



Building Skills with Brick Math

A 10-Day Program to Sharpen Basic Math Skills

Decimals

Program Overview

During this **Building Skills with Brick Math** program, students dive deeply into decimals. They use a variety of learning techniques including manipulatives, drawing, verbal explanation, physical movement, and song. Students work with a partner, use the vocabulary fluently in math conversations, and assess themselves on their abilities.

The program is written in the following daily format:

1. Introduction to the topic
2. Teacher and students work together on the new concepts
3. Student practice
4. Movement related to concepts
5. Student independent practice
6. Content assessment
7. Story problems
8. Self-assessment on content and partnering

The Brick Math program is successful because students transfer knowledge from using manipulatives to drawing and verbal explanations.

Take the time your students need to learn each concept. Some classes will find one concept easily learned and a second concept much harder, requiring a slower pace. If all the daily activities are not completed during a session, you can choose to move the remaining activities to the following day or truncate an activity if you feel the students have fully learned the math concepts.

Schedule

10 Days

1.5 – 2 Hours Per Day

Day 1	Introducing Decimals <ul style="list-style-type: none">• Define decimal• Model decimals using bricks in a decimal grid• Model place value of decimals• Write decimals in expanded form• Discover similarities between whole number place values and decimal place values• Identify decimal numbers as fractions of 100	Vocabulary <ul style="list-style-type: none">• Decimal number• Mixed decimal• Decimal notation• Tenth• Hundredth• Thousandth• Expanded form
Day 2	Ordering Decimals <ul style="list-style-type: none">• Discover the value of decimal numbers• Show decimals in order of value• Determine whether the value of one decimal is greater or less than the value of another	Vocabulary <ul style="list-style-type: none">• Decimal number• Decimal notation• Tenth• Hundredth• Thousandth• Expanded form• Greater than symbol >• Less than symbol <
Day 3	Fraction Equivalents of Decimals <ul style="list-style-type: none">• Model decimal numbers using a 10 x 10 decimal grid• Identify decimal numbers as fractions of 100	Vocabulary <ul style="list-style-type: none">• Decimal number• Decimal notation• Tenth• Hundredth

Day 4	<p>Decimals as Money and Time</p> <ul style="list-style-type: none"> • Relate decimal notation to monetary amounts • Read a decimal as money • Use decimals in comparing the measurement of time 	<p>Vocabulary</p> <ul style="list-style-type: none"> • Decimal number • Decimal notation • Tenth • Hundredth • Thousandth • Expanded form
Day 5	<p>Adding and Subtracting Decimals</p> <ul style="list-style-type: none"> • Model adding and subtracting decimals using the decimal grid system and the place value system • Decompose decimals 	<p>Vocabulary</p> <ul style="list-style-type: none"> • Decimal number • Decimal notation • Tenth • Hundredth • Thousandth • Expanded form • Addition • Subtraction
Day 6	<p>Multiplying Decimals</p> <ul style="list-style-type: none"> • Multiply whole numbers by decimals • Multiply decimals by decimals to the tenths place • Multiply mixed decimals by decimals to the tenths place • Use a place value model for decimal multiplication • Use a grid model for decimal multiplication • Use a discovering wholes model for decimal multiplication • Use an array model for decimal multiplication 	<p>Vocabulary</p> <ul style="list-style-type: none"> • Decimal number • Decimal notation • Tenth • Hundredth • Thousandth • Multiplying • Multiplicand • Multiplier

Day 7	<p>Dividing Whole and Mixed Numbers by Decimals Using a Grid Model</p> <ul style="list-style-type: none"> • Divide a whole number by a decimal • Divide mixed decimals by a decimal • Model decimal division using a grid model 	<p>Vocabulary</p> <ul style="list-style-type: none"> • Decimal number • Decimal notation • Tenth • Hundredth • Thousandth • Quotitive division • Partitive (equal groups) division • Quotient • Dividend • Divisor
Day 8	<p>Dividing Whole and Mixed Numbers by Decimals Using a Place Value Model</p> <ul style="list-style-type: none"> • Divide a whole number by a decimal number • Divide a mixed decimal by a decimal • Use a place value model to divide decimals 	<p>Vocabulary</p> <ul style="list-style-type: none"> • Decimal number • Decimal notation • Tenth • Hundredth • Thousandth • Quotitive division • Partitive (equal groups) division • Quotient • Dividend • Divisor
Day 9	<p>Dividing Whole and Mixed Numbers by Decimals Using a Grid Covering Strategy</p> <ul style="list-style-type: none"> • Divide a mixed decimal by a decimal • Divide a decimal by a decimal • Divide a whole number by a decimal • Model the division of decimals using a grid-covering strategy • Interpret an “equal group” model to divide decimals 	<p>Vocabulary</p> <ul style="list-style-type: none"> • Decimal number • Decimal notation • Tenth • Hundredth • Thousandth • Quotitive division • Partitive (equal groups) division • Quotient • Dividend • Divisor

Day 10	Linking Decimals, Fractions, and Percentages <ul style="list-style-type: none"> • Find a percentage of a whole • Write an amount as a fraction, decimal, and percentage • Find the percent of a given amount in a word problem 	Vocabulary <ul style="list-style-type: none"> • Decimal number • Decimal notation • Percent
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Common Core Math Standards addressed in the program:

CCSS.MATH.CONTENT.5.NBT.A.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.

CCSS.MATH.CONTENT.5.NBT.A.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.

CCSS.MATH.CONTENT.5.NBT.A.3

Read, write, and compare decimals to thousandths.

CCSS.MATH.CONTENT.5.NBT.A.3.A

Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.

