

Lesson 5.5 Skills Practice, SSP pp. 551-

Resources

Universal Access Support

coming in 2014-15...

Carnegie Learning Online

coming in 2014-15...

Teaching Resources/Documents

coming in 2014-15...

Professional Development

coming in 2014-15...

Standards & Benchmarks

Text Support

Resources

553

Lesson 6.1 Skills Practice, SSP pp. 555-563

Lesson 6.2 Skills Practice, SSP pp. 565-568

Lesson 6.3 Skills Practice, SSP pp. 569-573

Lesson 6.4 Skills Practice, SSP pp. 575-584

Lesson 6.5 Skills Practice, SSP pp. 585-594

Lesson 7.1 Skills Practice, SSP pp. 595-599

Lesson 7.2 Skills Practice, SSP pp. 601-610

Lesson 7.3 Skills Practice, SSP pp. 611-622

Lesson 7.4 Skills Practice, SSP pp. 623-629

Extend

Lesson 4.5 Student Assignments, SA pp. 81-83

Lesson 5.1 Student Assignments, SA pp. 85-86

Lesson 5.2 Student Assignments, SA pp. 87-89

Lesson 5.3 Student Assignments, SA pp. 91-94

Lesson 5.4 Student Assignments, SA pp. 95-98

Lesson 5.5 Student Assignments, SA pp. 99-102

Lesson 6.1 Student Assignments, SA pp. 103-106

Lesson 6.2 Student Assignments, SA pp. 107-109

Lesson 6.3 Student Assignments, SA pp. 111-112

Lesson 6.4 Student Assignments, SA pp. 113-115

Lesson 6.5 Student Assignments, SA pp. 117-119

Lesson 7.1 Student Assignments, SA pp. 121-122

Lesson 7.2 Student Assignments, SA pp.

Standards & Benchmarks

1st Semester Review and Finals

(Week 17, 2 Weeks)

CA: CCCS: Mathematics, CA: Grade 7, Expressions & Equations

7.EE Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

- 7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.
- 7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
- 7.EE.4a Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.
- 7.EE.4b Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.

Module 4

(Week 19, 5 Weeks)

CA: CCCS: Mathematics, CA: Grade 7, Expressions & Equations

7.EE Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

- 7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational

Text Support

123-126

Lesson 7.3 Student Assignments, SA pp.

127-129

Lesson 7.4 Student Assignments, SA pp.

131-136

1ST SEMESTER REVIEW AND FINALS (9 days)

CHAPTER 7 (PART 2): SOLVING EQUATIONS AND INEQUALITIES (4 days)

MATHia Software [2 days - anywhere in this chapter]

Lesson 7.5 Solving & Graphing Inequalities in One Variable, TIG pp. 373a-378a (7.EE.3, 7.EE.4.a, 7.EE.4.b) [1 day]

Student Assignments, SA pp. 137-138

Chapter Summary (possible study guide), TIG pp. 379-384

Assessment / Performance Task [1 day]

1st Semester Final Exam Review [3-4 days]

Administer 1st Semester Final Exam [1 day]

MODULE 4 (24 days)

CHAPTER 8 : SOLVING PROBLEMS WITH EQUATIONS AND INEQUALITIES (10 days)

MATHia Software [2 days - anywhere in this chapter]

Lesson 8.1 Multiple Representations of Problem Situations, TIG pp. 387-394c

Resources

Materials Needed

Lesson 9.1 - Protractor, compass, ruler, straightedge

Lesson 9.2 - Protractor, compass, ruler, straightedge

Lesson 9.3 - Protractor, compass, ruler, straightedge

Lesson 10.1 - Protractor, compass,

Standards & Benchmarks

numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

- 7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
- 7.EE.4a Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.
- 7.EE.4b Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.

CA: CCCS: Mathematics, CA: Grade 7, Geometry

7.G Draw, construct, and describe geometrical figures and describe the relationships between them.

- 7.G.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.

7.G Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

- 7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.

