



Unit Map 2013-2014

Green Brook Township School District

/ **Math Curriculum 5 (D)** / **Grade 5 (District Middle Curriculum)**

Tuesday, August 27, 2013, 1:36PM

Green Brook Township
Public Schools

Unit: Unit 1: Understanding the Place Value System (Week 1, 6 Weeks) 📅 📄

New Jersey Core Curriculum Standards

CommonCore: Mathematics, CommonCore: Grade 5, Mathematical Practice

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.

- 1. Make sense of problems and persevere in solving them.

CommonCore: Mathematics, CommonCore: Grade 5, Operations & Algebraic Thinking

5.OA Write and interpret numerical expressions.

- 5.OA.1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
- 5.OA.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.

CommonCore: Mathematics, CommonCore: Grade 5, Number & Operations in Base Ten

5.NBT Understand the place value system.

- 5.NBT.1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
- 5.NBT.2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
- 5.NBT.3. Read, write, and compare decimals to thousandths.
- 5.NBT.3a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.
- 5.NBT.3b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
- 5.NBT.4. Use place value understanding to round decimals to any place.

5.NBT Perform operations with multi-digit whole numbers and with decimals to hundredths.

- 5.NBT.5. Fluently multiply multi-digit whole numbers using the standard algorithm.

- 5.NBT.6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

 [Standards and Sample problems by unit](#)

Description of Unit	Essential Questions
<p>By the end of Unit 1, students will be able to fluently multiply multi-digit whole numbers using the standard algorithm. Students will also be able to find whole-number quotients of whole numbers (4-digits by 2-digits). Additionally, the unit will help students extend their understanding of place values to decimals. Students also will be able interpret, write, and evaluate numerical expressions and equations.</p>	<ul style="list-style-type: none"> • How can algebraic skills be applied in solving everyday life problems? • How do place-value patterns help us to understand large numbers? • When do we see decimals represented in everyday life? • What makes a computational strategy effective and efficient?
Knowledge	Skills
<p>Students will know that:</p> <p>A. in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.</p> <p>B. strategies based on place value, the properties of operations, and/or the relationship between multiplication and division can be used to find whole-number quotients.</p> <p>C. the standard algorithm for multiplying and dividing is a useful tool for computations.</p> <p>D. calculations can be illustrated and explained by using a variety of methods, such as writing equations or creating rectangular arrays and/or area models.</p> <p>E. a numerical expression is a mathematical "phrase" that stands for a single number (for example $4 + 1$) and can be evaluated.</p> <p>F. a numerical equation is a mathematical "sentence" that says that two things are equal (for example $4 + 1 = 5$) and can be solved.</p>	<p>Students will be able to:</p> <ol style="list-style-type: none"> 1. read and write decimals to thousandths using base-ten numerals, number names, and expanded form. 2. read, write, and compare decimals to thousandths. 3. compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$. symbols to record the results of comparisons. 4. use place value understanding to round decimals to any place. 5. explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. 6. fluently multiply multi-digit whole numbers using the standard algorithm. 7. explain patterns in the number of zeros of the product when multiplying a number by powers of 10. 8. use whole-number exponents to denote powers of 10.

G. in numerical expressions, parentheses (), brackets [], and braces { } are used to specify the evaluation order.

9. find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.
10. illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
11. interpret numerical expressions without evaluating them.
12. write simple expressions that record calculations with numbers.
13. evaluate numerical expressions with parentheses, brackets, and braces.

Assessments

Pre-assessment

Diagnostic: Other written assessments

Before beginning a new unit or chapter, students complete a pretest. Teacher analyzes the pretests for strengths/weaknesses to help drive instruction. At the conclusion of the section, pretests can be returned to students to be corrected in preparation for the test.

- 5.OA.1
- 5.OA.2
- 5.NBT.1
- 5.NBT.2
- 5.NBT.3
- 5.NBT.3a
- 5.NBT.3b
- 5.NBT.4
- 5.NBT.5
- 5.NBT.6

Communicators

Formative: Other visual assessments

During the guided practice part of the lesson, students record responses to problems on individual whiteboards. Teacher will monitor for errors, and assist where needed.

- 5.OA.1
- 5.OA.2
- 5.NBT.1
- 5.NBT.2
- 5.NBT.3
- 5.NBT.3a

- 5.NBT.3b
- 5.NBT.4
- 5.NBT.5
- 5.NBT.6

Lesson Quiz (Ticket to Leave)

Formative: Other written assessments

Students respond to a few written/oral problems to assess their understanding of the daily lesson. ([See link in Activities for Lesson Quizzes](#))

- 5.OA.1
- 5.OA.2
- 5.NBT.1
- 5.NBT.2
- 5.NBT.3
- 5.NBT.3a
- 5.NBT.3b
- 5.NBT.4
- 5.NBT.5
- 5.NBT.6

Quiz: Decimals

Formative: Written Test

After completing activities involving decimals, students complete a mid-unit quiz to assess their level of understanding.

- 5.NBT.1
- 5.NBT.2
- 5.NBT.3
- 5.NBT.3a
- 5.NBT.3b
- 5.NBT.4

Quiz: Multiplication & Division

Formative: Written Test

After completing activities involving multiplication and division, students complete a mid-unit quiz to assess their level of understanding.

- 5.NBT.5
- 5.NBT.6

Quiz: Numerical Expressions

Formative: Written Test

After completing activities involving numerical expressions, students complete a mid-unit quiz to assess their level of understanding.

5.OA.1

5.OA.2

Unit Test

Summative: Written Test

A teacher-made or publisher assessment will be given on the concepts/skills in this unit.

5.OA.1

5.OA.2

5.NBT.1

5.NBT.2

5.NBT.3

5.NBT.3a

5.NBT.3b

5.NBT.4

5.NBT.5

5.NBT.6

 [Assessment Guide](#)

Activities

Problem of the Day-Present a daily problem that serves as a review from the previous day's lesson. [\(see link\)](#)

Vocabulary Chart- Have students create a chart for each new vocabulary word that includes the word's meaning and an example.

