

# Winchester Math Curriculum Grade 1

<b>Subject</b>	Mathematics
<b>Grade/Course</b>	Grade One
<b>Unit of Study</b>	Unit 5- Geometry
<b>Pacing</b>	February
<b>Unit Summary</b>	First graders use a variety of tools and models to explore two- and three-dimensional shapes and fractions (halves, thirds, and fourths). Throughout, the emphasis is squarely on shapes--identifying, describing, constructing, drawing, comparing, composing, and sorting them. Students learn about fractions in the context of two-dimensional shapes as they cut paper sandwiches in halves and fourths, fold and cut paper circle pizzas to share, and play a fraction bingo game in which they must complete the pictures and labels on their own boards.
<b>Overarching Mathematical Practices</b>	
<p><b>1.MP.1 Make sense of problems and persevere in solving them.</b>            1.MP.2 Reason abstractly and quantitatively.            1.MP.3 Construct viable arguments and critique the reasoning of others.  <b>1.MP.4 Model with mathematics.</b>            1.MP.5 Use appropriate tools strategically            1.MP.6 Attend to precision  <b>1.MP.7 Look for and make use of structure</b>            1.MP.8 Look for and express regularity in repeated reasoning.</p>	
<b>Unit CT Core Content Standards</b>	
<p><b>1.OA.A.1-</b> Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p> <p><b>1.OA.A.2-</b> Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p> <p><b>1.OA.B.3-</b> Apply properties of operations as strategies to add and subtract. <i>Examples: If <math>8 + 3 = 11</math> is known, then <math>3 + 8 = 11</math> is also known. (Commutative property of addition.) To add <math>2 + 6 + 4</math>, the second two numbers can be added to make a ten, so <math>2 + 6 + 4 = 2 + 10 = 12</math>. (Associative property of addition.)</i></p> <p><b>1.OA.B.4-</b> Understand subtraction as an unknown-addend problem. <i>For example, subtract <math>10 - 8</math> by finding the number that makes 10 when added to 8.</i></p> <p><b>1.OA.C.6- Add and subtract within 20, demonstrating fluency for addition and subtraction within 10.</b> Use strategies such as counting on; making ten (e.g., <math>8 + 6 = 8 + 2 + 4 = 10 + 4 = 14</math>); decomposing a number leading to a ten (e.g., <math>13 - 4 = 13 - 3 - 1 = 10 - 1 = 9</math>); using the relationship between addition and subtraction (e.g., knowing that <math>8 + 4 = 12</math>, one knows <math>12 - 8 = 4</math>); and creating equivalent but easier or known sums (e.g., adding <math>6 + 7</math> by creating the known equivalent <math>6 + 6 + 1 = 12 + 1 = 13</math>).</p> <p><b>1.OA.D.7-</b> Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? <math>6 = 6</math>, <math>7 = 8 - 1</math>, <math>5 + 2 = 2 + 5</math>, <math>4 + 1 = 5 + 2</math>.</p> <p><b>1.NBT.A.1-</b> Count to 120, starting at any number less than 120. In this range, read and write numerals</p>	

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and represent a number of objects with a written numeral.

**1.NBT.C.4-** Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, 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. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

**1.NBT.C.6-** Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), 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.

**1.MD.C.4-** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

**1.G.A.1-** Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

**1.G.A.2-** Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.

**1.G.A.3-** Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

### “Unwrapped” Standards

Skills	Content
Distinguish	between defining attributes
Build and Draw	shapes to possess defining attributes
Compose	<ul style="list-style-type: none"> <li>● two-and three-dimensional shapes</li> <li>● new shapes from composite shape</li> </ul>
Create	composite shape
Partition	circles and rectangles into equal shares
Describe	whole as two of or four of
Understand	decomposing into equal shares creates smaller shares
Organize, represent, and interpret	data
Ask and answer	questions about data points
Count	to 120 starting at any number less than 120
Write	numerals
Represent	objects with numerals
Add	<ul style="list-style-type: none"> <li>● within 20</li> <li>● within 100 using concrete models, representations, or strategies</li> <li>● two digits numbers as adding tens and ones</li> </ul>
Relate	strategy to written method

