



## Unit 7: Geometry and Fractions

about 31 days

### Unit Overview

Students will develop a strong understanding of geometry and fractions by first exploring plane and solid figures. They will identify, describe, and create shapes such as circles, triangles, squares, and rectangles, recognizing lines of symmetry and explaining how symmetry relates to congruency. Students will also compare and contrast plane figures and solid figures, including circles and spheres, squares and cubes, and rectangles and rectangular prisms, using attributes such as sides, vertices, faces, and curves. Building on this foundation, students will learn to partition shapes into equal parts—halves, thirds, fourths, sixths, and eighths—and justify their reasoning in real-world contexts. Through hands-on activities and problem-solving tasks, students will connect these concepts to everyday objects, communicate their mathematical thinking clearly, and build a foundation for spatial reasoning and proportional understanding.

### Standards

**2.NS.3 The student will use mathematical reasoning and justification to solve contextual problems that involve partitioning models into equal-sized parts (halves, fourths, eighths, thirds, and sixths).**

**WIDA ELD-SI.K-3.Inform** - Multilingual learners will describe parts and wholes.

**WIDA ELD-SI.K-3.Explain** - Multilingual learners will act on feedback to revise understandings of how or why something works.

**WIDA ELD-MA.2-3.Argue.Interpretive** - Multilingual learners will interpret mathematics arguments by identifying conjectures about what might be true, distinguishing connections among ideas in justifications, and/or extracting mathematical operations and facts from solution strategies to create generalizations.

**2.MG.3 The student will identify, describe, and create plane figures (including circles, triangles, squares, and rectangles) that have at least one line of symmetry and explain its relationship with congruency.**

**WIDA ELD-SI.K-3.Inform** - Multilingual learners will define and classify objects or concepts; describe parts and wholes; sort, clarify, and summarize ideas; and, summarize information from interaction with others and from learning experiences.

**WIDA ELD-MA.2-3.Explain.Interpretive** - Multilingual learners will interpret mathematical explanations by identifying concept or entity and evaluating simple pattern or structure.

### Learning Targets

**2.NS.3**

- I can model and describe fractions as representing equal-size parts of a whole.
- I can describe the relationship between the number of fractional parts needed to make a whole and the size of the parts.
- I can compose the whole for a given fractional part and its value (in context) for halves, fourths, eighths, thirds, and sixths.
- I can use same-size fraction pieces, from a region/area model, count by unit fractions up to two wholes.
- I can represent, name, and write fractional parts of a whole for halves, fourths, eighths, thirds, and sixths using region/area models; length models; and set models when given a context.
- I can compare unit fractions for halves, fourths, eighths, thirds, and sixths using words and symbols, with region/area and length models.

**2.MG.3**

- I can explore a figure using a variety of tools to show and justify a line of symmetry, if one exists.
- I can create figures with at least one line of symmetry using various concrete and pictorial representations.
- I can describe the two resulting figures formed by a line of symmetry as being congruent.

**WIDA ELD-MA.2-3.Explain.Expressive** - Multilingual learners will construct mathematical explanations that describe solution and steps used to solve problem with others.

**2.MG.4 The student will describe, name, compare, and contrast plane and solid figures (circles/spheres, squares/cubes, and rectangles/rectangular prisms).**

**WIDA ELD-SI.K-3.Inform** - Multilingual learners will define and classify objects or concepts; describe parts and wholes; sort, clarify, and summarize ideas; and, summarize information from interaction with others and from learning experiences.

**WIDA ELD-MA.2-3.Explain.Interpretive** - Multilingual learners will interpret mathematical explanations by identifying concept or entity and evaluating simple pattern or structure.

**2.MG.4**

- I can trace faces of cubes and rectangular prisms to create the set of plane figures related to the solid figure.
- I can compare and contrast models and nets of cubes and rectangular prisms.
- Given a concrete or pictorial model, I can name and describe the solid figure (sphere, cube, and rectangular prism) by its characteristics.
- I can compare and contrast plane and solid figures according to their characteristics.