Family Involvement Activities: Letter to the Family, Introduction to Vocabulary, Game and Activity Suggestions
- available online at www.harcourtschool.com/hspmath

How much money? Students use index cards to make "digit cards" with one digit on each card. Select three cards and place the remaining cards to the side. Challenge them to find the

Activities to Differentiate Instruction

See your HSP Math TE for strategies involving Differentiated Instruction (p. T27-29)

"The Shape of Phones" Project: [See links](#) for materials- All students watch the movie, "The Shape of Phones", and participate in the discussion. Then students complete the following activity sheets based on their levels:

Below Level: Decimal Dimensions (p. 11)

On-Level: Phone Numbers (p. 12)

Above-Level: Re-Design and QWERTY (p. 13 & 14)

Show What You Know: Assess student responses to *Show What You Know* pre-assessment. Based on quantity of

largest number possible. Extend this to decimals by including a decimal point. See TG Unit 1 p. 2F for more details.

Online Activities at www.harcourtschool.com/hspmath ([see link](#))

Decimals:

- Model Decimals (Tenths and Hundredths):
- Thousandths: Locate thousandths on a number line.
- Decimal Rainstorm- Comparison game

Multiplication:

E-Lab: Multiplying Decimals and Whole Numbers
Use patterns when you multiply a whole number by a decimal. (includes a printable record sheet to use as online activity progresses)

Division:

- E-Lab: Modeling Division with 2-Digit Divisors- Use an array to model division by 2 digits. (includes a printable record sheet to use as online activity progresses)
- E-Lab: Decimal Division- Use a model to divide decimals (includes a printable record sheet to use as online activity progresses)

Algebraic Expressions:

- Escape from Planet X (*Game*) - Choose the expression that matches the words.
- Evaluate Expressions - Watch this interactive demonstration to learn more about finding the value of expressions.

 [harcourtschool.com](http://www.harcourtschool.com) online activities

 [Problem of the Day, Spiral Review, Lesson Quizzes](#)

errors in each category, students will be assigned to the Math Online Intervention- Strategic Skills (below-level), or On-Level for students with few or no errors. ([see links](#))
Above-level: Enrichment Projects ([see links](#))

Math Concept Readers: These readers allow the student to read the story at different levels- above level, on level, and below level. (also available online with audio) Complete the Think and Respond and Write Math questions at the conclusion of each book. ([see link in Integrated/Cross-Disciplinary Instruction](#))

Leveled Practice: See first page of lesson in HSP Math teacher guide- Lesson Organizer- for Leveled Practice in Basic (purple), Average (red) and Advanced (blue) problems. Assign problems based on observations of communicators during guided practice.

 [Unit 2 Project: The Shape of Phones](#)

 [Unit 2 Project Video: The Shape of Phones](#)

 [Online Intervention: Re-teaching of each skill, practice activities, and quizzes](#)

 [Enrichment workbook and projects](#)

Integrated/Cross-Disciplinary Instruction

Resources

Reading and Writing: The Math Concept Readers allow the student to read the story at different levels- above level, on level, and below level. (also available online with audio- [see link](#)) Complete the Think and Respond and Write Math questions at the conclusion of each book.

Science: "The Shape of Phones" Project- Engineers and designers have been coming up with creative solutions to the problem of putting more and more power into less and less space. Students must think of how these engineers and designers use math in their everyday tasks.
-Math on Location Movie and project resources available at thinkcentral.com ([see link in Activities to Differentiate Instruction](#))

Social Studies: Comparing Decimals- World Almanac for Kids: The Olympics ([see link or TE](#) p. 210-211)

 [Math Concept Readers](#)

HSP Math Teacher Edition:
Unit 1, Chapter 2, Lessons 1,3 & 4 (multiplication)
Unit 1, Chapter 3, Lessons 2, 7 & 9 (division)
Unit 4, Chapter 11, Lessons 5 & 6 (exponents)
Unit 1, Chapter 4, Lessons 1 & 2 (expressions)- [see link](#) for worksheet utilizing brackets and braces
Unit 2, Chapter 5, Lessons 1, 2 & 3 (compare and order decimals)
Unit 2, Chapter 6, Lesson 1 (round decimals)
Unit 2, Chapter 7, Lessons 1,2,3,&6 (multiply decimals)
[See link](#) for website with worksheets for dividing decimals by powers of ten

North Carolina's description of each Common Core standard with sample problems ([see links](#))

Website: www.harcourtschool.com/hspmath ([see links](#))
Online glossary for student edition of textbook

Online Resources available at Thinkcentral.com: ([see links](#))

- Teacher Edition (TE) Textbook
- Student Edition (SE) Textbook
- HSP Math Assessment Guide
- HSP Math Daily Transparencies
- HSP Math Teacher Resource Book
- Math Instruction Models Deluxe Set (Smartboard presentation of each lesson)
- Math in Focus Math Background Videos
- Math in Focus TE
- Math in Focus Teacher Resources
- Math in Focus Transition Resource Map
- Math in Focus Workbook SE
- Math Concept Readers
- Enrich with Projects TE & SE
- HSP Math Family Involvement Book TE
- HSP Math Language Support for ELL TE & SE
- HSP Math Practice Workbook TE & SE
- HSP Math Problem Solving & Reading Strategies workbook TE & SE
- HSP Math Reteach the Standards workbook TE & SE
- HSP Math Strategic Intervention

- iTools
- Math on Location Movie Guide TE
- Math on Location Videos (introduces each unit and includes projects for each chapter)
- MegaMath Grades K-6 (games)
- Professional Development Videos for Podcasting

 thinkcentral.com

 harcourtschool.com

 [Online Glossary for Student Textbook](#)

 [NC's description of Common Core Math Standards and Sample Problems](#)

 [Worksheet with numerical expression brackets & braces](#)

 [worksheets- multiply and divide by powers of 10](#)

 [teacher created printables based on CCS](#)

[<< Previous Year](#)

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Unit Map 2013-2014

Green Brook Township School District

/ **Math Curriculum 5 (D)** / **Grade 5 (District Middle Curriculum)**

Tuesday, August 27, 2013, 1:37PM

Green Brook Township
Public Schools

Unit: Unit 2: Geometric Measures and Understanding Volume (Week 7, 6 Weeks)  

New Jersey Core Curriculum Standards

CommonCore: Mathematics, CommonCore: Grade 5, Mathematical Practice

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.