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Explain	reasoning	
Subtract	<ul style="list-style-type: none"> <li>• multiples of 10 (10 - 90)</li> <li>• within 20</li> </ul>	
Solve	<ul style="list-style-type: none"> <li>• word problems using addition and subtraction to 20 using objects, drawings, and equations</li> <li>• word problems using addition of three numbers with sum up to 20</li> </ul>	
Apply	properties of operations	
Demonstrate	fluency of addition and subtractions within 10	
Understand	meaning of equal sign	
Determine	if addition/subtraction equations are true or false	
<b>Essential Questions</b>		
<b>Corresponding Big Ideas</b>		
<ol style="list-style-type: none"> <li>1. How can a shape or figure be described?</li> <li>2. How can strategies help us add and subtract?</li> <li>3. What questions can be answered by data representations?</li> </ol>	<ol style="list-style-type: none"> <li>1. Shapes or figures can be described by their defining attributes such as, a triangle has three-sides and is a closed figure etc..</li> <li>2. Strategies can help us build a better understanding of the relationships between numbers and operations. Some strategies that can help us add and subtract are counting on, making ten, decomposing a number to make ten, using relationships between addition and subtraction, creating easier, but known sums.</li> <li>3. People use graphs and charts to communicate information and learn about a class or community, such as favorite ice cream flavors, favorite color, favorite sport, etc.</li> <li>4.</li> </ol>	
<b>Evidence of Learning - Assessment</b>		
<b>Pre/Post Assessment</b>	<b>Interim Assessment</b>	<b>Additional Evidence of Learning</b>
<ul style="list-style-type: none"> <li>• Unit 5 Assessment - Module 3, Session 6</li> </ul>	<ul style="list-style-type: none"> <li>• Shapes Checkpoint - Module 2, Session 5</li> </ul>	Options <ul style="list-style-type: none"> <li>• <a href="#">Exit tickets</a></li> </ul> Observational Assessments <ul style="list-style-type: none"> <li>• Last Shape in Wins - M1, S3</li> <li>• Pattern Block Puzzles - M1, S4</li> <li>• Cube Predictions - M2, S4</li> <li>• Pyramid Predictions - M2, S5</li> <li>• Triangle Prism Predictions - M4, S1</li> </ul>

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- Shape Sorting and Graphing  
- M4, S2

## Smarter Balanced Interim Assessment

[Smarter Balanced General Scoring Rubrics](#) - 4 Rubrics included - Score Pt 4 to Score Pt 1

### Smarter Balanced Interim Blocks

- Interim assessment blocks may be used for a variety of assessment purposes, including: pre/post, interim and formative (additional evidence of learning).
- The [Style Guide](#), which aligns with the expectations of Smarter Balanced Assessments, will support the creation of unit- and standard-aligned items for instructional use.
- The items on the interim assessments are developed under the same conditions, protocols, and review procedures as those used in the summative assessments. Therefore, they assess the same Common Core State Standards, adhere to the same principles of Universal Design in order to be accessible to all students, and provide evidence to support Smarter Balanced claims in mathematics and ELA/literacy. The interim assessment items are non-secure but non-public. This means that educators may view the items, however, they should not be made public outside of classroom, school or district.

#### · Unit-aligned Smarter Balanced Interim Assessment Block (IAB)\*:

- *\*Some interim blocks show clear, strong alignment to priority standards within the unit. Other blocks have been placed in one specific unit but could be aligned to the priority standards of several units. Blocks have been spread out over the course of all units for a more balanced approach to assessment throughout the school year. These interim blocks, used in partnership with the Style Guide, will support the creation of unit- and standard-aligned items for instructional use.*

## Learning Plan

### Researched-based Instructional Resources and Methods

#### Sequence of Instruction:

**Number Corner**→ **Problem + Investigations**→**Work Places**→**Home Connections**

Bridges Number Corner: The focus areas for Number Corner aligned to Unit 5 are:

#### Geometry

- Triangles and Quadrilaterals
- Finding congruent shapes on geoboards
- Identify and sorts by attributes

#### Number Sense

- Modeling thinking about tens and ones
- Making the next ten
- Compare, order, and estimate collections
- Looking for groups of 5, 10, 25, and 50
- Working with hundreds grid

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**Computational Fluency**

- Identify known number combinations when adding multiple addends
- Find addends that make 10, a double, or a known fact
- Visualize using ten frame models
- Tell own math stories

