MS Exemplar Units and Lessons for English Language Arts and Mathematics

Curriculum Coordinator's Meeting

February 21, 2017

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State Board of Education Goals

1. **All Students Proficient and Showing Growth in All Assessed Areas**
2. **Every Student Graduates From High School and is Ready for College and Career**
3. Every Child Has Access to a High-Quality Early Childhood Program
4. **Every School Has Effective Teachers and Leaders**
5. Every Community Effectively Using a World-Class Data System to Improve Student Outcomes
6. Every School and District is Rated "C" or Higher

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Effective Teaching and Parent Engagement Grant

W.K. Kellogg Foundation awarded $500,000 to MDE

Date: May 2016

Purpose: Create instructional trainings and resources for parents and teachers to improve implementation of the Mississippi College and Career Readiness Standards for English Language Arts and Mathematics

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Exemplar Unit Timeline

Exemplar Unit Timeline	
Summer 2016	60 educators met to develop 24 Exemplar Units for PK- 8 in English Language Arts and Mathematics, Algebra I, Foundations of Algebra, English I and English II
Fall 2016	• Exemplar units were vetted through PCG, an Education Public Consulting Group • Units were edited at the advice of PCG's feedback
February – March 2017	• Parent Night Tool Kits developed • Parent Night Training Modules presented to districts
Summer 2017 and School Year 2017-2018	Train MS teachers on Exemplar Units and Parent Night Modules

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Exemplar Unit and Lesson Cover Page

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MISSISSIPPI
EXEMPLAR
Units & Lessons
MATHEMATICS
Grade 7

W.K. KELLOGG FOUNDATION

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Key Resources within the Exemplar Units

Focus Standards
Unit Overview
Lesson Plans
- Anticipatory Set
- Activities
- Teacher Notes
- Instructional Supports
- Formative Assessments

Performance Task and Rubric
Student Handouts with Teacher Key

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Format of the Exemplar Units

Grade Level	Unit Title	Duration
7	Ratios and Proportions	10 days

Mississippi College- and Career-Readiness Standards for Mathematics	Standards for Mathematical Practice
Focus: **7.RP.2** Recognize and represent proportional relationships between quantities. **a.** 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. **b.** Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. **c.** Represent proportional relationships by equations. For example, if total cost, *t*, is proportional to the number, *n*, of items purchased at a constant price, *p*, the relationship between the total cost and the number of items can be expressed as $t = pn$. **d.** 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. **Additional:** **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. *For example, if a person walks $1/2$ mile in each $1/4$ hour, compute the unit rate as the complex fraction $1/2/1/4$ miles per hour, equivalently 2 miles per hour.*	**SMP.1** Make sense of problems and persevere in solving them. **SMP.2** Reason abstractly and quantitatively. **SMP.3** Construct viable arguments and critique the reasoning of others. **SMP.4** Model with mathematics. **SMP.5** Use appropriate tools and manipulatives strategically. **SMP.6** Attend to precision. **SMP.7** Look for and make use of structure. **SMP.8** Look for and express regularity in repeated reasoning.

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Format of the Exemplar Unit

Unit Overview

Throughout this unit, students will expand their understanding of ratios. A major focus will be placed on the exploration of the characteristics of proportionality, specifically the academic vocabulary and connecting prior understanding. As students interpret tables, graphs, equations, diagrams, and verbal descriptions, they will discover multiple methods for finding the constant of proportionality. Students will write equations and solve for unknown variables and as a result of the instructional activities in this unit, they will develop a strong understanding of interpreting the different representations and solving problems centered around these representations.

Essential Questions:

- How are proportional relationships used to solve real-world and mathematical problems?
- How is the constant of proportionality shown in multiple representations of proportional relationships?