- 5. Use appropriate tools strategically.
- 6. Attend to precision.

CommonCore: Mathematics, CommonCore: Grade 5, Measurement & Data

5.MD Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

- 5.MD.3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
- 5.MD.3a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.
- 5.MD.3b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
- 5.MD.4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
- 5.MD.5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
- 5.MD.5a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
- 5.MD.5b. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.
- 5.MD.5c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

 [Standards and Sample problems by unit](#)

Description of Unit

Essential Questions

In this unit, students will manipulate and count unit cubes to discover how volume is established. By the conclusion of their study, students will be able to use the formula to find the volume of a rectangular prism. They will have multiple opportunities to use their knowledge of volume in real-world situations.

1. What strategies can be used when finding volume?
2. When can knowledge of volume be utilized in real-world situations?
3. How does knowing the associative property assist you in understanding volume?

Knowledge

Students will know that...

- A. a solid figure with a volume of n cubic units can be packed without gaps or overlaps with n unit cubes.
- B. the operations of multiplication and addition are related to volume.
- C. the volume is the same whether the three edge lengths are multiplied or the height is multiplied by the area of the base.
- D. the formulas that can be used to find the volume of rectangular prisms are: volume = length x width x height and volume = base x height.
- E. threefold whole-number products are represented as volumes, which can be demonstrated by the associative property of multiplication.
- F. the volume of adjacent rectangular prisms can be combined to find the total volume of a figure (additive)
- G. a cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.
- H. volume can be recognize as an attribute of solid figures.

Skills

Students will be able to ...

1. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes
2. Measure volume by counting unit cubes.
3. Measure volume using cubic units (cm, in, ft, and improvised units).
4. Use the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths.
5. Use the formulas for volume in the context of solving real-world and mathematical problems.
6. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts.
7. apply this technique (adding the volumes of the non-overlapping parts) to solve real-world problems.

Assessments

Pre-assessment

Diagnostic: Other written assessments

Before beginning a new unit or chapter, students complete a pretest. Teacher analyzes the pretests for strengths/weaknesses to help drive instruction. At the conclusion of the section, pretests can be returned to students to be corrected in preparation for the test.

5.MD.3,a,b, 5.MD.4, 5.MD.5, 5.MD.5a-c

Communicators

Formative: Other visual assessments

During the guided practice part of the lesson, students record responses to problems on individual whiteboards. Teacher will monitor for errors, and assist where needed.

5.MD.3,a,b, 5.MD.4, 5.MD.5, 5.MD.5a-c

Ticket to Leave (daily quiz)

Formative: Other written assessments

Students respond to a few problems to assess their understanding of the daily lesson. (See link in Activities for Lesson Quizzes)

5.MD.3,a,b, 5.MD.4, 5.MD.5, 5.MD.5a-c

Quiz: Volume on Rectangular Prisms using unit cubes

Formative: Other written assessments

After completing activities involving volume on rectangular prisms using cubes, students complete a mid-unit quiz to assess their level of understanding.

5.MD.3,a,b, 5.MD.4

Quiz: Finding volume using formula

Formative: Other written assessments

After completing activities involving volume using the formula, students complete a mid-unit quiz to assess their level of understanding.

5.MD.5a, 5.MD.5b

Quiz: Volume on real word situations

Formative: Other written assessments

After completing activities involving real-world situations involving volume, students complete a mid-unit quiz to assess their level of understanding.

5.MD.5, 5.MD.5b, 5.MD.5c

Chapter/ Unit test

Summative: Other written assessments

A teacher-made or publisher assessment will be given on the concepts that are covered in the unit.

5.MD.3,a,b, 5.MD.4, 5.MD.5, 5.MD.5a-c

Activities

Problem of the Day-Present a daily problem that serves as a review from the previous day's lesson. (see link)

Activities to Differentiate Instruction

See your HSP Math TE for strategies involving Differentiated Instruction (p. T27-29)

Vocabulary Chart- Have students create a chart for each new vocabulary word that includes the word’s meaning and an example.

Family Involvement Activities: Letter to the Family, Introduction to Vocabulary, Game and Activity Suggestions
 - available online at www.harcourtschool.com/hspmath

Volume of Playdough Activity - Students will create rectangular and triangular prisms with a given volume of play-dough, discovering the properties and attributes of these solids (number of edges, faces, and vertices as well as the types of faces), reviewing - [\(See Link\)](#)

Box It Up - In this activity students will be finding the volume of rectangular prisms. [\(See Link\)](#)

Fill 'Em Up - This activity will help students to learn the concept of volume through hands-on activities. [\(See Link\)](#)

-  [Volume of Play](#)
-  [Box It Up](#)
-  [Fill 'Em Up](#)
-  [Problem of the Day](#)
-  [Workbook](#)

The Orion Space Capsule: [See links](#) for materials- All students watch the movie, "The Orion Space Capsule", and participate in the discussion. Then students complete the following activity sheets based on their levels:

- Below Level: 100 Gallons (p. 50)
- On-Level: Designing a Space Capsule (p. 51-52)
- Above-Level: Space Craft Model (p. 53)

Show What You Know: Assess student responses to *Show What You Know* pre-assessment. Based on quantity of errors in each category, students will be assigned to the Math Online Intervention- Strategic Skills (below-level), or On-Level for students with few or no errors. [\(see links\)](#)
 Above-level: Enrichment Projects [\(see links\)](#)

Math Concept Readers: These readers allow the student to read the story at different levels- above level, on level, and below level. (also available online with audio) Complete the Think and Respond and Write Math questions at the conclusion of each book. [\(see link in Integrated/Cross-Disciplinary Instruction\)](#)

Leveled Practice: See first page of lesson in HSP Math teacher guide- Lesson Organizer- for Leveled Practice in Basic (purple), Average (red) and Advanced (blue) problems. Assign problems based on observations of communicators during guided practice.