#### VDOE Instructional Materials

##### Understanding the Standard

##### Big Ideas and Content Connections

##### Skills in Practice

##### Essential Questions

[2023 Grade 2 Mathematics Standards of Learning](#)

[2023 Grade 2 Instructional Guides](#)

[VDOE Mathematics Concepts & Connections Articulation Guide](#)

- How can we use models to partition shapes into equal-sized parts, and how do these parts help us understand fractions?
- How does the number of equal parts in a whole impact the size of each part?
- How can we compare unit fractions using words such as greater than, less than or equal to?
- What is the relationship between a line of symmetry and congruency?
- What are the similarities and differences between plane figures and solid figures?

## Learning Progression

| Prior Learning  | Current Learning   | Future Learning   |
|---|--|---|
| <b>1.NS.3</b> Use mathematical reasoning and justification to solve contextual problems that involve partitioning models into two and four equal-sized parts.                 | <b>2.NS.3</b> Use mathematical reasoning and justification to solve contextual problems that involve partitioning models into equal-sized parts (halves, fourths, eighths, thirds, and sixths).          | <b>3.NS.3</b> Use mathematical reasoning and justification to represent and compare fractions (proper and improper) and mixed numbers with denominators of 2, 3, 4, 5, 6, 8, and 10), including those in context. |
| <b>1.NS.3</b> Use mathematical reasoning and justification to solve contextual problems that involve partitioning models into two and four equal-sized parts.                 | <b>2.MG.3</b> Identify, describe, and create plane figures (including circles, triangles, squares, and rectangles) that have at least one line of symmetry and explain its relationship with congruency. | <b>3.NS.3</b> Use mathematical reasoning and justification to represent and compare fractions (proper and improper) and mixed numbers with denominators of 2, 3, 4, 5, 6, 8, and 10), including those in context. |
| <b>1.MG.2</b> Describe, sort, draw, and name plane figures (circles, triangles, squares, and rectangles), and compose larger plane figures by combining simple plane figures. | <b>2.MG.4</b> Describe, name, compare, and contrast plane and solid figures circles/spheres, squares/cubes, and rectangles/rectangular prisms).  | <b>3.MG.4abcd</b> Describe and classify polygons, identify, describe, name, classify and compare triangles, quadrilaterals, pentagons, hexagons, and octagons.  |

## Vocabulary

circle, compare, compose, congruent, contrast, cube, denominator, edges, eighths, equal parts, equal-sized, equal to, equivalent parts, faces, fair share, fourths, fraction, greater than, halves, less than, line of symmetry, model, net, numerator, partition, plane figure, rectangle, rectangular prism, sixths, solid figure, sphere, square, symmetry, thirds, unit fraction, vertices, whole

## Learning Experiences

### Classroom Routines, Structures, & Resources

Routines should be an integral part of the development of mathematics understanding. Each day should include a brief (5-10 minute), deliberate, and carefully planned time for introducing and reviewing key concepts and skills. Refer to the [Unit 0 Unit Guide](#) for additional information on implementing classroom routines.

#### Building Fact Fluency

- This unit covers string 17 (Pretend 10/ Make 10: Markers), string 18 (Near Doubles: Eggs), and string 19 (Pretend 10/ Make 10: Pizza). Additional resources can be accessed in your kit or on the website. You will need to log in to the website using the information found in your kits.
- For additional support with Building Fact Fluency, you can self-enroll in the [PWCS Canvas Course Getting Started with Building Fact Fluency](#).

#### Number Sense Routines

- The [PowerPoint](#) includes daily routines per week. Building Fact Fluency has been embedded into the number sense routine.

#### Fluency (2.CE.1e)

- 2.CE.1e: Recall with automaticity addition and subtraction facts within 20 is a standard expected to be taught and practiced throughout the year.
- In the process of learning mathematical operations, students advance through three distinct phases (Bay-Williams, J., Kling, G., 2019):
  - **Phase 1: Counting** - Students rely on counting to solve problems.
  - **Phase 2: Deriving** - Students use their basic facts to derive solutions for more complex problems.
    - This phase is crucial for developing fluency, flexibility, and efficiency.
    - By moving too quickly through or even skipping Phase 2, students often revert to counting. Sufficient time and experience in Phase 2 are crucial for achieving lasting mastery
  - **Phase 3: Mastery** - Students move to automaticity, their ability to produce answers quickly, after sufficient practice with a variety of strategies.