Lesson Tasks

Lesson 1: Tables as Tools
Students will activate prior knowledge on ratios and proportions. Students will use tables to solve proportions and begin to build vocabulary for the unit.
Lesson 2: Proportionality in a Table
Students will determine whether two quantities are in a proportional relationship by identifying equivalent ratios in a table. Students will identify the constant of proportionality (unit rate) in tables and verbal descriptions of proportional relationships.
Lesson 3: Comparing Tables and Graphs
Students will discover what makes two quantities proportional. They will also begin to recognize proportional relationships on tables and graphs.
Lesson 4: Multiple Representations
Students create a proportional scenario and create different representations of the situation. Students will also complete the Performance Task.
Lesson 5: Solving Proportional Relationships
Students will work collaboratively to solve problems using equivalent ratios. Students will strengthen their understanding of multiple strategies, including using linear graphs.
Lesson 6: Final Assessment and Performance Task
Students will complete their Graffiti Wall and final assessment on representing proportional relationships

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Format of the Exemplar Unit

Performance/Culminating Task
Pump It Up! The Performance Task connects unit rate and proportionality to a real-world application of finding heart rate. For the Pump It Up activity, students calculate their heart rate after completing various physical activities. Students will analyze their data using tables, graphs, and equations as well as the heart rates of others. After, examining the data they will apply reasoning when responding to questions using the multiple representations as they pertain to unit rate and proportionality. **Standard(s) Assessed:** 7.RP.2a, 7.RP.2b, 7.RP.2c, 7.RP.2d

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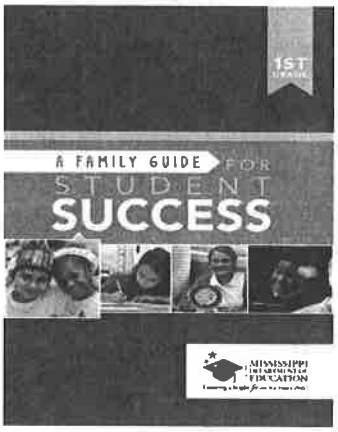
Parent Resources

Parent Modules are being developed, modeled, and disseminated to local school districts and schools

Parent Instructional Modules focused on the Family Guide for Student Success
Training Tool Kit to consist of materials, such as: training guide, PowerPoint, hands on material, and activities utilizing everyday home items, etc.
District and school training on implementation of the modules in March 2017



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Helping Teachers Effectively Implement the Mississippi Exemplar Units and Lessons

Session Goals

At the conclusion of this training, participants will

1. understand the format of the Mississippi Exemplar Units and Lessons.
2. understand the relationship between an exemplar unit and the domains of the Teacher Growth Rubric within the Professional Growth System.
3. understand potential misconceptions and problems during implementation of Mississippi Exemplar Units and Lessons.
4. develop a plan to help teachers implement content-specific instructional shifts and high-quality, content-specific instructional practices within the exemplar units.

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Understanding the ELA and Math Format of the Mississippi Exemplar Units and Lessons

Format Analysis

1. Scan through the units and analyze the format.
2. As you scan, text code and annotate using the following key:

! - Something that excites you

 - Initial ideas for implementation support for teachers

☹ - Initial concerns

? - Questions you have or your teachers may have

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Meeting Session Goal 1

1. Share your excitement, questions, concerns, or ideas for implementation **about the format** with your table group.
2. Share your excitement, questions, concerns, or ideas for implementation **about the format** with the entire group.

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Understanding Content-Specific Instructional Practices in an Exemplar Unit

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Effective Content-Specific Instructional Practices

equip
Educators Evaluating Quality Instructional Products

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MISSISSIPPI EDUCATOR & ADMINISTRATOR
PROFESSIONAL GROWTH SYSTEM

Evidence of Exemplar Qualities Sheet

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Purpose of the System

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PROFESSIONAL GROWTH SYSTEM

The Mississippi Educator and Administrator Professional Growth System is designed to improve student achievement by providing teachers and administrators with feedback to inform continuous improvement.

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Important Note

The TG rubric is **NOT** intended to be an evaluation tool for exemplar units. The rubric will serve as guide for our discussions today by aligning the examples within the exemplar unit to the parts of the rubric. Our goal is that you leave today

- understanding how to make informed instructional decisions concerning instructional units and
- understanding how these concepts fit together with the new observation and feedback system.