CCSS.MATH.CONTENT.5.NBT.A.3.B

Compare two decimals to thousandths based on the meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

CCSS.MATH.CONTENT.5.NBT.A.4

Use place value understanding to round decimals to any place.

CCSS.MATH.CONTENT.5.NBT.B.5

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

CCSS.MATH.CONTENT.5.NBT.B.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.

CCSS.MATH.CONTENT.5.NBT.B.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.

Note: If your school uses other standards, please refer to these standards as a guide.

Materials Needed:

- Brick Math Decimals Teacher Edition book
- Brick Math Decimals Student Edition book (one per student)
- Brick Math brick sets (one per student or one per pair of students)
- Math journal – can be created from lined paper stapled together with a tagboard cover or it may be a spiral notebook (one per student – will be used daily)
- Chart paper
- Markers (one set per student or pair of students)
- Colored pencils or crayons (one set per student or pair of students)
- Pencils (one per student)
- Sticky notes
- Cardstock
- Yarn
- Scissors (one per student)
- Optional: Foam sheets or shelf liner cut into rectangles approximately 12" x 18" (one sheet per student)

Before the first day:

1. Read the Introduction and How to Teach with Brick Math on pages 5-12 in the Decimal Teacher Edition.
2. Label all the Brick Math brick sets your students will use. Choose a system such as Set 1, Set 2, Set 3, etc., or Zebra, Elephant, Tiger, etc.
3. Assign one brick set to each student or pair of students. They will use this same set every day. This materials management step allows the student or the pair to be

responsible for their pieces. At the end of each day, the students will inventory one compartment of bricks in the box at your direction.

4. Students will need the following supplies:

- One Brick Math Decimals Student Edition book per student. If you are using PDFs, you will need to make copies of all the specific pages in each day's lesson so students can correctly show and explain their work and make the knowledge transfer from manipulatives to drawings and verbal explanations.
- Crayons or colored pencils (one set per student or pair of students)
- Math journals and pencils (one per student)
- Cardstock
- Tagboard or cardstock (3-4 per student)
- Yarn
- Scissors (one per student)
- Optional: One foam sheet or shelf liner cut into 12" x 18" rectangles per student. These sheets help keep the bricks from sliding off desks and tables.

Note: There are blank baseplate paper templates on pages 106-108 in the Decimal Teacher Edition book. They may be helpful for the daily story problem activities. Make additional copies of blank baseplate paper as needed.

Day 1 – Introducing Decimals

Preparation:

- Read pages 13-14 in the Brick Math Decimal Teacher Edition
- 10 feet of yarn for each group of 4 students
- Scissors (one per student)

Welcome

Tell the students something similar to the following:

Welcome! We are going to do a lot of interesting activities this week. We are going to build with LEGO® Bricks, work with a partner, create a team name, exercise with numbers, and more. Are you ready to get started?

Show the students a Brick Math brick set.

Say:

First, I want to show you the brick set. What colors do you see? Each color has a name. Each of you has a name. We need to learn all the names of the people in our class and the names of the bricks. I would like you to sit in a large circle. Each person will say his or her name. Then, please choose one brick from the set. Tell us which color brick you chose and something about the piece.

I will start.

My name is _____. I chose a purple brick because purple is the same color as my favorite flower.

Go around the room with the brick set so each student can select a brick. After each person has said his or her name and chosen a brick, have the class repeat the names. For example: “Mrs. Smith, Paula, Alan, Rebecca.” Then, if the next child is Ben, you would all say together: “Mrs. Smith, Paula, Alan, Rebecca, Ben.” When all the students have said their names, have the students who chose a particular color stand with their bricks in their hands.

Say:

Everyone who chose a purple brick, please stand. Let’s see if we can remember their names. Together, let’s say the names of the children who are standing.

Say all the students’ names, then have them sit down. Continue with different colors until all the children have stood and been called by name.

Look at the shapes of the bricks chosen. Explain to the students how the shapes also have names.

Explain to students how to name the bricks. Start with your brick. Perhaps you chose a 2x2 brick. Show students your brick. If you want, pass it around.

Say:

This is called a 2x2 brick because it is a square with 2 studs or bumps on one side (width) and 2 studs or bumps on another side (length).

Show students a 1x1 brick.

Say:

Can you guess what this brick is called? It has 1 stud in width and 1 stud in length – but it has a total of only 1 stud.

Make sure students understand that it is a 1x1 brick. Then show students a 1x6 brick. Continue to go through the bricks until students can do a good job of naming the bricks.

Ask the students to go around the circle and tell the name of the brick they chose. If a student is not sure or names it incorrectly, ask the student to count the width and length in studs, then help with the correct name.

When all the bricks have been named, ask the students to put the bricks into the proper location in the set. Their pieces should match the compartment or area in the container so the brick “family” will be all together.

Parts of a Whole

A decimal represents a part of a whole. The word decimal has “dec” as part of the word. The “dec” means ten. So, decimals represent segments of ten. So, if one is divided into ten parts, each part is called a tenth. If a tenth is divided into ten parts, there are 100 parts. Each of those is called a hundredth. Notice the “th” at the end of the ten and the end of the hundred.

Have 4 students make a group. Give each group 4 pairs of scissors and one piece of yarn that is 10 feet long.

Ask students to cut the yarn into ten equal pieces. Ask the class what one of the pieces represents. [one-tenth of the yarn]

Ask students to each cut one of the tenths into 10 equal pieces. Ask the class what one of the pieces represents. [one-hundredth of the yarn]

Ask students which piece of yarn was larger, the tenth or the hundredth. [tenth]
Ask students which piece of yarn was smaller, the tenth or the hundredth. [hundredth]
Tell students that the "th" at the end of the tenth and the hundredth is very important. It triggers them to remember that one-tenth is ten times larger than one hundredth.