## Sub-standards

- Model and describe fractions as representing equal-size parts of a whole. **(2.NS.3a)**
- Describe the relationship between the number of fractional parts needed to make a whole and the size of the parts (i.e., as the whole is divided into more parts, each part becomes smaller). **(2.NS.3b)**
- Compose the whole for a given fractional part and its value (in context) for halves, fourths, eighths, thirds, and sixths (e.g., when given  $\frac{1}{7}$ , determine how many pieces would be needed to make  $\frac{4}{4}$ ). **(2.NS.3c)**
- Using same-size fraction pieces, from a region/area model, count by unit fractions up to two wholes (e.g., zero one-fourths, one one-fourth, two one-fourths, three one-fourths, four one-fourths, five one-fourths; or zero-fourths, one-fourth, two-fourths, three-fourths, four-fourths, five-fourths). **(2.NS.3d)**
- Given a context, represent, name, and write fractional parts of a whole for halves, fourths, eighths, thirds, and sixths using: **(2.NS.3e)**
  - region/area models (e.g., pie pieces, pattern blocks, geoboards); **(2.NS.3ei)**
  - length models (e.g., paper fraction strips, fraction bars, rods, number lines); and **(2.NS.3eii)**
  - set models (e.g., chips, counters, cubes). **(2.NS.3eiii)**
- Compare unit fractions for halves, fourths, eighths, thirds, and sixths using words (greater than, less than or equal to) and symbols ( $>$ ,  $<$ ,  $=$ ), with region/area and length models. **(2.NS.3f)**
  
- Explore a figure using a variety of tools (e.g., paper folding, geoboards, drawings) to show and justify a line of symmetry, if one exists. **(2.MG.3a)**
- Create figures with at least one line of symmetry using various concrete and pictorial representations. **(2.MG.3b)**
- Describe the two resulting figures formed by a line of symmetry as being congruent (having the same shape and size). **(2.MG.3c)**
  
- Trace faces of solid figures (cubes and rectangular prisms) to create the set of plane figures related to the solid figure. **(2.MG.4a)**
- Compare and contrast models and nets (cutouts) of cubes and rectangular prisms (e.g., number and shapes of faces, edges, vertices). **(2.MG.4b)**
- Given a concrete or pictorial model, name and describe the solid figure (sphere, cube, and rectangular prism) by its characteristics (e.g., number of edges, number of vertices, shapes of faces). **(2.MG.4c)**
- Compare and contrast plane and solid figures (circles/spheres, squares/cubes, and rectangles/rectangular prisms) according to their characteristics (e.g., number and shapes of their faces, edges, vertices). **(2.MG.4d)**

## Teachers' Knowledge and Skill (TKS)

- This unit incorporates Topic 13 (Shapes and Their Attributes) from Savvas enVision.
- You can refer to pages 557E, 557F, 557G, and 557H in Topic 13 in the Savvas enVision Teacher Guide for background information.
- For additional language support, refer to the Language Support Activities for Topic 13 in the Language Support Handbook.
- This [document](#) includes additional information on the TKS for the fraction number sense standards addressed in this unit (2.NS.3abcde).
- This [document](#) includes additional information on the TKS for the fraction comparison standard addressed in this unit (2.NS.3f).
- This [document](#) includes additional information on the TKS for the symmetry standards addressed in this unit (2.MG.3abc).
- This [document](#) includes additional information on the TKS for the plane and solid figures standards addressed in this unit (2.MG.4abcd).
- It is important to note that most of the standards in this unit have very specific expectations for what and how. Ensure that you are planning the lessons with the substandard at the forefront to be in alignment with the entirety of the standard.

## Student Engagement

### Manipulatives and Tools

- Throughout this learning experience, students should have experiences using physical tools and organizational structures when exploring number and computation strategies.
- These manipulatives will be used throughout this unit. [This PowerPoint](#) shows images of all the manipulatives students might see throughout elementary school. Reproducible tools can be found in [Savvas' Teaching Tools](#). Virtual Manipulatives can be assessed through BrainingCamp within Savvas.
  - Fraction Circles
  - Fraction Bars
  - Geoboards
  - Pattern Blocks
  - Number Lines
  - Cuisenaire Rods
  - Counters
  - Mirrors
  - AngLegs or Exploragons
  - Nets of solid figures (cubes and rectangular prisms)
  - Plane figures (circles, squares, and rectangles)
  - Solid figures (spheres, cubes, and rectangular prisms)
  - [Nets](#)
  - [Grid Paper](#)