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Domains of the Teacher Growth Rubric

Domain I: Lesson Design

Domain II: Student Understanding

Domain III: Culture and Learning Environment

Domain IV: Professional Responsibilities

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Standards

Domain I
1. Lessons are aligned to standards and represent a coherent sequence of learning
2. Lessons have high levels of learning for all students

Domain II
3. Assists students in taking responsibility for learning and monitors student learning
4. Provides multiple ways for student to make meaning of content

Domain III
5. Manages a learning-focused classroom community
6. Manages classroom space, time, and resources (including technology when appropriate) effectively for student learning
7. Creates and maintains a classroom of respect for all students

Domain IV
8. Engages in professional learning
9. Establishes and maintains effective communication with families/guardians

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Meeting Session Goal 2

Think-Pair-Share:
In your own words, explain the relationship between an exemplar unit and the domains of the Teacher Growth Rubric within the Professional Growth System.

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Overview of the 1st Grade ELA Exemplar Unit

Presidents: Exploring Text Features, Key Details, and Main Topics in Informational Texts

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Meeting Session Goal 3

Ask yourself:

- In what aspects/areas will my teachers need more support?
- What are some possible misconceptions that I must help teachers to avoid developing?
- How will I help teachers successfully implement these exemplar units and lessons?

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Potential Misconceptions

1. This is the only way to write an exemplar unit and lessons.
2. These units must be implemented exactly how they are written.
   - 90-minute literacy block
   - Various class-lengths
   - Student-specific needs and readiness
   - Appropriate scope and sequence

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Potential Problems

1. Some teachers may not understand certain instructional practices, such as vocabulary instruction.
2. Some teachers may not understand how to integrate exemplar units with other state/district/school-wide initiatives or resources.
3. Some teachers may find it difficult to blend the Mississippi Exemplar Units with their current pacing guides, programs, or initiatives.

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Domain I – Standard 1

Domain I: Lesson Design (evidence may include lesson plans, classroom observations, and pre- and post-observation conferences)

1. Lessons are aligned to standards and represent a coherent sequence of learning

Lessons:

4

Include student learning outcomes and instructional activities that

- are fully aligned to current Mississippi College and Career Ready Standards or Framework
- are part of a coherent and focused sequence of learning with meaningful connections made to previous and future learning
- reflect collaboration with other school staff within and across disciplines to enrich learning

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Domain I- Standard 2

Domain I: Lesson Design (evidence may include lesson plans, classroom observations, and pre- and post-observation conferences)

2. Lessons have high levels of learning for all students

Lessons:

4

Provide assignments and activities that contain the following components:

- appropriate scaffolding that effectively builds student understanding
- ample evidence that the teacher knows each student's level and tracks each student's progress toward mastery
- differentiation based on students' abilities and learning styles
- student-centered learning whenever appropriate
- relevant connections to students' prior experiences[1] or learning opportunities for students to choose challenging tasks and instructional materials

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Evidence of Exemplar Qualities

Domain I: Lesson Designs • **Lessons are aligned to standards and represent a coherent sequence of learning.** • **Lesson have high levels of learning for all students** (Note: Most evidence of Domain I can be seen in lessons/units. Some evidence may be exhibited during instruction or pre-/post-conferences.)	**Evidence from the Unit/Lesson**
Targets a set of grade-level MS CCRS/Literacy standards	

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Finding Evidence

Grade Level	Unit Title	Duration
1	Presidents: Exploring Text Features, Key Details, and Main Topics in Informational Texts	20 days