-  [Online intervention](#)
-  [Unit 8 Movie- Orion Space Capsule](#)
-  [Unit 8 project: The Orion Space Capsule](#)
-  [Enrichment activity](#)

Integrated/Cross-Disciplinary Instruction	Resources
<p>Reading and Writing: The Math Concept Readers allow the student to read the story at different levels- above level, on level, and below level. (also available online with audio- see link) Complete the Think and Respond and Write Math questions at the conclusion of each book.</p>	<p>HSP Math Teacher Edition: Unit 8, Chapter 24, Lessons 8,9 (volume)</p> <p>North Carolina’s description of each Common Core standard with sample problems (see links)</p>

Science: The Fill 'Em Up activity integrates science and math ([See activity link](#))

 [Concept Readers](#)

Website: www.harcourtschool.com/hspmath ([see links](#))
Online glossary for student edition of textbook

Online Resources available at Thinkcentral.com: ([see links](#))

- Teacher Edition (TE) Textbook
- Student Edition (SE) Textbook
- HSP Math Assessment Guide
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- Math in Focus Math Background Videos
- Math in Focus TE
- Math in Focus Teacher Resources
- Math in Focus Transition Resource Map
- Math in Focus Workbook SE
- Math Concept Readers
- Enrich with Projects TE & SE
- HSP Math Family Involvement Book TE
- HSP Math Language Support for ELL TE & SE
- HSP Math Practice Workbook TE & SE
- HSP Math Problem Solving & Reading Strategies workbook TE & SE
- HSP Math Reteach the Standards workbook TE & SE
- HSP Math Strategic Intervention
- iTools
- Math on Location Movie Guide TE
- Math on Location Videos (introduces each unit and includes projects for each chapter)
- MegaMath Grades K-6 (games)
- Professional Development Videos for Podcasting

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Unit Map 2013-2014

Green Brook Township School District

/ **Math Curriculum 5 (D)** / **Grade 5 (District Middle Curriculum)**

Tuesday, August 27, 2013, 1:40PM

Green Brook Township
Public Schools

Unit: Unit 3: Operations-Whole #s, Decimals, & Fractions (Week 13, 6 Weeks) 📅 📧

New Jersey Core Curriculum Standards

CommonCore: Mathematics, CommonCore: Grade 5, Mathematical Practice

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.

- 3. Construct viable arguments and critique the reasoning of others.
- 7. Look for and make use of structure.

CommonCore: Mathematics, CommonCore: Grade 5, Number & Operations in Base Ten

5.NBT Understand the place value system.

- 5.NBT.1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.

5.NBT Perform operations with multi-digit whole numbers and with decimals to hundredths.

- 5.NBT.5. Fluently multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

CommonCore: Mathematics, CommonCore: Grade 5, Number & Operations—Fractions

5.NF Use equivalent fractions as a strategy to add and subtract fractions.

- 5.NF.1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
- 5.NF.2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.

5.NF Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- 5.NF.3. Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

CommonCore: Mathematics, CommonCore: Grade 5, Measurement & Data

5.MD Convert like measurement units within a given measurement system.

- 5.MD.1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

 [Standards and Sample problems by unit](#)

Description of Unit

Students will begin this unit by performing multi-digit multiplication using the standard algorithm. These skills will be extended to all operations of decimals through hundredths. Students also will complete activities involving the addition and subtraction of fractions and mixed numbers with unlike denominators. To conclude the unit, students will apply their knowledge of operations of whole numbers, decimals, and fractions to convert among measurement units.

Essential Questions

- How do operations affect numbers?
- How can patterns be used to understand and use decimal place value?
- How are fractions, whole numbers, and mixed numbers related?
- How do units within a system relate to each other?

Knowledge

Students will know that:

A. in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.

B. the following can be used to add, subtract, multiply, and divide decimals:

- concrete models/ drawings
- strategies based on place value
- strategies based on properties of operations
- strategies based on the relationship between addition and subtraction

C. equivalent fractions can be used to find the sum or difference of fractions/mixed numbers with unlike denominators

Skills

Students will be able to:

1. fluently multiply multi-digit whole numbers using the standard algorithm.
2. add, subtract, multiply, and divide decimals to hundredths, using a variety of strategies.
3. relate the strategy used to solve a problem to a written method and explain the reasoning used.
4. add and subtract fractions and mixed numbers with unlike denominators by finding equivalent fractions.
5. solve word problems involving division of whole numbers.
6. convert among different-sized standard measurement units within a given measurement system.
7. use conversions in solving multi-step, real world problems.

D. a fraction represents the division of the numerator by the denominator ($a/b = a \div b$).

E. word problems involving division of whole numbers may lead to answers in the form of fractions or mixed numbers.

F. visual fraction models or equations can represent word problems involving division.

Assessments

Pre-assessment

Diagnostic: Other written assessments

Before beginning a new unit or chapter, students complete a pretest. Teacher analyzes the pretests for strengths/weaknesses to help drive instruction. At the conclusion of the section, pretests can be returned to students to be corrected in preparation for the test.

5.NBT.1
5.NBT.5
5.NBT.7
5.NF.1
5.NF.2
5.NF.3
5.MD.1

Communicators

Formative: Other visual assessments

During the guided practice part of the lesson, students record responses to problems on individual whiteboards. Teacher will monitor for errors, and assist where needed.

5.NBT.1
5.NBT.5
5.NBT.7
5.NF.1
5.NF.2
5.NF.3
5.MD.1

Lesson Quiz (Ticket to Leave)

Formative: Other written assessments

Students respond to a few written/oral problems to assess their understanding of the daily lesson. ([See link in Activities](#) for Lesson Quizzes)

5.NBT.1
5.NBT.5
5.NBT.7
5.NF.1

5.NF.2
5.NF.3
5.MD.1

Quiz: Multi-digit Multiplication

Formative: Written Test

After completing activities involving multi-digit multiplication, students complete a mid-unit quiz to assess their level of understanding.

5.NBT.1
5.NBT.5

Quiz: Adding and Subtracting Decimals

Formative: Written Test

After completing activities involving adding and subtracting decimals, students complete a mid-unit quiz to assess their level of understanding.

5.NBT.7

Quiz: Multiplying and Dividing Decimals

Formative: Written Test

After completing activities involving multiplying and dividing decimals, students complete a mid-unit quiz to assess their level of understanding.