**Bridges- Whole Group, Small Group, and Independent Problem Center Activities**

Module 1	Module 2	Module 3	Module 4
Problem + Investigation <ul style="list-style-type: none"> <li>● Sessions 1-5</li> </ul> Work Place <ul style="list-style-type: none"> <li>● Sessions 1-5</li> </ul> Home Connection <ul style="list-style-type: none"> <li>● Sessions 2, 5</li> </ul>	Problem + Investigation <ul style="list-style-type: none"> <li>● Sessions 1-5</li> </ul> Work Place <ul style="list-style-type: none"> <li>● Sessions 1-5</li> </ul> Assessment <ul style="list-style-type: none"> <li>● Session 5</li> </ul> Home Connection <ul style="list-style-type: none"> <li>● Session 2, 5</li> </ul>	Problem + Investigation <ul style="list-style-type: none"> <li>● Session 1, 2, 3, 4, 5, 7</li> </ul> Work Place <ul style="list-style-type: none"> <li>● Sessions 1-7</li> </ul> Assessment <ul style="list-style-type: none"> <li>● Sessions 6, 7</li> </ul> Home Connection <ul style="list-style-type: none"> <li>● Session 2, 5</li> </ul>	Problem + Investigation <ul style="list-style-type: none"> <li>● Sessions 1-3</li> </ul> Work Place <ul style="list-style-type: none"> <li>● Sessions 1-3</li> </ul> Home Connection <ul style="list-style-type: none"> <li>● Sessions 1, 3</li> </ul>

**Possible Misconceptions**

1. The terms closed and unclosed (open) figures may confuse students.
2. Some students have difficulty visualizing filling in shape puzzles. Some students may not notice that two triangles make a rectangle.
3. Some students may incorrectly think the size of equal shares is directly related to the number of equal shares; for example, there are four fourths in one whole and two halves in one whole, so the fourths must be larger. Some students may mistakenly believe that a fourth is larger than a half because the number four is larger than the number two.
4. Some students may ask questions for data that has too many choices such as “What is your favorite color?”
5. Some students may not realize they have not collected data from enough people (students).
6. Some students have difficulty summarizing data with statements like, “The majority of the students like or have...” or similar

**Teacher Moves**

1. Provide numerous examples and discussion to assist students in correctly defining them.
2. Provide additional experiences for students to fill in shape puzzles with pattern blocks or tangrams. Remind students to flip, turn, and/or rotate the shapes to fit the puzzles.
3. Physically compare one fourth to one half of the same whole along with discussion will help students make sense of the misconception.
4. Ensure students limit categories to only three choices.
5. Make sure students know the total number of people (classmates) who will be answering the question.
6. Review and discuss summary statements. Share samples of summary statements.

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<p>statements.</p> <p>7. The vocabulary of comparison situations can cause confusion for students. While the words “more than” implies addition and “fewer than” implies subtraction, in comparison situations that is not always the case. For example, Patty has 16 tickets for the raffle. She has 8 fewer tickets than Marcos. How many more tickets does Marcos have?. Although the problem includes the word fewer, a student would actually add <math>16 + 8</math> to find the solution.</p> <p>8. Some students think it is not possible to add more than two numbers. Although they may be familiar with seeing addition equations with three or more addends, they do not write equations with three or more addends. The understanding that addition equations can contain more than two addends is important.</p> <p>9. Although subtraction is not commutative, it is important not to contribute to a potential student misconception by saying that you cannot take a larger number from a smaller number. It can cause later problems when students come to study integers because it is possible to take a larger number from a smaller number. The result will be a negative number.</p> <p>10. Students may confuse the order of parts of addition and subtraction equations.</p> <p>11. Some student may develop the misconception that the equal sign indicates the answer comes next or calls</p>	<p>7. Modeling with concrete objects to use the information by showing Patty’s tickets and 8 more will help students realize that this is actually an addition problem.</p> <p>8. Once students have had experience working with three addends, using concrete materials and drawings, they should have opportunities to write and solve equations with three or more addends.</p> <p>9. It is appropriate to say <math>8-5 \neq 5-8</math>.</p> <p>10. Write the terms addend, missing addend, and total on cards. Write an addition equation on the board and have students identify each part of the equation. Write a related addition equation reversing the order of the addends and have students identify each part of the equation. Write a related equation with a missing addend and have student repeat identifying each part of the equation with the vocabulary cards. Write the related subtraction facts having student identify each part of the subtraction equation. Discuss what is similar in each equation.</p> <p>11. Students should have experiences early on that reinforce that the equal sign indicates both sides of the equation represent the</p>
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<p>for the action of doing the mathematical operation. When students use calculators, pressing the equal key results in the answer can also cause this misconception.</p> <p>12. Watch for students who reverse digits in writing the numeral and do not demonstrate an understanding that 21 does not have the same value as 12.</p> <p>13. Students who do not know basic facts may be inaccurate computing two-digit numbers.</p> <p>14. Some students may subtract the digits in the tens place but ignore the digits in the ones place.</p>	<p>same amount. Using a balance scale or picture of a balance scale with the equal sign on the center helps students to understand that the equal sign means both sides are balanced. As teachers model writing equations or give students examples to solve, it is important to repeat that the equal sign means “the same as”. <u>It is appropriate in early experiences using the equal sign to have students read it as “the same as”</u></p> <p>12. When reversals occur, have students model each number, using straws or linking cubes to reinforce the place value of digits and to help students differentiate between the numbers.</p> <p>13. As the students continue to work on facts, physical models will help in adding two-digit numbers accurately. Be sure that all students have ample experience with adding physical models on place value charts, counting on by benchmark numbers (tens and ones), using a hundreds chart, and using ten frames as appropriate. Make explicit connections among physical models, strategies, and written format.</p> <p>14. Ask them to describe what they are subtracting in terms of place value. For example, in subtracting 70 - 40 students should say they are taking 4 tens from 7 tens. Have them put concrete models on the place value chart and then subtract or physically remove the 4 tens from the 7 tens. They describe the difference as 3 tens. Ask them how to write 3 tens (30) and how many ones are in that number. They should explain why there are 0 ones and why it is necessary to put the digit 0 in the ones place.</p>
<b><u>Vocabulary and Representations</u></b>	
<b>Tier 2 (Academic Vocabulary)</b>	<b>Tier 3 (Domain Specific Vocabulary)</b>
actual/actually addition*	plus predict/prediction defining attributes equal sign*