Mississippi College- and Career-Readiness Standards for English Language Arts	Unit Overview and Essential Question(s)
Reading Standards **Focus:** **RI.1.2** Identify the main topic and retell key details of a text. **RI.1.5** Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text. **RI.1.7** Use the illustrations and details in a text to describe its key ideas. **Additional:** **RL.1.1** Ask and answer questions about key details in a text. **RL.1.3** Describe characters, settings, and major events in a story, using key details. **RL.1.5** Explain major differences between books that tell stories and books that give information, drawing on a wide reading of a range of text types. **RL.1.7** Use illustrations and details in a story to describe its characters, setting, or events. **RI.1.1** Ask and answer questions about key details in a text. **RI.1.6** Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.	The focus of this unit is on reading and comprehending informational texts and writing an informational text. Students will explore concepts of text features and illustrations to aid comprehension. Students will read and listen to multiple texts and evaluate them with the teacher to understand how informational texts are organized and written. Next, after listening to and reading multiple texts, students identify main topics and key details with the teacher. After learning how to identify main topics, students will co-construct an informational article with the teacher. Finally, students individually will read (or listen to) informational texts, take notes, organize, and write an article. At least one text feature and illustration to the informational text will be added. Student-created informational texts will be published in the classroom magazine and placed in the classroom library.

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1st Grade Unit

Grade 1

Reading Informational Text	
Key Ideas and Details	
RI.1.1	Ask and answer questions about key details in a text.
RI.1.2	Identify the main topic and retell key details of a text.
RI.1.3	Describe the connection between two individuals, events, ideas, or pieces of information in a text.
Craft and Structure	
RI.1.4	Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
RI.1.5	Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.
RI.1.6	Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
Integration of Knowledge and Ideas	
RI.1.7	Use the illustrations and details in a text to describe its key ideas.
RI.1.8	Identify the reasons an author gives to support points in a text.
RI.1.9	Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).
Range of Reading and Level of Text Complexity	
RI.1.10	With prompting and support, read informational texts appropriately complex for grade 1.

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Finding Evidence

Lesson 1: Using Key Details and Illustrations to Describe Characters

Focus Standard: RL.1.3, RL.1.7

Additional Standards: RL.1.1, SL.1.1, SL.1.2, L.1.4a, L.1.4.b

Estimated Time: Multiple Days

Text(s): *Grace for President* by Kelly DiPucchio

Resources and Materials:

- Handout 1.1: Character Description Sentence Starter
- Handout 1.2: Character Drawing
- Reading Response Journals for each student (e.g., spiral notebook, teacher-made journal from stapled paper)
- Key Details Sentence Starter
- "Hail to the Chief" background music
- Props to be used to represent a president and other presidential topics/actions
- Map of the United States
- A picture of the District of Columbia in the context of the whole United States
- A close-up picture of the District of Columbia
- List of Adjectives

Lesson Target(s):

- Students show understanding through discussions and reflective writing of the following concepts:
  - Details (such as descriptions of characters and actions) are pieces of information that help the reader understand what they are reading.
  - Details and illustrations help the reader create a character description.
  - Effective readers identify the details in a story to help them understand the lesson of the text.
- Students use key details and inferences from illustrations to create a written character description.

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Finding Evidence

Performance/Culminating Task
Students will take on the role of a reporter for *Scholastic News*, and this month the magazine is doing a special article on past presidents. As magazine writers, students will research a president of their choice and write facts about the president. Then, they will organize facts into various categories and write a magazine article that includes a main topic sentence followed by key details, a conclusion, key vocabulary from the text, and an illustration (e.g., photographs, diagrams, charts, or graphs) that supports the main topic. Writers will also include another text feature that provides different information from their text to make their article more interesting. Finally, students will publish their article and share with fellow magazine writers. **Goal:** Students will choose a president that interests them. The goal is for each student to write an article on a president that could be compiled into the class magazine. The students will compile their articles into one imaginary edition of *Scholastic News* and will be placed in the classroom library at the project's end. **Role:** Students will take on the role of magazine writers for *Scholastic News*. **Audience:** Their audience will be their first grade class and readers of the magazine. **Scenario:** Students will act as magazine writers for *Scholastic News* and are trying to have their articles included in an upcoming edition. **Product:** Students will create an informational article about a past president. **Standards Assessed:** RI.1.2, RI.1.5, RI.1.7, W.1.2