5.NBT.7

Quiz: Adding and Subtracting Fractions and Mixed Numbers

Formative: Written Test

After completing activities involving addition and subtraction of fractions and mixed numbers, students complete a mid-unit quiz to assess their level of understanding.

5.NF.1
5.NF.2
5.NF.3

Quiz: Converting Measurements

Formative: Written Test

After completing activities involving converting measurements, students complete a mid-unit quiz to assess their level of understanding.

5.MD.1

Unit Test

Summative: Written Test

A teacher-made or publisher assessment will be given on the concepts that are covered in this unit.

5.NBT.1
5.NBT.5

- 5.NBT.7
- 5.NF.1
- 5.NF.2
- 5.NF.3
- 5.MD.1

 Assessment Guide

Activities	Activities to Differentiate Instruction
<p>Problem of the Day-Present a daily problem that serves as a review from the previous day's lesson. (see link)</p> <p>Vocabulary Chart- Have students create a chart for each new vocabulary word that includes the word's meaning and an example.</p> <p>Online Activities: Games, E-Labs and Activities - available online at www.harcourtschool.com/hspmath (see link)</p> <p>Hands-on activities - Fraction activities on adding and subtracting fractions. (see link)</p> <p>Online games- Various games are available for decimals that can be used on the Smart Board and/or on individual computers (found in SmartExchange)</p> <p> <u>Problem of the Day, Spiral Review, Lesson Quizzes</u></p> <p> <u>harcourtschool.com online activities</u></p> <p> <u>hands-on activities</u></p> <p> <u>online games for decimals</u></p>	<p>See your HSP Math TE for strategies involving Differentiated Instruction (p. T27-29)</p> <p>Designing Backpacks Project: See links for materials- All students watch the movie, "Designing Backpacks", and participate in the discussion. Then students complete the following activity sheets based on their levels:</p> <p>Below Level: Strap Padding (p. 30) On-Level: Small, Medium, and Large (p. 31) Above-Level: Displaying Backpacks (p. 32)</p> <p>Show What You Know: Assess student responses to <i>Show What You Know</i> pre-assessment. Based on quantity of errors in each category, students will be assigned to the Math Online Intervention- Strategic Skills (below-level), or On-Level for students with few or no errors. (see links) Above-level: Enrichment Projects (see links)</p> <p>Math Concept Readers: These readers allow the student to read the story at different levels- above level, on level, and below level. (also available online with audio) Complete the Think and Respond and Write Math questions at the conclusion of each book. (see link in Integrated/Cross-Disciplinary Instruction)</p> <p>Leveled Practice: See first page of lesson in HSP Math teacher guide- Lesson Organizer- for Leveled Practice in Basic (purple), Average (red) and Advanced (blue) problems. Assign problems</p>

based on observations of communicators during guided practice.

-  [Unit 5 Designing Backpacks](#)
-  [Unit 5 Movie- Designing Backpacks](#)
-  [Online Intervention- Re-teaching of each skill, practice activities, and quizzes](#)
-  [Enrichment workbook and projects](#)

Integrated/Cross-Disciplinary Instruction	Resources
<p>Cross-Curricular Leveled activities from HSP Math Teacher Guide (see link or TE)</p> <p>Social Studies: Decimals- Multiply Money Amounts (p. 128C); Fractions- Calculate the value of paper money from the American Revolution (p. 272C) - Calculate weights of items to take on the Oregon Trail (p. 338C)</p> <p>Science: Decimals- Have students calculate the weight of a classroom object on the moon (p. 128C). Fractions- Determining Density Activity (p. 272C); Calculate the final mass of a zinc, copper, and tin mixture (p. 338C) Conversions- World Almanac- Playing in the Water (p.680-681)</p> <p>Reading and Writing: The Math Concept Readers allow the student to read the story at different levels- above level, on level, and below level. (also available online with audio- see link) Complete the Think and Respond and Write Math questions at the conclusion of each book.</p> <p> Math Concept Readers  Cross-curricular Leveled Activities- Decimals</p>	<p>HSP Math Teacher Edition: Unit 1, Chapter 2 (multiplication of whole numbers) Unit 2, Chapters 5-8 (operations with decimals) Unit 4, Chapter 12, Lesson 2 (equivalent fractions) Unit 5, Chapters 13 & 14 (adding and subtracting fractions and mixed numbers) Unit 8, Chapter 22, (converting measurements)</p> <p>North Carolina's description of each Common Core standard with sample problems (see links)</p> <p>Website: www.harcourtschool.com/hspmath (see links) Online glossary for student edition of textbook</p> <p>Online Resources available at Thinkcentral.com: (see links)</p> <ul style="list-style-type: none"> • Teacher Edition (TE) Textbook • Student Edition (SE) Textbook • HSP Math Assessment Guide • HSP Math Daily Transparencies • HSP Math Teacher Resource Book • Math Instruction Models Deluxe Set (Smartboard presentation of each lesson) • Math in Focus Math Background Videos • Math in Focus TE • Math in Focus Teacher Resources • Math in Focus Transition Resource Map • Math in Focus Workbook SE • Math Concept Readers • Enrich with Projects TE & SE

 [Cross-curricular Leveled Activities- Fractions](#)

 [Cross-curricular Leveled Activities- Fraction Operations](#)

- HSP Math Family Involvement Book TE
- HSP Math Language Support for ELL TE & SE
- HSP Math Practice Workbook TE & SE
- HSP Math Problem Solving & Reading Strategies workbook TE & SE
- HSP Math Reteach the Standards workbook TE & SE
- HSP Math Strategic Intervention
- iTools
- Math on Location Movie Guide TE
- Math on Location Videos (introduces each unit and includes projects for each chapter)
- MegaMath Grades K-6 (games)
- Professional Development Videos for Podcasting

 thinkcentral.com

 harcourtschool.com

 [Online Glossary for Student Textbook](#)

 [NC's description of Common Core Math Standards and Sample Problems](#)

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Unit Map 2013-2014

Green Brook Township School District

/ **Math Curriculum 5 (D)** / Grade 5 (District Middle Curriculum)

Tuesday, August 27, 2013, 1:41PM

Green Brook Township
Public Schools

Unit: Unit 4: Multiplication and Division of Fractions (Week 19, 6 Weeks) 📅 📌

New Jersey Core Curriculum Standards

CommonCore: Mathematics, CommonCore: Grade 5, Mathematical Practice

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.