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attribute* closed/unclosed compare compose cone corner cube cylinder decompose edge equal* equal shares face fraction* fourth graph* half identify information net partition	pyramid  quarter (one-fourth) rectangle* represent rotate/turn slide solid sphere square* strategies triangle*	equation* hexagon* numerals parallel lines* rectangular prism rhombus* three-dimensional trapezoid triangular prism two-dimensional vertex  *Smarter Balanced Vocabulary is focused on major mathematical concepts. (Not all possible words have been identified by SBAC)  + Students are not responsible for these vocabulary words at this grade level, however they should have some understanding of the mathematical concept.
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### Mathematics Teaching Practice Resources

1. **Bridges** - Reference Math Practices in Action Notes - The notes identify how particular mathematical practice is employed in a specific activity.
2. [Math Practices Teacher Question Starters](#)
3. [Illustrating the Standards for Mathematical Practice](#)
4. [Math Practice Standards Posters](#) Gr. K-1
5. [Implementing the Standards of Mathematics Practice](#)
6. [Modeling with Mathematics](#)
7. [Implementing Tasks that Promote Reasoning and Problem Solving](#)
8. [Teaching Math to Young Children Practice Guide](#) - The Teaching Math to Young Children practice guide presents five recommendations designed to capitalize on children's natural interest in math to make their preschool and early elementary school experience more engaging and beneficial.
9. [Number Talks Matter - Number Talks at a Glance](#) and Fluency without Fear
10. [National Library of Virtual Manipulatives](#)
11. [Illuminations interactive pattern block activity](#)
12. [Journal Prompts for Math](#)
13. [Bridges Interactive Math Manipulatives](#)
14. [Illustrative Math – Grade 1](#) - Resources and activities for the grade aligned by standard.
15. [How to Promote Acquisition of Math Facts – Intervention for struggling students](#)
16. [Beginning to Problem Solve with I Notice, I Wonder](#)
17. [Accountable Talk Moves](#)
18. [Sample Language Frames for Mathematics](#)
19. [Teacher/Student Actions](#)
20. [Fletcher Three Act Tasks](#)

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## 21. K-5 Math Teaching Resources

- [Putting Shapes Together](#)
- [Make a Triangle](#)
- [Which Has Fewer?](#)
- [Shape Graph](#)

### **Suggestions for Differentiation, Scaffolding and Intervention**

**Differentiation or Intervention Any teacher moves/strategies that address misconceptions can be used in differentiation or as interventions.**

**Math Teaching Practice Resources contain resources that provide opportunities for differentiation, intervention, or extension aligned to the strategies below.**