Ask students to look around the room and find things that could be divided into tenths.
Ask students to think about money. Can a dollar be divided into ten equal parts? [Yes, dimes]
Ask students if a dime can be divided into equal parts. [Yes, pennies]

Are you ready to work with a partner and do some fun building and working with decimals?

Math Journals

Give each student a spiral notebook or lined paper that has been stapled together with a tagboard cover.
Give students 5-10 minutes to decorate the covers with markers or colored pencils.
Tell students they will be using the math journal every day.

Working with a Partner

Ask students their favorite thing about working with a partner. Then ask them what is the *best* way to work with a partner. Help students create answers like the following:

- Partners share the work, but neither person does the other one's work.
- Partners learn together and can help each other learn.
- Partners communicate (talk) kindly with each other.
- Partners care about each other.
- Partners do not give each other the answers but help the other person understand how to find an answer.

Create a set of Partner Rules and put them on chart paper and display them in the classroom so you can refer to them as needed.

Choose two students to be partners and assign them a place to sit at desks or tables. Students of the same ability level tend to work well together. Have each set of partners move to that location as you assign them. Give the pair of students their Brick Math materials (either one set for two people or one set per person.) Tell each group that they always get set #X when it is time to gather materials. Tell the class that each team is responsible for all the bricks being returned to the set every time the set is used.

When all the students have their sets, give every student a 20x20 baseplate.

Say:

You will work together every day. Being a partner is an important responsibility. You need to help one another and be kind to your partner.

Students take bricks from the divided box as needed.

Introducing Decimals

Part 1: Show Them How

Place Value Model

Follow the instructions on pages 14-15. Students complete page 5 as they learn how to use the Place Value Model.

Follow the instructions on pages 15-16 in the Brick Math Decimal Teacher Edition. Complete Problem #1, 1-3.

Students complete page 6, Problem #1, 1-3 in the Brick Math Decimals Student Edition.

Follow the instructions on page 16 in the Brick Math Decimal Teacher Edition. Complete Problem #2, 1-4.

Students complete page 6, Problem #2, 1-4 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 16-18 in the Brick Math Decimal Teacher Edition. Complete Problem #3, 1-6.

Students complete pages 7-10, Problem #3, 1-6 in the Brick Math Decimals Student Edition.

Move with Music

Time for some music!

Have students stand and find places with enough room to move around a bit.

Use any decimal song to have the students count and move around. The idea is for students to move and sing and have a chance to get their brains ready to work again after a short brain break.

Have students return to their desks/tables with their partners.

Part 2: Show What You Know

Read aloud the instructions on page 19 in the Brick Math Decimal Teacher Edition.

Students complete page 11, #1 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 19 in the Brick Math Decimal Teacher Edition.

Students complete page 12, #2 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 20 in the Brick Math Decimal Teacher Edition.

Students complete page 13, #3 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 20 in the Brick Math Decimal Teacher Edition.

Commented [KR1]: Add decimal song

Students complete page 13, #4 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 20 in the Brick Math Decimal Teacher Edition.
Students complete page 14, #5 in the Brick Math Decimals Student Edition.

Content Assessment

Students complete Assessment #1 on page 15 in the Brick Math Decimals Student Edition.
Discuss the answers with the class. Help students improve their answers as needed.

Students complete Assessment #2 on page 15 in the Brick Math Decimals Student Edition.
Ask partners to check the work but explain that they should not touch the brick model or write anything on another person's paper. They should only discuss this with their partners. Walk around the room and check students' work.

Students complete Assessment #3 on page 16 in the Brick Math Decimals Student Edition.
Ask partners to check the work but explain that they should not touch the brick model or they write anything on another person's paper. They should only discuss this with their partners. Walk around the room and check students' work.

Students complete Assessment #4 on page 16 in the Brick Math Decimals Student Edition.
Ask partners to check the work but explain that they should not touch the brick model or they write anything on another person's paper. They should only discuss this with their partners. Walk around the room and check students' work.

Students complete Assessment #5 on page 16 in the Brick Math Decimals Student Edition.
Ask partners to check the work but explain that they should not touch the brick model or they write anything on another person's paper. They should only discuss this with their partners. Walk around the room and check students' work.

Story Problem

Tell students a story problem like the following:

Juan and Tavon were working on decimals using bricks. Juan built a place value model with a 1x2 brick, two 1x3 bricks, and three 1x4 bricks. Tavon built a model using the decimal grid. He had 3 rows of 10 studs and 1 row with 2 studs.

What decimal numbers were represented by Juan and by Tavon?

Help students complete the story problem.

Have each pair work together to create a new story problem and a brick model that uses the place value model and/or the decimal grid model. As time allows, have students share their stories and models with at least one other team.

Inventory Check

Have students place all the bricks they have used today back into the correct compartments of the Brick Math box.

Have the students remove all the 1x2 bricks from the box and count them. After the students have verified the number (30), they replace those bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Self-Assessment

Remind students about the partner's rules they created earlier today. Refer to the Partner's Rules Chart to refresh their memories.

Ask students to use their journals to complete the self-assessment. Students need colored pencils to complete the self-assessment.

Ask students to write the word "partner" in the journals. Read aloud the statements to the students and have them draw the correct color brick.

Students should draw a specific color brick after the word "partner" based on the following:
Say:

I need to work on being a better partner. I did not listen to and help my partner as I should have.

If this describes you today, draw an orange brick after the word "partner."

I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work.

If this describes you today, draw a green brick after the word "partner."

I was a very good partner today. I helped my partner by checking their work and not by doing their work. If this describes you today, draw a blue brick after the word "partner."

Ask students to write “I can model decimals two ways” in the blank space at the bottom of page 15.