Text Support

(7.EE.3, 7.EE.4.a) [1 day]

Student Assignments, SA pp. 139-143

Lesson 8.2 Using Two-Step Equations, TIG pp. 395a-402b (7.EE.4.a) [1 day]

Student Assignments, SA pp. 145-148

Lesson 8.3 Solving More Complicated Equations, TIG pp. 403a-416a (7.EE.3, 7.EE.4.a) [2 days]

Student Assignments, SA pp. 149-152

Lesson 8.4 Making Sense of Negative Solutions, TIG pp. 417a-424b (7.EE.3, 7.EE.4.a) [1 day]

Student Assignments, SA pp. 153-159

Lesson 8.5 Rate of Change, TIG pp. 425-434b (7.EE.3, 7.EE.4.a, 7.EE.4.b) [1 day]

Student Assignments, SA pp. 161-167

Lesson 8.6 Using Multiple Representations to Solve Problems, TIG pp. 435-446b (7.EE.3, 7.EE.4.a) [1 day]

Student Assignments, SA pp. 169-179

Chapter 8 Summary (possible study guide)

TIG pp. 447-456

Assessment/Performance Task [1 day]
CHAPTER 9: USING GEOMETRY (8 days)

MATHia Software [2 days - anywhere in this chapter]

Lesson 9.1 Introduction to Geometry and Geometric Constructions, TIG pp. 459a-468a (7.G.2) [1 day]

Student Assignments, SA pp. 181-184

Lesson 9.2 Measuring and Constructing Angles, TIG 469a-482a (7.G.2) [2 days]

Student Assignments, SA pp. 185-188

Lesson 9.3 Compliments, Supplements, Midpoints, Perpendiculars, and Perpendicular Bisectors, TIG pp. 483a-494a (7.G.2, 7.G.5) [2 days]

Chapter 9 Summary (possible study guide)

TIG pp. 495-500

Assessment/Performance Task [1 day]

CHAPTER 10: TRIANGLES (6 days)

MATHia Software [1 day - anywhere in

Resources

ruler, straightedge

Lesson 10.2 - Protractor, compass, ruler, straightedge

Lesson 10.3 - Protractor, compass, ruler, straightedge

Lesson 10.4 - Pieces of raw pasta, protractor, compass, ruler, straightedge

Universal Access Support

coming in 2014-15...

Carnegie Learning Online

coming in 2014-15...

Teaching Resources/Documents

coming in 2014-15...

Professional Development

coming in 2014-15...

Standards & Benchmarks

Text Support

Resources

this chapter]

Lesson 10.1 Triangle Sum Exterior Angle, and Exterior Angle Inequality Theorems, TIG pp. 503a-512b (7.G.2) [1 day]

Student Assignments, SA pp. 195-196

Lesson 10.2: Constructing Triangles, TIG pp. 513a-518 (7.G.2) [1 day]

Student Assignments, SA pp. 197-199

Lesson 10.3: Congruent Figures and Constructing Congruent Triangles, TIG pp. 519a-526 (7.G.2) [1 day]

Student Assignments, SA pp. 201-203

Lesson 10.4 Triangle Inequality Theorem, TIG pp. 527a-536a (7.G.2) [1 day]

Student Assignments, SA pp. 205-206

Chapter 10 Summary (possible study guide) TIG pp. 537-541

Assessment/Performance Task [1 day]

Module 4 Assessment and Reteach (5 days)

Administer Common Assessment #4 Choose 3-4 days of lessons from the following choices based on student needs:

Reteach

Lesson 8.1 Skills Practice, SSP pp. 637-646

Lesson 8.2 Skills Practice, SSP pp. 647-654

Lesson 8.3 Skills Practice, SSP pp. 655-665

Lesson 8.4 Skills Practice, SSP pp. 667-674

Lesson 8.5 Skills Practice, SSP pp. 675-684

Lesson 8.6 Skills Practice, SSP pp. 685-693

Lesson 9.1 Skills Practice, SSP pp. 695-704

Lesson 9.2 Skills Practice, SSP pp. 705-711

Lesson 9.3 Skills Practice, SSP pp. 713-

Module 4 Assessment and Reteach

(Week 24, 1
Week)

Universal Access Support

coming in 2014-15...

Carnegie Learning Online

coming in 2014-15...

Teaching Resources/Documents

coming in 2014-15...

Professional Development

coming in 2014-15...