- [How to Select Math Intervention Content](#)
- [Coherence Map in Math](#) – The coherence map shows how standards within and across grades build upon each other. You can use the map to assist you in to build student understanding by linking together concepts within and across grades and identify gaps in a student's knowledge by tracing a standard back through its logical prerequisites.
- [CT Dept. of Education Evidence-based Practice Guides](#) – These guides provide links to “evidence-based activities, strategies and interventions (collectively referred to as 'interventions').”
- Evidenced-based strategies for supporting struggling students (U.S. Dept. of Education – [What Works Clearinghouse](#))
- Ensure instructional materials are systematic and explicit. In particular, they should include numerous clear models of easy and difficult problems, with accompanying teacher think alouds.
- Provide students with opportunities to solve problems in a group and communicate problem-solving strategies.
- Teach students about the structures of various problem types, how to categorize problems based on structure, and how to determine appropriate solutions for each problem type.
- Students should work with visual representations of mathematical ideas.
- If visual representations are not sufficient for developing accurate abstract thought and answers, use concrete manipulative first. (Include the next line for middle school and older students only) Although this can also be done with students in upper elementary and middle school grades, use of manipulatives with older students should be expeditious because the goal is to move toward understanding of and facility with visual representations and finally to the abstract.
- Provide carefully constructed questions to help direct students in determining what to do to solve problems, but they shouldn't be told how to reach the solution.
- Instruction during the intervention should be explicit and systematic. This includes providing models of proficient problem solving, verbalization of thought processes, guided practice, corrective feedback, and frequent cumulative review.
- Build the number in a group of 10 and ones as a model. Have the child build the number by copying the model and then describe the number that was built using appropriate vocabulary. Repeat with numbers that are more than 10 and less than 10.
- Children who have difficulty manipulating paper pattern blocks should use real pattern blocks.
- Ask questions that give hints about the geometric shapes and defining attributes.
- providing opportunities to manipulate, draw, construct, and represent two-dimensional shapes.
- Discussing examples and non-examples of two-dimensional shapes.

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- Discussing the characteristics of two-dimensional shapes so that students develop the concepts and language that allow them to explain why a shape belongs to a certain category.
- Provide opportunities to measure, fold, and cut two-dimensional shapes to investigate and identify their properties (e.g., fold a square to observe that all sides are equal).
- Provide experiences in constructing and manipulating shapes on a computer.
- Provide many experiences in sorting and classifying two-dimensional shapes and three-dimensional figures according to a variety of observable and defining attributes, and in discussing why a shape or figure belongs or does not belong to a certain category.
- Provide experiences in constructing models of three-dimensional figures.
- Have students create shapes using a geoboard and then transfer/draw the shapes on dot paper. Students then describe the shapes they have created.
- Folding shapes made from paper enables students to physically feel the shape and form the equal shares. Ask students to fold circles and rectangles first into halves and then into fourths. They should observe and then discuss the change in the size of the parts.
- Supply students with model shapes to follow as they create each shape. Assist with the first shape.
- Use a box, bag, or sock to place a secret shape in. The student puts their hand in the box, without peeking, and describes the shape using mathematical language while the other students try to guess what shape it is.
- Students will examine examples and non-examples of fractional parts. Students will identify the wholes that are correctly divided into requested fractional parts and those that are not. For each response, students should share their reasoning. In this activity, the wholes are already partitioned either correctly or incorrectly; the children are not involved in the partitioning.

#### Intervention for facts

- Provide about 10 minutes per session of instruction to build quick retrieval of basic arithmetic facts. Consider using technology, flashcards, and other materials for extensive practice to facilitate automatic retrieval.
- For students in K -2 explicitly teach strategies for efficient counting to improve the retrieval of mathematics facts.
- Teach students in grade 2-8 how to use their knowledge of properties, such as commutative, associative, and distributive to derive facts in their heads.
- [How to Promote Acquisition of Math Facts – Intervention for struggling students](#)
- [National Center on Intensive Intervention - Basic Facts](#)
- Once a strategy has been taught, it is important to reinforce it. The reinforcement or practice exercises should be varied in type and focus as much as the discussion of how students obtained their answers as on the answers themselves.
- Having students work in groups (as opposed to handing your bright students a workbook to work on when the classroom material isn't challenging enough) with other children ready for advanced material shows them that mathematics is not a solitary discipline -- mathematics is exciting and vibrant and creative and fun.
- Struggles with basic facts - need more experience with concrete and pictorial representations, including describing what their models represent to make connection to basic facts. Time and experience with developing strategies that are based on patterns and properties will help support learning the facts. It is important to give students time to learn and understand these concepts before procedural skill practice takes place.
- [Concrete, Representational, Abstract Progression](#)