### Scaffolds

- Sentence frames
- Additional lesson level support is found in the Error Intervention (under Elaborate) section for each Guided Practice in Savvas envision lesson

## Tasks Aligned to Content, Rigor, and Relevance

### Savvas Lesson Structure Resources



- **Daily Review**
- **Step 1: Problem-Based Learning**
  - *Solve & Share*: Introduce concepts through a problem-solving experience. Facilitate rich classroom conversations that promote a growth mindset and result in deeper conceptual understanding.
- **Step 2: Visual Learning**
  - *Visual Learning Bridge*: Visual instruction gives learners greater access to concepts. Make key math ideas explicit through instruction connected to the Solve & Share. Formative assessment opportunities inform decision-making.
  - *Convince Me!*: Explain, justify, use reasoning. Promote class discussion
  - *Guided Practice* and *Independent Problem Solving* Student Workbook
- **Step 3: Assess & Differentiate**
  - Includes: Intervention Activity, Reteach, Build Mathematical Literacy, Enrichment, Math Games, Activity Centers (STEM Project, Pick a Project, Problem-Solving Literacy Mat and Activity)
  - Select the resources that best aligns to the needs of your students and alignment to the standards

For additional support with Savvas envision, you can self-enroll in the [PWCS Canvas Course Getting Started with Savvas enVision](#).

### Magma Math Lesson Resources

- Magma Math is a digital math platform that allows students to show their thinking on open-ended problems, giving teachers real-time insights into student thinking and understanding.
- The question sets provided in the Learning Experience Table (below) incorporate questions at a variety of levels (Mild, Medium, and Spicy) and can be found in your “Unpublished Folder.”
- For additional support in using Magma Math, you can reference the [help section](#) on Magma Math or self-enroll in the [PWCS Canvas Course](#).
- When delivering an in-class assignment, you should monitor student work using the dashboard and confer with students as they work. Select strategies to share with the class and have students make connections between the strategies. For additional support, check out [this resource](#).

| Learning Experience   |  |
|---|--|
| <b>Math Routines</b>  | <p>Lessons generally take 1 day but some may extend into a second day. Work with your CLTs to determine pacing of these lessons based on student need.</p>   |
| <p><u>Number Sense</u><br/><u>Routines</u></p> <p>Building Fact Fluency<br/>Routines are embedded into<br/>the number sense routines</p>  | <p><b>Savvas Lesson Topic 13 VA-14: Line Symmetry (2.MG.3ab)</b></p> <ul style="list-style-type: none"> <li>Note – introduce vocabulary Symmetry and Congruence</li> <li>Note – Preview lesson to have paper prepared for folding</li> <li>Include opportunities for students to utilize manipulatives/tools and engage with peers by posing purposeful questions to justify their thinking.</li> </ul>  |
|   | <p><a href="#">PWCS Lesson: Symmetry (2.MG.3ac)</a></p>  |
|   | <p><a href="#">PWCS Lesson: Exploring Symmetry with Geoboard (2.MG.3abc)</a></p>   |
|   | <p><b>Savvas Lesson 13-4: Cubes (2.MG.4cd)</b></p> <ul style="list-style-type: none"> <li>Modifications:           <ul style="list-style-type: none"> <li>Note: Students are not expected to be able to draw a cube</li> <li>Skip #2 and 4-6 in Guided/Independent Practice</li> </ul> </li> </ul>   |
|   | <p><a href="#">PWCS Lesson: Captain Invincible and the Space Shapes (2.MG.4cd)</a></p>   |
|   | <p><b>Magma Math Lesson: Grade 2 Unit 7 Set 1: Solid Figures (2.MG.4cd)</b></p> <ul style="list-style-type: none"> <li>Note- this question set is accessed through the “Unpublished” section of your Magma Math Account.</li> <li>Use <a href="#">this resource</a> as a guide to implement this lesson.</li> </ul>  |
|   | <p><b>Savvas Lesson Topic 13 VA-16: Flat Surfaces of Solid Figures (2.MG.4a)</b></p> <ul style="list-style-type: none"> <li>Modification:           <ul style="list-style-type: none"> <li>Have students trace <i>all</i> faces to create the set of plane figures for each solid</li> <li>Skip #4-8</li> </ul> </li> <li>Include opportunities for students to engage with peers by posing purposeful questions that require students to explain and justify their thinking.</li> </ul> |
|   | <p><b>Savvas Lesson Topic 13 VA-15: Solid Figures (2.MG.4bc)</b></p> <ul style="list-style-type: none"> <li>Include opportunities for students to utilize manipulatives/tools</li> <li>Include opportunities for students to engage with peers by posing purposeful questions that require students to explain and justify their thinking.</li> </ul>  |
|   | <p><a href="#">PWCS Lesson: Compare Nets of Cubes and Rectangular Prisms (2.MG.4abc)</a></p>   |
|   | <p><b>Savvas Lesson 13-6: Partition Shapes (2.NS.3a)</b></p> <ul style="list-style-type: none"> <li>Modifications:           <ul style="list-style-type: none"> <li>add opportunities for students to engage with eighths and sixths</li> <li>have geoboards available for students to utilize</li> </ul> </li> </ul>  |
| <p><b>Savvas Lesson 13-7: Equal Shares, Different Shapes (2.NS.3a)</b></p> <ul style="list-style-type: none"> <li>Modifications:           <ul style="list-style-type: none"> <li>add opportunities for students to engage with eighths and sixths</li> <li>have geoboards available for students to utilize</li> </ul> </li> </ul> |  |