Standards & Benchmarks

Text Support

Resources

724

Lesson 10.1 Skills Practice, SSP pp. 725-731

Lesson 10.2 Skills Practice, SSP pp. 733-738

Lesson 10.3 Skills Practice, SSP pp. 739-747

Lesson 10.4 Skills Practice, SSP pp. 749-754

Extend

Lesson 8.1 Student Assignments, SA pp. 139-143

Lesson 8.2 Student Assignments, SA pp. 145-148

Lesson 8.3 Student Assignments, SA pp. 149-152

Lesson 8.4 Student Assignments, SA pp. 153-159

Lesson 8.5 Student Assignments, SA pp. 161-167

Lesson 8.6 Student Assignments, SA pp. 169-179

Lesson 9.1 Student Assignments, SA pp. 181-184

Lesson 9.2 Student Assignments, SA pp. 185-188

Lesson 9.3 Student Assignments, SA pp. 189-194

Lesson 10.1 Student Assignments, SA pp. 195-196

Lesson 10.2 Student Assignments, SA pp. 197-199

Lesson 10.3 Student Assignments, SA pp. 201-203

Lesson 10.4 Student Assignments, SA pp. 205-206

Module 5

(Week 25, 5 Weeks)

CA: CCCS: Mathematics, CA: Grade 7, Geometry
7.G Draw construct, and describe geometrical figures and describe the relationships between them.

- 7.G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a

MODULE 5 (25 days)

CHAPTER 11: SCALE DRAWINGS AND SCALE FACTOR (8 days)

MATHia Software [2 days - anywhere in this chapter]

Lesson 11.1 Scale Drawings, Scale Models, and Scale Factors, TIG pp. 545a-552a (7.G.1) [1 day]

Materials Needed

Lesson 11.1 - Ruler

Lesson 11.2 - Ruler

Lesson 11.3 - Ruler

Lesson 11.4 - Ruler

Lesson 12.1 - Straightedge, ruler, compass

Lesson 12.2 - String, straightedge,

Standards & Benchmarks

- scale drawing at a different scale.
- 7.G.3 Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.
- 7.G Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.
- 7.G.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
 - 7.G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.
- CA: CCCS: Mathematics, CA: Grade 7, Statistics & Probability
- 7.SP Use random sampling to draw inferences about a population.
- 7.SP.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
 - 7.SP.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.

Text Support

Student Assignments, SA pp. 207-209
Lesson 11.2 Applications of Ratio, TIG pp. 553a-562 (7.G.1) [1 day]
Student Assignments, SA pp. 211-214
Lesson 11.3 Exploring Scale Drawings, TIG pp. 563a-576 (7.G.1) [2 days]
Student Assignments, SA pp. 215-217
Lesson 11.4 Creating Blueprints, TIG pp. 577a-580a (7.G.1) [1 day]
Student Assignments, SA pp. 219
Chapter Summary (possible study guide), TIG pp. 581-585
Assessment / Performance Task [1 day]
CHAPTER 12: CIRCLES (5 days)
MATHia Software [1 day - anywhere in this chapter]
Lesson 12.1 Circle, Radius, and Diameter, TIG pp. 589a-594a (7.G.4) [1 day]
Student Assignments, SA pp. 221-224
Lesson 12.2 Circumference of a Circle, TIG pp. 595a-604a (7.G.4) [1 day]
Student Assignments, SA pp. 225-228
Lesson 12.3 Area of a Circle, TIG pp. 605a-614 (7.G.4) [1 day]
Student Assignments, SA pp. 229-230
Lesson 12.4 Unknown Measurements, TIG pp. 615a-624 (7.G.4) [1 day]
Chapter Summary (possible study guide), TIG pp. 625-629
Assessment / Performance Task [1 day]
CHAPTER 13: SLICING THREE-DEMINSIONAL FIGURES (7 days)
MATHia Software [2 days - anywhere in this chapter]
Lesson 13.1 Slicing Through a Cube, TIG pp. 633a-646a (7.G.3) [1 day]
Student Assignments, SA pp. 237-239
Lesson 13.2 Slicing Through Right Rectangular Prisms, TIG pp. 647a-660 (7.G.3) [1 day]
Student Assignments, SA pp. 241-243
Lesson 13.3 Slicing Through Right Rectangular Pyramids, TIG pp. 661a-674 (7.G.3) [1 day]

Resources

ruler, compass
Lesson 13.1 - Clay, dental floss or thin wire, scissors, tape
Lesson 13.2 - Clay, dental floss or thin wire, scissors, tape
Lesson 13.3 - Clay, dental floss or thin wire, scissors, tape
Lesson 14.2 - Graphing calculator or computer-based random number generator
Universal Access Support coming in 2014-15...
Carnegie Learning Online coming in 2014-15...
Teaching Resources/Documents coming in 2014-15...
Professional Development coming in 2014-15...