Students should draw a specific color brick after the words “I can model decimals two ways” based on the following self-assessment.

Say:

I need help modeling decimals in two ways. If this describes you today, draw an orange brick after the words “I can model decimals two ways.”

I can model decimals in two ways. If this describes you today, draw a green brick after the words “I can model decimals two ways.”

I can help others model decimals in two ways. If this describes you today, draw a blue brick after the words “I can model decimals two ways.”

Day 2 – Ordering Decimals

Preparation:

- Read pages 21-22 in the Brick Math Decimal Teacher Edition
- Find a music video online that helps students start thinking about decimals. [Decimal Place Value Song by Numberock](#) is one example.
- One piece of tagboard for each team of students
- Markers (one per pair of students)
- The following numbers need to be on $\frac{1}{4}$ sheet of paper:
 - .23, .2, .03
 - .46, .4, .06
 - .59, .5, .09
 - .27, .2, .07
 - .48, .4, .08
 - .55, .5, .05
 - .32, .3, .02
 - .64, .6, .04
 - .95, .9, .05

Welcome

Welcome students back to Day 2. Ask students if they can name any decimal. Have several students name a decimal.

Ask students if they can remember who their partner is. Ask students if they can remember how the two ways to model a decimal. [place value model and decimal grid model]

Tell students that today they will create team names and decimals.

Have students find their partners and get markers or colored pencils and one piece of tagboard per team.

Show students an example of a team name and an addition problem. For example,

All Stars

.9 and .37

Partners work together to determine a team name and then write the name in the middle of the tagboard. Partners should determine a decimal to represent each person on the team.

Have students draw the place value models for the decimal numbers chosen. In the example above, they would draw .9 on the left side and .37 on the right side using place value models.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students share one good thing they saw a partner do yesterday.

Have students get the correct Brick Math set(s) and 2 baseplates for their team.

Part 1: Show Them How

Follow the instructions on page 22 in the Brick Math Decimal Teacher Edition. Students complete page 17.

Follow the instructions on page 23 in the Brick Math Decimal Teacher Edition. Complete Problem #1, 1-3.
Students complete page 18, Problem #1, 1-3 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 23-24 in the Brick Math Decimal Teacher Edition. Complete Problem #2, 1-4.
Students complete page 19, Problem #2, 1-4 in the Brick Math Decimals Student Edition.

Follow the instructions on page 24 in the Brick Math Decimal Teacher Edition. Complete Problem #3, 1-4.
Students complete page 20, Problem #3, 1-5 in the Brick Math Decimals Student Edition.

Follow the instructions on page 25 in the Brick Math Decimal Teacher Edition. Complete Problem #4, 1-3.
Students complete page 21, Problem #4, 1-2 in the Brick Math Decimals Student Edition.

Follow the instructions on page 18 in the Brick Math Decimal Teacher Edition. Complete #5.
Students complete page 17, #5 in the Brick Math Decimals Student Edition.

Move with Decimals

Have students get up from their places at the tables/desks because it is time for some movement.

Give each student a paper with a decimal number on it. Some students will have a tenth or a hundred on their paper. Examples: .4 or .03

Some students will have a decimal with both tenths and hundreds. Examples: .43 or .57

Students move around the room to find tenths and hundredths that can create the decimal containing both.

Check the answers and gather the papers.

Give students the papers again, making sure students do not have the same numbers as last time.

Students move around the room to find tenths and hundredths that can create the decimal containing both.

Check the answers and gather the papers.

Have students return to their desks/tables with their partners.

Part 2: Show What You Know

Read aloud the instructions on page 26 in the Brick Math Decimal Teacher Edition. Students complete page 22, Part 2, #1 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 26 in the Brick Math Decimal Teacher Edition. Students complete page 23, #2 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 27 in the Brick Math Decimal Teacher Edition. Students complete page 24, #3 in the Brick Math Decimals Student Edition.

Content Assessment

Tell students the following:

Students will complete the Content Assessment on their own. However, they will ask their partners to check the work *after* they have completed the assessment. Partners check the work but they should not change their partner's models nor write anything on another person's paper. Partners discuss the differences they might have on an answer.

Students complete Assessment #1 on page 25 in the Brick Math Decimals Student Edition. Discuss the answers with the class. Help students improve their answers as needed.

Students complete Assessment #2 on page 25 in the Brick Math Decimals Student Edition.

Students complete Assessment #3 on page 25 in the Brick Math Decimals Student Edition.

Story Problem

Tell students a story problem like the following:

Julia and Donata were playing a game with decimals. They would roll dice and create decimal numbers. When they had four decimal numbers, Julie

and Donata would order them from least to greatest. They created the following decimal numbers: 0.163, 0.26, 1.63, 0.026

Can you help them order the decimals? What math symbols would go between the numbers?

Help students complete the story problem and order the decimal numbers.

Have each pair work together to create a new story problem that they can model with bricks.

As time allows, have students share their stories and models with at least one other team.

Inventory Check

Have students place all the bricks they have used today back into the correct compartments of the Brick Math box.

Have the students remove all the 2x2 bricks from the box and count them. After the students have verified the number (20), they replace those bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Self-Assessment

Students need crayons to complete.

Ask students to write the word “partner” in their journals. Read aloud the statements to the students and have them draw the correct color brick.

Students should draw a specific color brick after the word “partner” based on the following:
Say:

I need to work on being a better partner. I did not listen to and help my partner as I should have.

If this describes you today, draw an orange brick after the word “partner.”

I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work.

If this describes you today, draw a green brick after the word “partner.”

I was a very good partner today. I helped my partner by checking their work and not by doing their work. If this describes you today, draw a blue brick after the word "partner."

Ask students to write "I can order decimals" in their journals.