|  |   |
|--|---|
| <p style="text-align: center;"><u>Number Sense</u><br/><u>Routines</u></p> <p>Building Fact Fluency Routines are embedded into the number sense routines</p> | <p><a href="#"><u>PWCS Lesson: Exploring Fraction Tools (2.NS.3)</u></a></p>  |
|  | <p><a href="#"><u>PWCS Lesson: Exploring Area/Region Models and Fraction Notation (2.NS.3abce-i)</u></a></p> <ul style="list-style-type: none"> <li>Note – Span this lesson over two days</li> </ul>  |
|  | <p><a href="#"><u>VDOE MIP: Pattern Block Fractions (2.NS.3cde-i)</u></a></p>   |
|  | <p><a href="#"><u>PWCS Lesson: Exploring Length Models (2.NS.3ace)</u></a></p> <ul style="list-style-type: none"> <li>Note – Span this lesson over two days</li> </ul>  |
|  | <p><a href="#"><u>PWCS Lesson: Exploring Set Models (2.NS.3ace)</u></a></p> <ul style="list-style-type: none"> <li>Note – Span this lesson over two days</li> </ul>   |
|  | <p><a href="#"><u>PWCS Lesson: Putting It Together - Fraction Models (2.NS.3)</u></a></p>   |
|  | <p><b>Magma Math Lesson: Grade 2 Unit 7 Set 2: Fraction Models (2.NS.3abce)</b></p> <ul style="list-style-type: none"> <li>Note- this question set is accessed through the “Unpublished” section of your Magma Math Account.</li> <li>Use <a href="#"><u>this resource</u></a> as a guide to implement this lesson.</li> </ul>  |
|  | <p><b>Savvas Lesson Topic 13 VA-18: Size of Fractional Parts (2.NS.3b)</b></p> <ul style="list-style-type: none"> <li>Include opportunities for students to utilize manipulatives/tools</li> <li>Include opportunities for students to engage with peers by posing purposeful questions that require students to explain and justify their thinking.</li> </ul>   |
|  | <p><a href="#"><u>VDOE MIP: More or Less (2.NS.3f)</u></a></p>  |
|  | <p><a href="#"><u>Math Forward: Comparing Fractions (2.NS.3f)</u></a></p> <ul style="list-style-type: none"> <li>Modifications: <ul style="list-style-type: none"> <li>Use fraction tiles in place of paper fraction pieces (start at bullet 2)</li> <li>Include opportunities for students to engage with peers by posing purposeful questions that require students to explain and justify their thinking.</li> </ul> </li> </ul> |
|  | <p><b>Savvas Lesson Topic 13 VA-24: Using Models to Compare Unit Fractions (2.NS.3f)</b></p> <ul style="list-style-type: none"> <li>Include opportunities for students to utilize manipulatives/tools and engage with peers by posing purposeful questions to justify their thinking.</li> </ul>  |
|  | <p><b>Magma Math Lesson: Grade 2 Unit 7 Set 3: Comparing Unit Fractions (2.NS.3f)</b></p> <ul style="list-style-type: none"> <li>Note- this question set is accessed through the “Unpublished” section of your Magma Math Account.</li> <li>Use <a href="#"><u>this resource</u></a> as a guide to implement this lesson.</li> </ul>  |
| <p><a href="#"><u>PWCS Lesson: Counting Beyond a Whole (2.NS.3d)</u></a></p>   |   |
| <p><a href="#"><u>VDOE Rich Task: Brownie Pans (2.NS.3)</u></a></p>  |   |