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Scaffolding Documents

Mississippi College- and Career-Readiness Standards Scaffolding Documents

The primary purpose of the *2016 Mississippi College- and Career-Readiness Standards Scaffolding Documents* is to provide teachers with a deeper understanding of the Standards as they plan for classroom instruction. Based on the *2016 Mississippi College- and Career-Readiness Standards*, these documents provide a close analysis of the requirements for student mastery. Because of the rigor and depth of the Standards, scaffolding instruction to meet the needs of all learners is essential to individual success. These documents will aid teachers' understanding of how to teach the Standards through a natural progression of student mastery.

English Language Arts Scaffolding Document	**Mathematics Scaffolding Document**
Introduction	Introduction
Kindergarten	Kindergarten
First Grade	First Grade
Second Grade	Second Grade
Third Grade	Third Grade
Fourth Grade	Fourth Grade
Fifth Grade	Fifth Grade

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ELA Work Session

1. Locate the pink number on your table and find the corresponding lesson in the 1st grade unit.
2. Focus on Domain I with your table group.
3. Annotate your lesson and discuss which parts of the lesson are of exemplar quality.
4. Record your findings on the **Evidence of Exemplar Qualities** sheet based upon your discussion and determinations at your table.

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Meeting Session Goal 4

Think-Pair-Share:
What will you include in your plan to help teachers effectively implement ELA-specific instructional shifts and high-quality, ELA-specific instructional practices within the exemplar units?

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Overview of the 7th Grade Math Exemplar Unit

Ratios and Proportions

Meeting Session Goal 3

Ask yourself:

- In what aspects/areas will my teachers need more support?
- What are some possible misconceptions that I must help teachers to avoid developing?
- How will I help teachers successfully implement these exemplar units and lessons?

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Potential Misconceptions

1. This is the only way to write an exemplar unit and lessons.
2. These units must be implemented exactly how they are written.

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Potential Problems

1. Some teachers may not understand certain instructional practices, such as vocabulary instruction.
2. Some teachers may not understand how to integrate exemplar units with other state/district/school-wide initiatives or resources.
3. Some teachers may find it difficult to blend the Mississippi Exemplar Units with their current pacing guides, programs, or initiatives.

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Domain I – Standard 1

Domain I: Lesson Design (evidence may include lesson plans, classroom observations, and pre- and post-observation conferences)

1. Lessons are aligned to standards and represent a coherent sequence of learning

Lessons:

4

Include student learning outcomes and instructional activities that

- are fully aligned to current Mississippi College and Career Ready Standards or Framework
- are part of a coherent and focused sequence of learning with meaningful connections made to previous and future learning
- reflect collaboration with other school staff within and across disciplines to enrich learning

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Domain I- Standard 2

Domain I: Lesson Design (evidence may include lesson plans, classroom observations, and pre- and post-observation conferences)

2. Lessons have high levels of learning for all students

Lessons:

4

Provide assignments and activities that contain the following components:

- appropriate scaffolding that effectively builds student understanding
- ample evidence that the teacher knows each student's level and tracks each student's progress toward mastery
- differentiation based on students' abilities and learning styles
- student-centered learning whenever appropriate
- relevant connections to students' prior experiences[1] or learning opportunities for students to choose challenging tasks and instructional materials

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Math Work Session

1. Locate the green number on your table and find the corresponding lesson in the 7th grade unit.
2. Focus on Domain I with your table group.
3. Annotate your lesson and discuss which parts of the lesson are of exemplar quality.
4. Record your findings on the **Evidence of Exemplar Qualities** sheet based upon your discussion and determinations at your table.