- 4. Model with mathematics.
- 8. Look for and express regularity in repeated reasoning.

CommonCore: Mathematics, CommonCore: Grade 5, Number & Operations—Fractions

5.NF Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- 5.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- 5.NF.4a. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$.
- 5.NF.4b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
- 5.NF.5. Interpret multiplication as scaling (resizing), by:
 - 5.NF.5a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.
 - 5.NF.5b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.
- 5.NF.6. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
- 5.NF.7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
 - 5.NF.7a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.
 - 5.NF.7b. Interpret division of a whole number by a unit fraction, and compute such quotients.
 - 5.NF.7c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.

 Standards and Sample problems by unit

Description of Unit	Essential Questions
<p>By the end of Unit 4, the students will be skilled in the multiplication and division of fractions. The students will apply their understanding of these operations to resizing figures and to finding the area of rectangles. The students will also apply their knowledge to real-world problems involving the multiplication and division of fractions.</p>	<ol style="list-style-type: none"> 1. How do multiplication and division of fractions relate to each other? 2. Why do we take the reciprocal of the second fraction in a division problem? 3. How can multiplication and division of the fractions help us to solve real world problems?
Knowledge	Skills
<p>Students will know that:</p> <ol style="list-style-type: none"> A. the product $(a/b) \times q$ as a part of a partition of q into b equal parts; equivalently, as the result of a sequence of operations, $a \times q \div b$. B. when multiplying a given number by a fraction less than 1, the result is a product smaller than the given number. C. their previous understandings of division will help them to divide unit fractions by whole numbers and whole numbers by unit fractions. D. if they can multiply fractions, they can develop strategies to divide fractions by reasoning about the relationship between multiplication and division. 	<p>Students will be able to:</p> <ol style="list-style-type: none"> 1. Multiply a fraction or whole number by a fraction. 2. Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. 3. Explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case). 4. Explain why multiplying a given number by a fraction less than 1 results in a product smaller than the given number. 5. Relate the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1. 6. Solve real-world problems involving multiplication of fractions and mixed numbers by using visual fraction models or equations to represent the problem. 7. Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions by using visual fraction models and equations to represent the problem.

8. Solve division problems of a unit fraction by a non-zero whole number.

9. Solve division problems of a whole number by a unit fraction.

Assessments

Pre-assessment

Diagnostic: Other written assessments

Before beginning a new unit or chapter, students complete a pretest. Teacher analyzes the pretests for strengths/weaknesses to help drive instruction. At the conclusion of the section, pretests can be returned to students to be corrected in preparation for the test.

5.NF.4a-b, 5.NF.a-b, 5.NF.6, 5.NF.7a-c

Communicators

Formative: Other visual assessments

During the guided practice part of the lesson, students record responses to problems on individual whiteboards. Teacher will monitor for errors, and assist where needed.

5.NF.4a-b, 5.NF.a-b, 5.NF.6, 5.NF.7a-c

Lesson Assessment (Ticket to Leave)

Formative: Other visual assessments

Students respond to a few written/oral problems to assess their understanding of the daily lesson. ([See link in Activities for Lesson Quizzes](#))

5.NF.4a-b, 5.NF.a-b, 5.NF.6, 5.NF.7a-c

Quiz: Multiplication of Fractions

Formative: Written Test

After completing activities involving multiplication of fractions, students complete a mid-unit quiz to assess their level of understanding.

5.NF.4.a

Quiz: Finding areas and resizing figures using Multiplication of Fractions

Formative: Written Test

After completing activities involving finding area and resizing figures using multiplication of fractions, students complete a mid-unit quiz to assess their level of understanding.

5.NF.4.b, 5.NF. 5.a-b

Quiz: Dividing Fractions

Formative: Written Test

After completing activities involving dividing fractions, students complete a mid-unit quiz to assess their level of understanding.
5.NF.7a,b

Quiz: Real-world problems using multiplying and dividing of fractions

Formative: Written Test

After completing activities involving real-world problems using multiplication and division of fractions, students complete a mid-unit quiz to assess their level of understanding.
5.NF.6, 5.NF.7c

Unit Test

Summative: Written Test

A teacher-made or publisher assessment on the concepts in this unit.
5.NF.4.a-b, 5.NF.5a-b, 5.NF.6, 5.NF.7.a-c

 [Assessment Guide](#)

Activities

Problem of the Day-Present a daily problem that serves as a review from the previous day's lesson. [\(see link\)](#)

Vocabulary Chart- Have students create a chart for each new vocabulary word that includes the word's meaning and an example.

Various Online Activities: Games, E-Labs and Activities - available online at www.harcourtschool.com/hspmath [\(see link\)](#)

Soccer Shootout (online game): [\(see link\)](#)
Score and Save by correctly answering math problems- add, subtract, multiply, and divide fractions

Multiplying Fractions Millionaire Game: [\(see link\)](#)
In this millionaire game, students will practice multiplying fractions and writing the answer in simplest form.

Activities to Differentiate Instruction

See your HSP Math TE for strategies involving Differentiated Instruction (p. T27-29)

Show What You Know: Assess student responses to *Show What You Know* pre-assessment. Based on quantity of errors in each category, students will be assigned to the Math Online Intervention- Strategic Skills (below-level), or On-Level for students with few or no errors. [\(see links\)](#)
Above-level: Enrichment Projects [\(see links\)](#)

Math Concept Readers: These readers allow the student to read the story at different levels- above level, on level, and below level. (also available online with audio) Complete the Think and Respond and Write Math questions at the conclusion of each book. [\(see link in Integrated/Cross-Disciplinary Instruction\)](#)

Leveled Practice: See first page of lesson in HSP Math teacher guide- Lesson Organizer- for Leveled Practice in Basic (purple), Average (red) and Advanced (blue) problems. Assign problems based on observations of communicators during guided practice.