## Additional Resources

- Additional Savvas Resources:
  - Pick a Project
  - Technology Center
  - Interactive Math Story: Building Blocks
  - Today's Challenge
  - Daily Reviews
  - Vocabulary Review
  - Topic 13 Let's Investigate: Let's Share
  - Topic 13 VA-17: Faces, Vertices, and Edges
  - Topic 13 VA-18: Size of Fractional Parts
  - Topic 13 VA-19: Represent, Name, and Write Fractional Parts
  - Topic 13 VA-20: Fractions of a Set
  - Topic 13 VA-21: Fractions on a Number Line
  - Topic 13 VA-22: Wholes of Fractional Parts
  - Topic 13 VA-23: Count by Unit Fractions
    - Use region/area model rather than the length model
- Additional Resources for Step 3
  - Building Fact Fluency Games:
    - String 17: Make-10 or Pretend-10 with 8 (Ten-Frames)
    - String 17: Make-10 or Pretend-10 with 8 (Numerals)
    - String 17: Make-10 or Pretend-10 with 9 (Ten-Frames)
    - String 17: Make-10 or Pretend-10 with 9 (Numerals)
    - String 18: Near Doubles within 13 (Doubles +/- 1)
    - String 18: Near Doubles within 19 (Doubles +/- 1)
    - String 18: Near Doubles within 14 (Doubles +/- 1 or 2)
    - String 18: Near Doubles within 20 (Doubles +/- 1 or 2)
    - String 19: Dominating Doubles within 12
    - String 19: Dominating Doubles within 18
  - Other:
    - [Have to Halve Game](#)
    - [Fun with Fractions Game](#)
    - [Fraction Barrier Game](#)
    - [Interactive Representing Fraction](#)
    - [Interactive Compare Unit Fractions](#)
    - [Interactive Comparing Fractions \(Unit Fractions\)](#)
    - [Interactive Comparing Unit Fraction Sort](#)
    - [Unit Fraction Compare Game](#)
  - VDOE
    - [VDOE MIP: The Shape Show Vocabulary](#)
  - Math Forward
    - [Math Forward: Composing a Whole](#)

## Assessments

### Optional Summative Assessments

The *optional* division Common End of Unit Assessment may include questions from the Savvas enVision Topic and Performance Assessments for Topic 13. If you are planning on giving the optional division assessment, consider not using these questions for review or as examples during instruction.

- [Unit Assessment Part A](#) will be available as a pdf two weeks prior to the end of the unit.
- [Unit Assessment Part B](#) will be available as a pdf and in Mastery Connect two weeks prior to the end of the unit.

### Optional Formative assessments

- Savvas enVision: Quick Checks are available in the online resources
- [VDOE Just in Time Quick Checks](#)
- Magma: Formative assessments can be created by selecting questions from these banks found in the Virginia- Grade 2 Book in your Magma Math Account. For additional support in using Magma Math, you can reference the [help section](#) on Magma Math or self-enroll in the [PWCS Canvas Course](#).
  - 3. Partitioning into Equal Parts (2.NS.3)
    - § 1. Partitioning 2 D Shapes (2.NS.3a)
    - § 2. Fractions from figures (2.NS.3d, 2.NS.3e)
    - § 3. Identify halves, thirds, and quarters in shapes (2.NS.3e)
    - § 4. Comparing unit fractions (2.NS.3f)
  - 6. Measurement and Geometry (2.MG)
    - § 3. Lines of symmetry (2.MG.3a, 2.MG.3c)
    - § 4. Identify 3D Shapes (cubes and spheres) (2.MG.4c)
    - § 5. Identify 3D Figures (cubes, rectangular prisms, and spheres) (2.MG.4c)