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Evidence of Exemplar Qualities

Domain I: Lesson Designs • **Lessons are aligned to standards and represent a coherent sequence of learning.** • **Lesson have high levels of learning for all students** (Note: Most evidence of Domain I can be seen in lessons/units. Some evidence may be exhibited during instruction or pre-/post-conferences.)	**Evidence from the Unit/Lesson**
Targets a set of grade-level MS CCRS math standards: • Content Standards are taught to the full depth • Standards for Mathematical Practice are incorporated and central to the lessons	

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Evidence of Exemplar

- What are the standards addressed in the unit?
- Which SMPs are addressed in the unit?
- How does including the SMPs in the lesson activities help teachers improve instruction?

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Finding Evidence

Grade Level	Unit Title	Duration
7	Ratios and Proportions	10 days

Mississippi College- and Career-Readiness Standards for Mathematics	Standards for Mathematical Practice
Focus: **7.RP.2** Recognize and represent proportional relationships between quantities. **a.** 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. **b.** Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. **c.** Represent proportional relationships by equations. For example, if total cost, *t*, is proportional to the number, *n*, of items purchased at a constant price, *p*, the relationship between the total cost and the number of items can be expressed as $t = pn$. **d.** 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. **Additional:** **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. *For example, if a person walks $1/2$ mile in each $1/4$ hour, compute the unit rate as the complex fraction $1/2/1/4$ miles per hour, equivalently 2 miles per hour.*	**SMP.1** Make sense of problems and persevere in solving them. **SMP.2** Reason abstractly and quantitatively. **SMP.3** Construct viable arguments and critique the reasoning of others. **SMP.4** Model with mathematics. **SMP.5** Use appropriate tools and manipulatives strategically. **SMP.6** Attend to precision. **SMP.7** Look for and make use of structure. **SMP.8** Look for and express regularity in repeated reasoning.

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Finding Evidence

Lesson 1: Table as a Tool

Focus Standard(s): 7.RP.2a, 7.RP.2b

Additional Standard(s): 7.RP.1

Standards for Mathematical Practice: SMP.1, SMP.3, SMP.8

Estimated Time: 50 minutes

Resources and Materials:

- Butcher Paper
- Markers
- Handout 1.1: Graffiti Wall
- Handout 1.2: Table as a Tool
- Unit Rates Video: https://www.youtube.com/watch?v=SpZQFKU5P70

Lesson Target(s):

- Students will activate prior knowledge on ratios and proportions.
- Students will use tables to solve proportions and begin to build vocabulary for the unit.

Guiding Question(s):

- What tools can be used to help find unit rate?
- How is unit rate used to determine proportionality?

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MS-CCR Standards in a 7th Grade Exemplar Unit

Ratios and Proportional Relationships

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

7.RP.2	Recognize and represent proportional relationships between quantities. a. 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. b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number n of items can be expressed as t = pn.* d. 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.

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Scaffolding Documents

Mississippi College- and Career-Readiness Standards Scaffolding Documents

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English Language Arts Scaffolding Document	**Mathematics Scaffolding Document**
Introduction	Introduction
Kindergarten	Kindergarten
First Grade	First Grade
Second Grade	Second Grade
Third Grade	Third Grade
Fourth Grade	Fourth Grade
Fifth Grade	Fifth Grade

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Finding Evidence

Activity 2: Table as a Tool
Distribute **Handout 1.2: Table as a Tool.** Display the first table on the board. Instruct students to independently complete the table. Once completed, students compare answers and discuss methods used to solve (SMP.3).

Note: The table values are not in any order and will require some perseverance (SMP.1). It is normal for students to use a Guess and Check method. If a student is using this method, suggest exploring by looking for a pattern (SMP.8).

Select students to come to the board and complete the table. Lead a whole group discussion on different methods and reasoning.

- ✓ Actively monitor students and provide scaffolding support by asking the following questions:
  - How did you find the missing value?
  - Did you use the same method for every value?
  - Can you show it another way?
  - How does this relate to unit rate?
  - What is the unit rate?
  - Could we create a situation to represent this table?
  - Is the x-axis represented on this table?
  - Is the y-axis represented on the table?