-  [Problem of Day, Spiral Review, Lesson Quizzes](#)
-  [harcourtschool.com online activities](#)
-  [Soccer Shootout](#)
-  [Millionaire Game: Multiplying Fractions](#)

-  [Online Intervention- Re-teaching of each skill, practice activities, and quizzes](#)
-  [Enrichment workbook and projects](#)

Integrated/Cross-Disciplinary Instruction	Resources
<p>Reading and Writing: The Math Concept Readers allow the student to read the story at different levels- above level, on level, and below level. (also available online with audio- see link) Complete the Think and Respond and Write Math questions at the conclusion of each book.</p> <p>Science: Fractions- World Almanac for Kids: The Planets (HSP math book p. 416-417)</p> <p> Math Concept Readers</p>	<p>HSP Math Teacher Edition: Unit 5, Chapter 15 (multiply and divide fractions) Unit 8, Chapter 24, Lesson / 22 (area of rectangles)</p> <p>North Carolina's description of each Common Core standard with sample problems (see links)</p> <p>Website: www.harcourtschool.com/hspmath (see links) Online glossary for student edition of textbook</p> <p>Online Resources available at Thinkcentral.com: (see links)</p> <ul style="list-style-type: none"> • Teacher Edition (TE) Textbook • Student Edition (SE) Textbook • HSP Math Assessment Guide • HSP Math Daily Transparencies • HSP Math Teacher Resource Book • Math Instruction Models Deluxe Set (Smartboard presentation of each lesson) • Math in Focus Math Background Videos • Math in Focus TE • Math in Focus Teacher Resources • Math in Focus Transition Resource Map • Math in Focus Workbook SE • Math Concept Readers • Enrich with Projects TE & SE • HSP Math Family Involvement Book TE • HSP Math Language Support for ELL TE & SE • HSP Math Practice Workbook TE & SE • HSP Math Problem Solving & Reading Strategies workbook TE & SE • HSP Math Reteach the Standards workbook TE & SE • HSP Math Strategic Intervention

- iTools
- Math on Location Movie Guide TE
- Math on Location Videos (introduces each unit and includes projects for each chapter)
- MegaMath Grades K-6 (games)
- Professional Development Videos for Podcasting

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 [Online Glossary for Student Textbook](#)

 [NC's description of Common Core Math Standards and Sample Problems](#)

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Unit Map 2013-2014

Green Brook Township School District

/ **Math Curriculum 5 (D)** / **Grade 5 (District Middle Curriculum)**

Tuesday, August 27, 2013, 1:41PM

Green Brook Township
Public Schools

Unit: Unit 5: Coordinates, LinePlots, Decimals, Geometry (Week 25, 6 Weeks)  

New Jersey Core Curriculum Standards

CommonCore: Mathematics, CommonCore: Grade 5, Mathematical Practice

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.

- 2. Reason abstractly and quantitatively.

CommonCore: Mathematics, CommonCore: Grade 5, Operations & Algebraic Thinking

5.OA Analyze patterns and relationships.

- 5.OA.3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.

CommonCore: Mathematics, CommonCore: Grade 5, Number & Operations in Base Ten

5.NBT Perform operations with multi-digit whole numbers and with decimals to hundredths.

- 5.NBT.5. Fluently multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

CommonCore: Mathematics, CommonCore: Grade 5, Measurement & Data

5.MD Represent and interpret data.

- 5.MD.2. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots.

CommonCore: Mathematics, CommonCore: Grade 5, Geometry

5.G Graph points on the coordinate plane to solve real-world and mathematical problems.

- 5.G.1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction

of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).

- 5.G.2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

5.G Classify two-dimensional figures into categories based on their properties.

- 5.G.3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
- 5.G.4. Classify two-dimensional figures in a hierarchy based on properties.

 [Standards and Sample problems by unit](#)

Description of Unit

Students begin Unit 5 with a review of operations of multi-digit whole numbers and decimals. They will then build on that knowledge to identify relationships within patterns and to graph the resulting ordered pairs on coordinate grids. Students will solve real-world and sample mathematical problems by graphing points on a coordinate plane and interpreting coordinate values of points in the context of the situation. When two-dimensional figures are presented on coordinate planes, students will classify them as a hierarchy.

Also in this unit, students will be creating line plots to display a data set of measurements, including problems involving fraction operations on information presented in line plots.

Essential Questions

1. In what ways do we organize data for the purpose of analysis?
2. How is data utilized in our everyday life?
3. What strategies can be used when adding subtracting, multiplying and dividing decimals to the hundredth place?
4. How can we best represent and verify algebraic/geometric relationships?

Knowledge

Students will know that
 A. the standard algorithm for multiplying is a useful tool for making computations in all aspects of mathematics
 B. the following can be used to add, subtract, multiply, and divide decimals:

- concrete models/ drawings
- strategies based on place value

Skills

Students will be able to
 1. generate two numerical patterns using two given rules.
 2. identify apparent relationships between corresponding terms.
 3. form ordered pairs consisting of corresponding terms from two patterns, and graph the ordered pairs on a coordinate plane.
 4. solve real-world and sample mathematical problems by graphing points in the first quadrant of the coordinate plane.

- strategies based on properties of operations
- strategies based on the relationship between addition and subtraction

C. the intersection of the lines of a coordinate plane is called the origin, and it is arranged to coincide with the 0 on each line

D. a given point in the plane is located by using an ordered pair of numbers, called its coordinates.

E. in an ordered pair, the first number indicates how far to travel from the origin in the direction of one axis (x), and the second number indicates how far to travel in the direction of the second axis (y)

F. attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.

5. fluently multiply multi-digit whole numbers using the standard algorithm.
6. add, subtract, multiply, and divide decimals to hundredths.
7. relate the strategy used to solve a problem to a written method and explain the reasoning used.
8. make a line plot to display a data set of measurements in fractions of a unit ($1/2$, $1/4$, $1/8$).
9. add, subtract, and multiply fractions to solve problems involving information presented in line plots.
10. use a pair of perpendicular number lines, called axes, to define a coordinate system.
11. classify two-dimensional figures in a hierarchy based on properties.

Assessments

Pre-Assessment

Diagnostic: Other written assessments

Before beginning a new unit or chapter, students complete a pretest. Teacher analyzes the pretests for strengths/weaknesses to help drive instruction. At the conclusion of the section, pretests can be returned to students to be corrected in preparation for the test.