## Resources

### Related Literature

#### Geometry

- Greene, R. *When a Line Bends...a Shape Begins*
- Harris, T. *Pattern Fish*
- Hoban, T. *Shapes, Shapes, Shapes*
- Murphy, S. *Captain Invincible and the Space Shapes*
- Murphy, S. *Let's Fly a Kite*
- Numeroff, L. *If You Give a Mouse a Cookie*

#### Fractions

- Dodds, D.A. *Full House: An Invitation to Fractions*
- Hutchins, P. *The Doorbell Rang*
- McMillan, B. *Eating Fractions*
- Murphy, S.J. *Give Me Half!*
- Pallotta, J. *The Hershey's Milk Chocolate Bar Fractions*
- Pinczes, E. *Inchworm and a Half*

### Tier 2 Resources

Based on formative assessment and observations, use these resources to provide additional support for your students based on where they are. This can be used during Core Extension or as a Teacher Center during the math block. Each module is about 1 week's worth of intervention, and students should experience the entire module, including the progress monitoring in Session 5. Schools have access to binders with the printable activities for each module and kits of manipulatives and cards required for each session. You can also access the PDF versions of the binders located in your building through this [Safari Playlist](#). For additional support with Bridges Intervention, you can self-enroll in the [PWCS Canvas Course Getting Started with Bridges Intervention](#).

#### Bridges Math Intervention- Volume 8- Adding, Subtracting & Making Sense of Fractions

- Module 1: Creating Equal Parts of a Whole
- Module 2: Exploring Equal Parts of a Whole
- Module 3: Building with Unit Fractions
- Module 4: Fractions on the Number Line

### Professional Literature

#### General Mathematics Content

- *Elementary and Middle School Mathematics: Teaching Developmentally* by: Van De Walle, J., Karp, K., and Bay-Williams, J.
- *Mine the Gap for Mathematical Understanding K-2* by: SanGiovanni

#### Number Sense Routines

- *Number Talks*, by: Parrish, S.
- *Number Sense Routines: Building Numerical Literacy Every Day in Grades K-3* by: Shumway, J.

#### Tasks for Reasoning and Problem Solving

- *The 5 Practices in Practice* by: Smith, M., Bill, V., Sherin, M.
- *Rough Draft Math* by: Jansen, M.

#### Best Practices in Mathematics

- *Building Thinking Classrooms* by: Liljedahl, P.
- *Strengths-Based Teaching and Learning in Mathematics: Five Teaching Turnarounds for Grades K-6* by: Kobett, B., & Karp
- [Safari Playlist on Questioning](#)

#### Fluency

- [NCTM Position Statement on Procedural Fluency](#)
- *Building Fact Fluency* by Jennifer Bay-Williams and Gina Kling
- *Figuring Out Fluency Addition and Subtraction with Whole Numbers* by John SanGiovanni, Jennifer Bay-Williams, and Rosalba Serrano

## Integrated Support

### English Learner Program

- The playlist, [EL Instructional Resources for Content Areas](#), was developed by the Prince William County English Learner (EL) Program. It provides:
  - resources to support co-teaching
  - scaffolds/differentiation
  - reading/writing/speaking across content areas, for our English Learners
  - accommodation information
- Be sure to check with your EL teacher to determine which accommodations each student receives according to their Test Participation and Accommodation Plan.

### Gifted Education Program

Collaboration with the school's gifted education resource teacher is recommended to support gifted learners in the classroom.

- [Instructional Best Practice for Gifted Learners](#) (general strategies)
- [Grade 2 Math Extensions](#) (by standard, created by Gifted Education and Talent Development Program)



## Summary of Revisions to Unit Guide

### Removed:

- Objective 2.NS.3b from PWCS Lesson: Exploring Length Models and PWCS Lesson: Exploring Set Models

### Modified:

- Lesson Sequence: Flip-flopped the PWCS Lesson on Set Model and PWCS Lesson on Area/Region Model

### Added:

-