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SMP in a 7th Grade Exemplar Unit

SMP	Students	Teachers
1. **Make sense of problems and persevere in solving them**	☐ Understand the meaning of the problem and look for entry points to its solution ☐ Analyze information (givens, constrains, relationships, goals) ☐ Make conjectures and plan a solution pathway ☐ Monitor and evaluate the progress and change course as necessary ☐ Check answers to problems and ask, "Does this make sense?" Comments:	☐ Involve students in rich problem-based tasks that encourage them to persevere in order to reach a solution ☐ Provide opportunities for students to solve problems that have multiple solutions ☐ Encourage students to represent their thinking while problem solving Comments:
3. **Construct viable arguments and critique the reasoning of others**	☐ Use definitions and previously established causes/effects (results) in constructing arguments ☐ Make conjectures and use counterexamples to build a logical progression of statements to explore and support ideas ☐ Communicate and defend mathematical reasoning using objects, drawings, diagrams, and/or actions ☐ Listen to or read the arguments of others ☐ Decide if the arguments of others make sense and ask probing questions to clarify or improve the arguments Comments:	☐ Provide and orchestrate opportunities for students to listen to the solution strategies of others, discuss alternative solutions, and defend their ideas ☐ Ask higher-order questions which encourage students to defend their ideas ☐ Provide prompts that encourage students to think critically about the mathematics they are learning Comments:

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Evidence of Exemplar Qualities

Domain I: Lesson Designs • **Lessons are aligned to standards and represent a coherent sequence of learning.** • **Lesson have high levels of learning for all students** (Note: Most evidence of Domain I can be seen in lessons/units. Some evidence may be exhibited during instruction or pre-/post-conferences.)	**Evidence from the Unit/Lesson**
Provides a balance between mathematical procedures with deeper conceptual understanding: • Opportunities to explore mathematics using tools and manipulatives are provided • Allow students to make connections between patterns and structures observed • Demonstrates a gradual release of supports as students move toward fluency	

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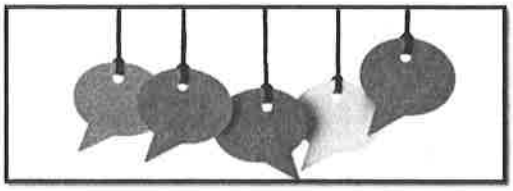
Evidence of Exemplar



- What evidence is present for SMP.5?
- What evidence is present for SMP.7?
- What evidence is present for a gradual release?

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Finding Evidence

Lesson Tasks
Lesson 1: Tables as Tools Students will activate prior knowledge on ratios and proportions. Students will use tables to solve proportions and begin to build vocabulary for the unit. **Lesson 2: Proportionality in a Table** Students will determine whether two quantities are in a proportional relationship by identifying equivalent ratios in a table. Students will identify the constant of proportionality (unit rate) in tables and verbal descriptions of proportional relationships. **Lesson 3: Comparing Tables and Graphs** Students will discover what makes two quantities proportional. They will also begin to recognize proportional relationships in tables and graphs. **Lesson 4: Multiple Representations** Students create a proportional scenario and create different representations of the situation. Students will complete Reynaldo's Trip to reinforce the ability to compare multiple representations of proportional relationships. **Lesson 5: Solving Proportional Relationships** Students will work collaboratively to solve problems using equivalent ratios. Students will strengthen their understanding of multiple strategies, including the use of linear graphs. **Lesson 6: Performance Task** Students will complete their Graffiti Wall and work with a partner on the Pump It Up performance task, which involves monitoring heart rate and comparing unit rates after performing various exercises.

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Exploring Mathematics Using Tools in an Exemplar Unit

Tools available to students when exploring mathematics include:

- Pencil and (graph) paper
- Concrete model
- Ruler
- Calculator
- Pictorial Representation
- Graph
- Table
- Equation
- Pattern
- Model

What tools did this unit use to help students better understand the MS-CCRS?