- 5.OA.3
- 5.NBT.5
- 5.NBT.7
- 5.MD.2
- 5.G.1
- 5.G.2
- 5.G.3
- 5.G.4

Communicators

Formative: Other visual assessments

During the guided practice part of the lesson, students record responses to problems on individual whiteboards. Teacher will monitor for errors, and assist where needed.

- 5.OA.3
- 5.NBT.5
- 5.NBT.7
- 5.MD.2
- 5.G.1

5.G.2
5.G.3
5.G.4

Lesson Quiz (Ticket to Leave)

Formative: Other written assessments

Students respond to a few written/oral problems to assess their understanding of the daily lesson. ([See link in Activities for Lesson Quizzes](#))

5.OA.3
5.NBT.5
5.NBT.7
5.MD.2
5.G.1
5.G.2
5.G.3
5.G.4

Quiz: Patterns and Relationships

Diagnostic: Written Test

After completing activities involving patterns and relationships, students complete a mid-unit quiz to assess their level of understanding.

5.OA.3

Quiz: Decimal Operations

Formative: Written Test

After completing activities involving decimal operations, students complete a mid-unit quiz to assess their level of understanding.

5.NBT.5
5.NBT.7

Quiz: Line Plots

Formative: Written Test

After completing activities involving line plots, students complete a mid-unit quiz to assess their level of understanding.

5.MD.2

Quiz: Coordinate Planes

Formative: Written Test

After completing activities involving coordinate planes, students complete a mid-unit quiz to assess their level of understanding.

5.G.1
5.G.2

Quiz: Two-dimensional Shapes

Formative: Written Test

After completing activities involving two-dimensional shapes, students complete a mid-unit quiz to assess their level of understanding.

5.G.3

5.G.4

Unit Test

Summative: Written Test

A teacher-made or publisher assessment on the concepts in this unit.

5.OA.3

5.NBT.5

5.NBT.7

5.MD.2

5.G.1

5.G.2

5.G.3

5.G.4

 [HSP Math Assessment Guide](#)

Activities

Problem of the Day-Present a daily problem that serves as a review from the previous day's lesson. [\(see link\)](#)

Vocabulary Chart- Have students create a chart for each new vocabulary word that includes the word's meaning and an example.

Online Activities: Games, E-Labs and Activities
- available online at www.harcourtschool.com/hspmath [\(see link\)](#)

Coordinate Graphing Activity: [\(see link\)](#)
Use graph paper and the coordinate pairs given to create a mystery picture.

Line Plot Activities: [\(see link\)](#)

Activities to Differentiate Instruction

See your HSP Math TE for strategies involving Differentiated Instruction (p. T27-29)

Show What You Know: Assess student responses to *Show What You Know* pre-assessment. Based on quantity of errors in each category, students will be assigned to the Math Online Intervention- Strategic Skills (below-level), or On-Level for students with few or no errors. [\(see links\)](#)
Above-level: Enrichment Projects [\(see links\)](#)

Math Concept Readers: These readers allow the student to read the story at different levels- above level, on level, and below level. (also available online with audio) Complete the Think and Respond and Write Math questions at the conclusion of each book. [\(see link in Integrated/Cross-Disciplinary Instruction\)](#)

Leveled Practice: See first page of lesson in HSP Math teacher guide- Lesson Organizer- for Leveled Practice in Basic (purple),

Variety of activity sheets are available at superteacherworksheets.com (see media specialist for username/password if needed)

-  harcourtschool.com online activities
-  [Problem of the Day, Spiral Review, Lesson Quizzes](#)
-  [Coordinate Graphing Activity](#)
-  [line plot activities- see Laua Philip for username/password if needed](#)

Average (red) and Advanced (blue) problems. Assign problems based on observations of communicators during guided practice.

-  [Online Intervention: Re-teaching of each skill, practice activities, and quizzes](#)
-  [Enrichment workbook and projects](#)

Integrated/Cross-Disciplinary Instruction

Reading and Writing: The Math Concept Readers allow the student to read the story at different levels- above level, on level, and below level. (also available online with audio- [see link](#)) Complete the Think and Respond and Write Math questions at the conclusion of each book.

Cross-Curricular Leveled activities from HSP Math Teacher Guide ([see link](#) or TE)

- **Social Studies:** Geometry- World Almanac for Kids: Flags of the World (p. 586-587)

 [Math Concept Readers](#)

Resources

HSP Math Teacher Edition:
 Unit 1, Chapter 4 Lessons 7 & 8 (functions and inequalities)
 Unit 2, Chapters 5-8 (operations with decimals)
 Unit 3, Chapter 9, Lesson 1 (line plots)
 Unit 3, Chapter 10, Lesson 7 (line plots)
 Unit 3, Chapter 10, Lesson 3 (graphing ordered pairs)
 Unit 7, Chapter 19 (Plane and Solid Figures)
 Unit 7, Chapter 21, (Integers and the Coordinate plane)

North Carolina's description of each Common Core standard with sample problems ([see links](#))

Website: www.harcourtschool.com/hspmath ([see links](#))
 Online glossary for student edition of textbook

Online Resources available at Thinkcentral.com: ([see links](#))

- Teacher Edition (TE) Textbook
- Student Edition (SE) Textbook
- HSP Math Assessment Guide
- HSP Math Daily Transparencies
- HSP Math Teacher Resource Book
- Math Instruction Models Deluxe Set (Smartboard presentation of each lesson)
- Math in Focus Math Background Videos
- Math in Focus TE
- Math in Focus Teacher Resources
- Math in Focus Transition Resource Map

- Math in Focus Workbook SE
- Math Concept Readers
- Enrich with Projects TE & SE
- HSP Math Family Involvement Book TE
- HSP Math Language Support for ELL TE & SE
- HSP Math Practice Workbook TE & SE
- HSP Math Problem Solving & Reading Strategies workbook TE & SE
- HSP Math Reteach the Standards workbook TE & SE
- HSP Math Strategic Intervention
- iTools
- Math on Location Movie Guide TE
- Math on Location Videos (introduces each unit and includes projects for each chapter)
- MegaMath Grades K-6 (games)
- Professional Development Videos for Podcasting

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