Standards & Benchmarks

Text Support

Resources

Student Assignments, SA pp. 245-247

Lesson 13.4 Introduction to Volume and Surface Area, TIG pp. 675a-684a (7.G.6)

[1 day]

Student Assignments, SA pp. 249-250

Lesson 13.5 Applying Volume and Surface Area Formulas, TIG pp. 685a-690 (7.G.6)

[1 day]

Chapter Summary (possible study guide),

TIG pp. 691-694

Assessment / Performance Task [1 day]

CHAPTER 14 (Part 1): DATA

COLLECTION (3 days)

Lesson 14.1 Formulating Questions and Collecting Data, TIG pp. 697a-706a

(7.SP.1, 7.SP.2) [1 day]

Student Assignments, SA pp. 255-256

Lesson 14.2 Collecting Data Through Random Sampling, TIG pp. 707a-

718b(7.SP.1, 7.SP.2) [1 day]

Student Assignments, SA pp. 257-260

Lesson 14.3 Random Sampling, TIG pp.

719a-730b (7.SP.1, 7.SP.2) [1 day]

Student Assignments, SA pp. 261-266

MODULE 5 ASSESSMENT AND RETEACH (5 days)

Administer Common Assessment #5
Choose 3-4 days of lessons from the following choices based on student needs:

Reteach

Lesson 11.1 Skills Practice, SSP pp. 755-763

Lesson 11.2 Skills Practice, SSP pp. 765-772

Lesson 11.3 Skills Practice, SSP pp. 773-779

Lesson 11.4 Skills Practice, SSP pp. 781-787

Lesson 12.1 Skills Practice, SSP pp. 789-793

Lesson 12.2 Skills Practice, SSP pp. 795-801

Lesson 12.3 Skills Practice, SSP pp. 803-

Module 5 **Assessment** **and Reteach**

(Week 30, 1
Week)

Universal Access Support

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Carnegie Learning Online

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Teaching Resources/Documents

coming in 2014-15...

Professional Development

coming in 2014-15...

Standards & Benchmarks

Text Support

Resources

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Lesson 13.1 Skills Practice, SSP pp. 821-824

Lesson 13.2 Skills Practice, SSP pp. 825-829

Lesson 13.3 Skills Practice, SSP pp. 831-836

Lesson 13.4 Skills Practice, SSP pp. 837-844

Lesson 14.1 Skills Practice, SSP pp. 857-862

Lesson 14.2 Skills Practice, SSP pp. 863-868

Lesson 14.3 Skills Practice, SSP pp. 869-874

Extend

Lesson 11.1 Student Assignments, SA pp. 207-209

Lesson 11.2 Student Assignments, SA pp. 211-214

Lesson 11.3 Student Assignments, SA pp. 215-217

Lesson 11.4 Student Assignments, SA pp. 219

Lesson 12.1 Student Assignments, SA pp. 221-224

Lesson 12.2 Student Assignments, SA pp. 225-228

Lesson 12.3 Student Assignments, SA pp. 229-230

Lesson 13.1 Student Assignments, SA pp. 237-239

Lesson 13.2 Student Assignments, SA pp. 241-243

Lesson 13.3 Student Assignments, SA pp. 245-247

Lesson 13.4 Student Assignments, SA pp. 249-250

Lesson 14.1 Student Assignments, SA pp. 255-256

Lesson 14.2 Student Assignments, SA pp. 257-260

Lesson 14.3 Student Assignments, SA pp. 261-266

Module 6
(Week 31, 6 Weeks)

Standards & Benchmarks

CA: CCCS: Mathematics, CA: Grade 7, Statistics & Probability
7.SP Use random sampling to draw inferences about a population.

- 7.SP.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
- 7.SP.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.

7.SP Draw informal comparative inferences about two populations.

- 7.SP.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.
- 7.SP.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.

7.SP Investigate chance processes and develop, use, and evaluate probability models.

- 7.SP.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
- 7.SP.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and

Text Support

MODULE 6 (29 days)

CHAPTER 14 (PART 2): DATA COLLECTION (6 days)

MATHia Software [2 days - anywhere in this chapter]

Lesson 14.4 Using Samples, Centers, and Spreads to Describe Data, TIG pp. 731a-750b (7.SP.1, 7.SP.2, 7.SP.4) [2 days]

Student Assignments, SA pp. 267-269

Lesson 14.5 Using Sample Size, TIG pp. 751a-764 (7.SP.1, 7.SP.2) [1 day]

Student Assignments, SA pp. 271-276

Chapter Summary (possible study guide), TIG pp. 765-772

Assessment / Performance Task [1 day]