Students should draw a specific color brick after the words "I can order decimals" based on the following:

Say:

I need help ordering decimals. If this describes you today, draw an orange brick after the words "I can order decimals."

I can order decimals. If this describes you today, draw a green brick after the words "I can order decimals."

I can help others order decimals. If this describes you today, draw a blue brick after the words "I can order decimals."

Day 3 – Fraction Equivalents of Decimals

Preparation:

- Read pages 28-29 in the Brick Math Decimal Teacher Edition
- Write in large numbers on chart paper or the board the following decimal numbers:
.47, .82, .06, .5, 1.03, 2.39
- On sticky notes, write one of the following decimals as large as possible:
.50, .2, .34, .21, .12, 1.1, 1.01, 2.2, .05, 1.001
- On index cards, write one of the following: (1 set of index cards is needed for each group of 5-6 students)
.20, .42, .423, 4.23, .10, .25

Welcome

Welcome students to Day 3.

Review how to name decimals.

Use the decimals you have written on chart paper or the board:

- .47 [forty-seven hundredths]
- .82 [eighty-two hundredths]
- .06 [six hundredths]
- .5 [five tenths]
- 1.03 [one and three hundredths]
- 2.39 [two and thirty-nine hundredths]

Ask students to order the following decimals from least to greatest:

.5, .2, .34, .21, .12, 1.1, 1.01, 2.2, .05, 1.001

Have individual students come forward and move one paper at a time to a new position until all the decimals are in order. Each student can only come forward one time.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students share one good thing they did as a partner yesterday.

Have students find their partners and go to their places at the desks or tables. Have students get the correct Brick Math set(s) and two baseplates for their team.

Part 1: Show Them How

Follow the instructions on pages 29-30 in the Brick Math Decimal Teacher Edition. Have students build the decimal grid model.

Follow the instructions on pages 30-31 in the Brick Math Decimal Teacher Edition. Complete Problem #1, 1-4.

Students complete pages 26-27, Problem #1, 1-4 in the Brick Math Decimals Student Edition.

Follow the instructions on page 31 in the Brick Math Decimal Teacher Edition. Complete Problem #2, 1-2.

Students complete page 28, Problem #2, 1-2 in the Brick Math Decimals Student Edition.

Follow the instructions on page 32 in the Brick Math Decimal Teacher Edition. Complete Problem #3, 1-2.

Students complete page 29, Problem #3, 1-2 in the Brick Math Decimals Student Edition.

Move to a Decimal

Have students stand. Group students into teams of 5-6.

Give each group index cards with decimals (.20, .42, .423, 4.23, .10, .25)

Have them order the decimals from greatest to least.

Ask students to write on the back of the index card the fractional equivalent of the decimal.

Have two teams compare their answers, both the ordering and fractional equivalents.

Collect the cards for later use.

Have students return to their tables or desks with their partners.

Part 2: Show What You Know

Read aloud the instructions on page 32 in the Brick Math Decimal Teacher Edition

Students complete page 30, Part 2, #1 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 33 in the Brick Math Decimal Teacher Edition.

Students complete page 31, #2 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 33 in the Brick Math Decimal Teacher Edition.

Students complete page 32, #3 in the Brick Math Decimals Student Edition.

Content Assessment

Tell students the following:

Students will complete the Content Assessment on their own. However, they will ask their partners to check the work *after* they have completed the assessment. Partners check the work but they should not change their partner's models nor write anything on another person's paper. Partners discuss the differences they might have on an answer.

Students complete Assessment #1 on page 33 in the Brick Math Decimals Student Edition.

Students complete Assessment #2 on page 34 in the Brick Math Decimals Student Edition.

Students complete Assessment #3 on page 35 in the Brick Math Decimals Student Edition.

Story Problem

Tell students a story problem like the following:

Cecilia and Erin wanted to make a decimal game. They wrote six decimal numbers on index cards: 1.2, 2.3, .45, 8.07, .006, 20.034

Then, they wanted to write the fractional equivalents on the back of the cards.

Can you help Cecilia and Erin complete the game cards by writing the fractional equivalents?

Help students complete the story problem.

Have each pair work together to create a new story problem that uses decimals and fractional equivalents.

As time allows, have students share their stories and models with at least one other team.

Inventory Check

Have students place all the bricks they have used today back into the correct compartments of the Brick Math box.

Have the students remove all the 2x3 bricks from the box and count them. After the students have verified the number (10), they replace those bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Self-Assessment

Ask students to use the blank space at the bottom of page 34 in the Brick Math Decimals Student Edition. Students need crayons to complete.

Ask students to write the word “partner” in the blank space at the bottom of page 34. Read aloud the statements to the students and have them draw the correct color brick.

Students should draw a specific color brick after the word “partner” based on the following:
Say:

I need to work on being a better partner. I did not listen to and help my partner as I should have.

If this describes you today, draw an orange brick after the word “partner.”

I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work.

If this describes you today, draw a green brick after the word “partner.”

I was a very good partner today. I helped my partner by checking their work and not by doing their work. If this describes you today, draw a blue brick after the word “partner.”

Ask students to write “I can write the fractional equivalent of a decimal” in the blank space at the bottom of page 34.

Students should draw a specific color brick after the words “I can write the fractional equivalent of a decimal” based on the following:

Say:

I need help writing the fractional equivalent of a decimal. If this describes you today, draw an orange brick after the words “I can write the fractional equivalent of a decimal.”

I can write the fractional equivalent of a decimal. If this describes you today, draw a green brick after the words “I can write the fractional equivalent of a decimal.”

I can help others write the fractional equivalent of a decimal. If this describes you today, draw a blue brick after the words “I can write the fractional equivalent of a decimal.”