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## EL Strategies

- [Colorin Colorado](#) – A Bilingual site for educators and families of English learners
- [Stanford University - Principles for Mathematics Instruction of ELs](#)
- [CT State Dept. Of Education English Learner Standards and Resources](#)
- Nonverbal responses, such as thumbs up, will help you check for understanding without requiring students to produce language. ELLs can participate and show that they understand a concept, or agree or disagree with an idea, without having to talk. This is especially important for students whose comprehension of English is more advanced than their ability to speak the language.
- Pre-teach vocabulary in ways that connect to students' prior knowledge.
- Display posters of graphic representations of vocabulary words.
- <http://www.cal.org/siop/lesson-plans/>
- Provide support to assist in explaining thinking with sentence starters and work banks.
- Use Work Place Sentence Frames or other sentence frames to assist students in math discourse.
- Speak slowly and use clear articulation. Reduce the amount of teacher talk and use a variety of words for the same idea. Exaggerate intonation and place more stress on important new concepts or questions. After asking a question, wait for a few moments before calling on a volunteer. Writing the question on the board will also help.
- English language learners are not always able to answer the questions posed to them, especially when the questions are open-ended. Provide support for and improve the participation of students with lower levels of English proficiency by using a prompt that requires a physical response, like "Show me a half, a third, etc.." or "Touch the larger number."
- [Increase academic language knowledge for English learner success.](#)

## Extension

- Students will work in pairs or groups with a set of 2-D shapes. They will take a few shapes from the set and compare and sort them. Each person or team has to describe the rule they used to sort the shapes.
- A pair or group of students selects one shape at random and places it in the center of the workspace. Their task is to find all other shapes that are like the target shape, but all according to the same rule. For example, if they say, "This one is like our shape because it has curved side and a straight side," then all other shapes that they put in the collection must have these properties. Challenge them to do a second sort with the same target shape but using a different property. Have students share their sorting rules with the class and show examples.
- Allow students to explore creating a cube with the straws and pipe cleaners.
- Have students work with a partner to build shapes on the geoboard. Partner 1 will call out attributes of a shape to partner 2 as he or she creates the shape on the geoboard. Then, once the shape is correctly made to partner 1's satisfaction, partner 2 will hand over the geoboard and give directions to partner 1 of how to divide the shape into equal parts.

## Interdisciplinary Connections

**Children's Literature \* Bridges recommended titles - # Titles embedded in Bridges Units**

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- \**The Greedy Triangle* by Marilyn Burns
- \*Rectangle by Robin Nelson
- \*Trapezoid by Ann-Marie Kishel
- \*Shapes, Shapes, Shapes by Tana Hoban
- \*Mouse Shape by Ellen Stoll Walsh
- \*So Many Circles, So Many Squares by Tana Hoban
- \*Give Me Half by Stuart J. Murphy
- \*The Josefina Story Quilt by Eleanor Coerr
- \*Sam Johnson and the Blue Ribbon Quilt by Lisa Campbell Ernst
- \*Sweet Clara and the Freedom Quilt by Deborah Hopkinson
- \*The Full House: An Invitation to Fractions by Dayle Ann Dodds
- \**When a Line Bends...A Shape Begins* by Rhonda Gowler Greene
- Captain Invincible and the Space Shapes* by Stuart J. Murphy
- A Fair Bear Share* by Stuart J. Murphy
- I Spy Shapes in Art* by Lucy Micklethwait
- \*Hexagon by Ann-Marie Kishel
- \*Rhombus by Sheila Rivera
- \*Triangle by Robin Nelson
- \*Let's Draw Shapes by Joanna Randolph
- \*Apple Fractions by Jerry Pallotta
- \*Fraction Action by Bruce McMillan
- \*The Wishing Club by Donna Jo Napoli
- \*The Patchwork Quilt by Valerie Flournoy

## ELA

### [SL.1.1](#)

Participate in collaborative conversations with diverse partners about *grade 1 topics and texts* with peers and adults in small and larger groups.

CCSS.ELA-LITERACY.SL.1.1.A

Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).

CCSS.ELA-LITERACY.SL.1.1.B

Build on others' talk in conversations by responding to the comments of others through multiple exchanges.

CCSS.ELA-LITERACY.SL.1.1.C

Ask questions to clear up any confusion about the topics and texts under discussion

## Art

Create artwork using geometric two- or three -dimensional shapes.

## Science

- Use counting and numbers to identify and describe patterns in the natural and designed world(s).
- Describe, measure, and/or compare quantitative attributes of different objects and display the data using simple graphs.
- Use quantitative data to compare two alternative solutions to a problem.