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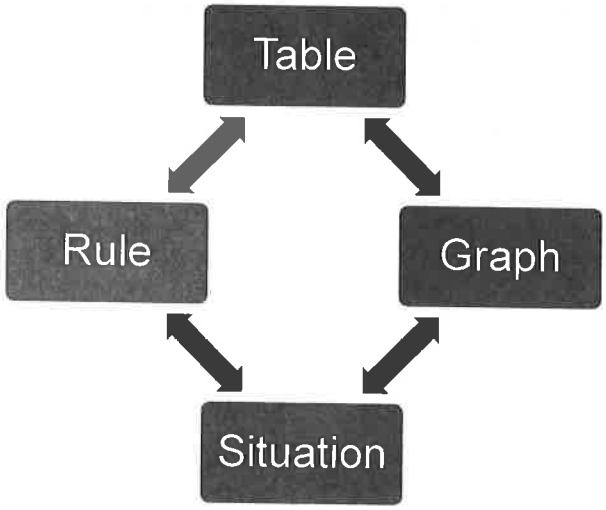
Making Connections in an Exemplar Unit

Were students provided the opportunity to make connections between multiple representations of functions in this unit?



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Meeting Session Goal 4

Think-Pair-Share:
What will you include in your plan to help teachers effectively implement math-specific instructional shifts and high-quality, math-specific instructional practices within the exemplar units?

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Reflection

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Reflection: Fortune Cookie

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Reflection: Fortune Cookie

1. Hand the envelope to the person with the most experience in education.
2. Without looking, select one question from the envelope.
3. Read the question aloud to the table and share your response.
4. Pass the envelope to the person on your left without replacing your question.
5. Continue the process, until everyone has had a turn.

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Session Goals Reflection

Revisit the session goals at the beginning of the presentation. Ask yourself:

- How well did I accomplish each goal?
- Is there a goal with which I need more assistance?
- What do I need to keep in mind to avoid potential problems and misconceptions?
- What resources do I need to do this?
- How will my support for teachers look?

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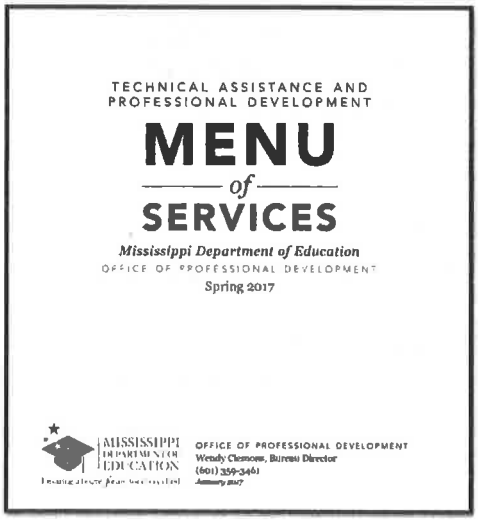
Menu of Services



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ELA Contacts

Dana R. Danis, Ed.S
Content Specialist
ddanis@mdek12.org

Ashley Kazery, Ed.S
Professional Development Coordinator
ashley.kazery@mdek12.org

Felicia Jackson-Stewart, Ed.D
Professional Development Coordinator
fstewartjackson@mdek12.org

Barbara Trivelli-Bowen, M.Ed, NBCT
Professional Development Coordinator
btbowen@mdek12.org

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Math Contacts

Devin Boone, Ed.S
Special Education Professional Development Coordinator
devin.boone@mdek12.org

Elise Brown, M. Ed
Professional Development Coordinator
elise.brown@mdek12.org

Celeste Maugh, M. Ed
Professional Development Coordinator
celeste.maugh@mdek12.org

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Professional Development Contacts

Wendy Clemons, Ed.S
Bureau Director
Wclemons@mdek12.org

Stacey Donaldson, Ph.D
National Board Project Director
stdonaldson@mdek12.org

Tina Sellers
Special Projects Officer
Tsellers@mdek12.org

Kristina Livingston, M.Ed, NBCT
Lead Professional Development Coordinator
klivingston@mdek12.org

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