Day 4 – Decimals as Money and Time

Preparation:

- Read pages 34-35 in the Brick Math Decimal Teacher Edition
- Cards with the words “Thousandths,” “Tenths,” and “Hundredths” and a card showing a large decimal point
- Optional: Stopwatch (or cell phone with stopwatch app) that shows thousandths of a second.

Welcome

Welcome students to Day 4. Ask students what a decimal represents. [A part of a whole]

Ask students how a fraction and a decimal are alike. [They represent a part of a whole]

Ask students how decimals are arranged. [Tenths, hundredths, thousandths, etc.,]

Ask students if they have ever watched the Olympics or a timed race in running or swimming.

Ask students if they remember how the time was kept. [minutes, seconds, and tenths, hundredths, and thousandths of a second] Tell students one second was split into a thousand parts to help determine a winner.

Optional: If a stopwatch or cell phone is available, have students time a group of 8-10 students passing one brick from person to person down a line. Determine which group of students can pass the brick the fastest. You are the timekeeper who says "go" and then starts and stops the stopwatch/cell phone app. Give each group three turns. Write the times on the board or chart paper. Have students read the time after you have posted. For example, 2.457 seconds would be read 2 and four-hundred fifty-seven thousandths' seconds.

Have students find their partners and go to their places at the desks or tables.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students share something with their partners that they like about working with that person.

Have students find their partners and go to their places at the desks or tables. Have students get the correct Brick Math set(s) and two baseplates for their team.

Part 1: Show Them How

Follow the instructions on pages 35-36 in the Brick Math Decimal Teacher Edition. Complete Part 1 Review and Place Value Model.

Students complete page 36, Part 1 Review and Place Value Model in the Brick Math Decimals Student Edition.

Follow the instructions on page 36 in the Brick Math Decimal Teacher Edition. Complete #1.

Students complete pages 36-37, #1 in the Brick Math Decimals Student Edition.

Follow the instructions on page 37 in the Brick Math Decimal Teacher Edition. Complete #2.

Students complete page 37, #2 in the Brick Math Decimals Student Edition.

Follow the instructions on page 37 in the Brick Math Decimal Teacher Edition. Complete #3.

Students complete page 38, #3 in the Brick Math Decimals Student Edition.

Follow the instructions on page 38 in the Brick Math Decimal Teacher Edition. Complete #4.

Students complete page 39, #4 in the Brick Math Decimals Student Edition.

Move with Place Value

Tell students they are going to represent different values. Then place the cards you have prepared with Tenths, Hundredths, and Thousandths on the floor in the correct order.

Tell students they are going to line up behind the place values to make a three-digit number.

Use the number .431 as an example.

Choose one student at a time to position themselves behind the place value and tell what the value of the number is now. Then have the child sit down in that position so all children can see how many students are behind each place.

If the first child moves to the hundredth place, the value is .01 or one hundredth. If the second child moves to the thousandth place, the value is .011 or eleven thousandths. Continue until the value .431 is created. Have the students help each other position themselves and say the current value. The students not in the place value lines should verify the number of tenths, hundredths, or thousandths. The class should agree on the new value.

Take time to do several rounds, making certain that every child has participated at least twice.

Have students return to their tables or desks with their partners.

Part 2: Show What You Know

Read aloud the instructions on page 39 in the Brick Math Decimal Teacher Edition.
Students complete page 40, #1 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 40 in the Brick Math Decimal Teacher Edition.
Students complete page 41, #2 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 40 in the Brick Math Decimal Teacher Edition.
Students complete page 42, #3 in the Brick Math Decimals Student Edition.

Content Assessment

Tell students the following:

Students will complete the Content Assessment on their own. However, they will ask their partners to check the work *after* they have completed the assessment. Partners check the work but they should not change their partner's models nor write anything on another person's paper. Partners discuss the differences they might have on an answer.

Students complete Assessment #1 on page 43 in the Brick Math Decimals Student Edition.

Students complete Assessment #2 on page 44 in the Brick Math Decimals Student Edition.

Students complete Assessment #3 on page 45 in the Brick Math Decimals Student Edition.

Story Problem

Tell students a story problem like the following:

Davie and Howie were watching swimming races on television. They were impressed at how close the races were. In one race the top three times were: A - 25.99, B - 26.01, and C - 25.97. Help Davie and Howie order swimmers A, B, and C from first to third place.

Help students complete the story problem.

Have each pair work together to create a new story problem that they can model with bricks.

As time allows, have students share their stories and models with at least one other team.

Inventory Check

Have students place all the bricks they have used today back into the correct compartments of the Brick Math box.

Have the students remove all the 1x3 bricks from the box and count them. After the students have verified the number (20), they replace those bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Self-Assessment

Ask students to use their students to complete the self-assessment. Students need crayons or colored pencils to complete.

Ask students to write the word “partner” in their journals. Read aloud the statements to the students and have them draw the correct color brick.

Students should draw a specific color brick after the word “partner” based on the following:
Say:

I need to work on being a better partner. I did not listen to and help my partner as I should have.

If this describes you today, draw an orange brick after the word “partner.”

I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work.

If this describes you today, draw a green brick after the word “partner.”

I was a very good partner today. I helped my partner by checking their work and not by doing their work. If this describes you today, draw a blue brick after the word “partner.”

Ask students to write “I can use decimals as time or money” in the blank space at the bottom of page 44.

Students should draw a specific color brick after the words “I can use decimals as time or money” based on the following:

Say:

I need help using decimals as time or money. If this describes you today, draw an orange brick after the words "I can use decimals as time or money."

I can use decimals as time or money. If this describes you today, draw a green brick after the words "I can use decimals as time or money..."