CHAPTER 15: COMPARING POPULATIONS (5 days)

MATHia Software [1 day - anywhere in this chapter]

Lesson 15.1 Comparing Measures of Center of Two Populations, TIG pp. 775a-784b (7.SP.3, 7.SP.4) [1 day]

Student Assignments, SA pp. 277-281

Lesson 15.2 Comparing Measures of Center of Two Populations, TIG pp. 785a-798b (7.SP.2, 7.SP.3, 7.SP.4) [1 day]

Student Assignments, SA pp. 283-288

Lesson 15.3 Drawing Conclusions About Two Populations, TIG pp. 799a-808b (7.SP.2, 7.SP.3, 7.SP.4) [1 day]

Student Assignments, SA pp. 289-292

Chapter Summary (possible study guide), TIG pp. 809-826

Assessment / Performance Task [1 day]

CHAPTER 16: INTRODUCTION TO PROBABILITY (10 days)

MATHia Software [2 days - anywhere in this chapter]

Lesson 16.1 Defining and Representing Probability, TIG pp. 829a-838b (7.SP.5) [1 day]

Student Assignments, SA pp. 293-298

Lesson 16.2 Determining Experimental

Resources

Materials Needed

Lesson 14.4 - Computer-based box-and-whisker plot program, graphing calculator or computer-based random number generator

Lesson 16.1 - dice

Lesson 16.2 - Cups, paper clips, dice

Lesson 16.3 - Dice, coins or two-color counters

Lesson 16.4 - Coin or two-color counter, paper clip

Lesson 16.5 - Spreadsheet, random number generator or graphing calculator with probability application

Lesson 17.1 - None

Lesson 17.2 - coins or two-color counters, 5-sided spinner

Lesson 17.3 - None

Lesson 17.4 - None

Universal Access Support

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Teaching Resources/Documents

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Professional Development

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Standards & Benchmarks

predict the approximate relative frequency given the probability.

- 7.SP.7 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
- 7.SP.7a Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.
- 7.SP.7b Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.
- 7.SP.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
8a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.
- 7.SP.8b Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.
- 7.SP.8c Design and use a simulation to generate frequencies for compound events.

Text Support

Probability, TIG pp. 839a-850b (7.SP.5, 7.SP.6, 7.SP.7.a, 7.SP.7.b) [2 days]

Student Assignments, SA pp. 299-302

Lesson 16.3 Determining Theoretical Probability, TIG pp. 851a-860c (7.SP.5, 7.SP.6, 7.SP.7.a, 7.SP.7.b) [1 day]

Student Assignments, SA pp. 303-306

Lesson 16.4 Simulating Experiments, TIG pp. 861a-870a (7.SP.5, 7.SP.6, 7.SP.7.a, 7.SP.7.b) [1 day]

Student Assignments, SA pp. 307-309

Lesson 16.5 Using Technology for Simulations, TIG pp. 871a-896a (7.SP.6, 7.SP.7.a, 7.SP.7.b) [2 days]

Student Assignments, SA pp. 311-314

Chapter Summary (possible study guide), TIG pp. 897-906

Assessment / Performance Task [1 day]

CHAPTER 17: PROBABILITY OF COMPOUND EVENTS (6 days)

MATHia Software [1 day - anywhere in this chapter]

Lesson 17.1 Using Models For Probability, TIG pp. 909a-916b (7.SP.7.a, 7.SP.7.b) [1 day]

Student Assignments, SA pp. 315-318

Lesson 17.2 Creating and Using Probability Models, TIG pp. 917a-926a (7.SP.7.a, 7.SP.7.b, 7.SP.8.a, 7.SP.8.b) [1 day]

Student Assignments, SA pp. 319-323

Lesson 17.3 Determining Compound Probability, TIG pp. 927a-938 (7.SP.7.a, 7.SP.7.b, 7.SP.8.a, 7.SP.8.b) [1 day]

Student Assignments, SA pp. 325-327

Lesson 17.4 Simulating Probability of Compound Events, TIG pp. 939a-947b (7.SP.8.c) [1 day]

Student Assignments, SA pp. 329-333

Chapter Summary (possible study guide), TIG pp. 949-953

Assessment / Performance Task [1 day]

Resources

Standards & Benchmarks

Finals

(Week 37, 2 Weeks)

Text Support

Administer SBAC Assessment [5 days]

2nd Semester Final Exam Review [2 days]

Administer 2nd Semester Final Exam [1 day]

Resources

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