I can help others use decimals as time or money. If this describes you today, draw a blue brick after the words "I can use decimals as time or money."

Day 5 – Adding and Subtracting Decimals

Preparation:

- Read pages 41-42 in the Brick Math Decimal Teacher Edition
- Write .629, 1.23, 0.863 on the board or chart paper
- Three sets of cards with the words “Thousandths,” “Tenths,” and “Hundredths” and a card showing a large decimal point
-

Welcome

Welcome students to Day 5. Tell them how proud you are of the work they have done so far. Ask students to correctly name the decimals you have written on the board or chart paper –

- .629 [six-hundred twenty-nine thousandths]
- 1.23 [one and twenty-three hundredths]
- 0.803 [eight-hundred three thousandths] (no “and” between eight-hundred and the three)

Ask students if the following decimal numbers are equivalent – you can write these beside the numbers on the board or chart paper.

.629, 0.629, .6290, 0.6290 [Yes, all are equivalent. Adding a zero in the place to the right of the last digit does not change the value. Adding a zero instead of a blank in the one's column adds zero, or nothing to change the value.]

Ask students to give some equivalent decimals to 1.23. [1.230, 01.23 (uncommon), 1.2300] (Sometimes students think they can delete the 0 between the 8 and the 3, which is incorrect. Having students read the decimal number aloud may help.)

Ask students to give some equivalent decimals to 0.803 [.803, 0.8030, .8030]

Tell students they are going to add and subtract decimal numbers. Ask students what will be important about adding and subtracting decimals. [Answers will vary, but be sure that someone mentions place value – or lining up the numbers so all the decimal points are above one another]

Use the example numbers you have on the board. It is especially nice if you have NOT lined them up initially. Then, you can show students how to write the same numbers as if you were going to add them.

.629
1.23
0.803

You may also find that adding a 0 after the 1.23 to make it 1.230 helps some students. Remind them of the equivalent fraction work they just completed.

Have students find their partners and go to their places at the desks or tables.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students share which rule they think is the most important.

Have students get the correct Brick Math set(s) and two baseplates for their team.

Part 1: Show Them How

Follow the instructions on pages 42-43 in the Brick Math Decimal Teacher Edition. Complete the Reviews.

Students complete page 46, the Reviews in the Brick Math Decimals Student Edition.

Follow the instructions on pages 43-44 in the Brick Math Decimal Teacher Edition. Complete Problem #1, 1-5.

Students complete pages 46-47, Problem #1, 1-5 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 44-45 in the Brick Math Decimal Teacher Edition. Complete Problem #2, 1-4.

Students complete page 48, Problem #2, 1-4 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 45-46 in the Brick Math Decimal Teacher Edition. Complete Problem #3, 1-4 decimal grid model, 1-4 place value model.

Students complete pages 49-50, Problem #3, 1-4 decimal grid model, and 1-4 place value model in the Brick Math Decimals Student Edition.

Follow the instructions on pages 47-49 in the Brick Math Decimal Teacher Edition. Complete Problem #4, 1-7.

Students complete pages 51-52, Problem #4, 1-7 in the Brick Math Decimals Student Edition.

Move to Add and Subtract Decimals

The activity will use three sets of cards with a decimal point, tenths, hundredths, and thousandths.

Have students stand and arrange students so that some of the students create the decimal number .235 by sitting behind the appropriate cards.

Ask the class to give the expanded form of the decimal .235. $[\text{.200} + \text{.030} + \text{.005}]$

Arrange a second group of students to sit behind the appropriate cards and create the decimal number .142.

Ask the class to give the expanded form of the decimal .142. $[\text{.100} + \text{.040} + \text{.002}]$

Ask the class how they could add the two numbers together. In this case, the students could move together behind the third set of cards so the tenths all move to the tenths place, the hundredths to the hundredths place, and the thousandths to the thousandths place. Ask students to read aloud the sum. $[\text{.377} - \text{three-hundred seventy-seven thousandths}]$

Ask students to return to their original positions to create the decimals .235 and .142. Tell students they are going to subtract.

Have students start in the thousandth column. $5 - 2 = 3$ so three of the students from the thousandths column in .235 move to the difference area. The remaining students in the thousandths column stand with the rest of the class.

Ask students what needs to be done to subtract in the hundredths column. [Decompose or borrow – so one-tenth becomes ten hundredths.] Have ten students from the class (use students who have not been in the decimal numbers yet first) move behind the hundredths column in the .235 decimal and have a seat. One person from the tenth column leaves and fist bumps all ten of the students moving to the hundredth column. Now there should be one person left in the tenth's column and thirteen people in the hundredth column.

Students can now subtract 4 from 13 and get a difference of 9. Nine people move to the hundredths column of the difference and the rest of the students in the hundredths column return to the class.

One student remains in the tenth column for both decimals. $1 - 1 = 0$, so both students return to the class.

Focus on the difference [.93 or ninety-three hundredths]

$$.235 - .142 = .93$$

Complete the activity again using the numbers 1.087 and .913. First, add and then subtract. In addition, students will have to carry over, so have ten students leave the thousandth's place and fist bump one person moving to the hundredth's place. Then have ten students leave the hundredth's place and fist bump one person moving to the tenth's place. Finally, have ten students leave the tenth's place and fist bump one person moving to the one's place.

[One and eighty-seven thousandths plus nine-hundred thirteen-thousandths equals two OR two and no thousandths.]

$$1.087 + .913 = 2.000 \text{ or } 2$$

In subtraction, students will have to decompose the one to make ten-tenths. Have ten students move to the tenth's place and fist bump the one person leaving the one's place.

[One and eighty-seven thousandths minus nine-hundred thirteen-thousandths equals one-hundred seventy-four thousandths]

$$1.087 - .913 = .174$$

Have students return to their tables or desks with their partners.

Part 2: Show What You Know

Read aloud the instructions on pages 49-51 in the Brick Math Decimal Teacher Edition. Students complete page 53, #1 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 52 in the Brick Math Decimal Teacher Edition. Students complete page 54, #2 in the Brick Math Decimals Student Edition.

Read aloud the instructions on pages 52-53 in the Brick Math Decimal Teacher Edition. Students complete page 55, #3 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 53 in the Brick Math Decimal Teacher Edition. Students complete page 56, #4 in the Brick Math Decimals Student Edition.

Content Assessment

Tell students the following:

Students will complete the Content Assessment on their own. However, they will ask their partners to check the work *after* they have completed the assessment. Partners check the work but they should not change their partner's models nor write anything on another person's paper. Partners discuss the differences they might have on an answer.

Students complete Assessment #1 on page 57 in the Brick Math Decimals Student Edition.

Students complete Assessment #2 on page 58 in the Brick Math Decimals Student Edition.

Students complete Assessment #3 on page 59 in the Brick Math Decimals Student Edition.

Story Problem

Tell students a story problem like the following:

Tonica and Gerri were counting money in a piggy bank. Tonica had 7 pennies and 6 dimes. Gerri had 3 dimes and 8 pennies. They want to purchase some chalk that costs \$.97 + tax. The tax is \$.05. Can they make the purchase? How much will they have left?

Build a place value model to help them know how much money they have altogether.

Help students complete the story problem and add their money. Write the sums and the expanded form in their journals. [$.67 + .38 = 1.05$ Expanded form is $1.00 + .05$]
[$.97 + .05 = 1.02$ Expanded form is $1.00 + .02$] Yes, they can purchase. They will have 3 cents left. [$\$1.05 - \$1.02 = \$.03$]

Have each pair work together to create a new story problem that they can model with bricks. As time allows, have students share their stories and models with at least one other team.

Ask students to write the expanded form of their sums in their journals.

Inventory Check

Have students place all the bricks they have used today back into the correct compartments of the Brick Math box.

Have the students remove all the 1x1 bricks from the box and count them. After the students have verified the numbers (100, or 25 of each color), they replace those bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Self-Assessment

Ask students to use their journals. Students need crayons or colored pencils to complete.

Ask students to write the word “partner” in their journals. Read aloud the statements to the students and have them draw the correct color brick.

Students should draw a specific color brick after the word “partner” based on the following:

Say:

I need to work on being a better partner. I did not listen to and help my partner as I should have.

If this describes you today, draw an orange brick after the word “partner.”

I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work.

If this describes you today, draw a green brick after the word “partner.”

I was a very good partner today. I helped my partner by checking their work and not by doing their work. If this describes you today, draw a blue brick after the word “partner.”

Ask students to write “I can add and subtract decimals” in their journals.

Students should draw a specific color brick after the word “I can add and subtract decimals” based on the following:

Say:

I need help adding and subtracting decimals. If this describes you today, draw an orange brick after the word “I can add and subtract decimals.”

I can add and subtract decimals. If this describes you today, draw a green brick after the word “I can add and subtract decimals.”

I can help others add and subtract decimals. If this describes you today, draw a blue brick after the word “I can add and subtract decimals.”

Day 6 – Multiplying Decimals

Preparation:

- Read pages 54-55 in the Brick Math Decimal Teacher Edition
- 23 x 17 written on chart paper or the board
- 40 Sticky notes of two different colors
- On chart paper or the board, draw a 10 x 10 grid with spaces about the size of sticky notes

Welcome

Welcome students to Day 6. Tell students they did a great job with adding and subtracting decimals. They are ready to multiply decimals.

Ask them how to multiply the problem:

$$\begin{array}{r} 23 \\ \times 17 \\ \hline \end{array}$$

Students should be able to explain how to multiply the numbers.

$$\begin{array}{r} 23 \text{ [twenty-three times seventeen]} \\ \times 17 \\ \hline 161 \\ \underline{23} \\ 391 \end{array}$$

Ask students if the problem were in decimals, what might change.

$$\begin{array}{r} 2.3 \text{ [Two and three-tenths times seventeen hundredths]} \\ \times .17 \\ \hline 161 \\ \underline{23} \\ .391 \end{array}$$

.391 – Where would the decimal point go? There are three digits to the right of the decimal point in the two numbers being multiplied, 3, 1, & 7. Therefore, we have to move the decimal point three spaces to the left of the last digit. [Three-hundred ninety-one thousandths]

Have students find their partners and go to their places at the desks or tables.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students draw a picture of their team and how the two of them work well together.

Have students get the correct Brick Math set(s) and two baseplates for their team.

Part 1: Show Them How

Follow the instructions on pages 55-56 in the Brick Math Decimal Teacher Edition. Complete the Review.

Students complete page 60, Review multiplying a decimal by a whole number using the place value model in the Brick Math Decimals Student Edition.

Follow the instructions on pages 56-57 in the Brick Math Decimal Teacher Edition. Complete Problem #1, 1-4.

Students complete pages 60-61, Problem #1, 1-4 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 57-58 in the Brick Math Decimal Teacher Edition. Complete Problem #2, 1-4.

Students complete pages 61-62, Problem #2, 1-4 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 58-59 in the Brick Math Decimal Teacher Edition. Complete Problem #3, 1-5.

Students complete pages 62-64, Problem #3, 1-5 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 60-61 in the Brick Math Decimal Teacher Edition. Complete Problem #4, 1-4.

Students complete page 65, Problem #4, 1-5 in the Brick Math Decimals Student Edition.

Follow the instructions on page 61 in the Brick Math Decimal Teacher Edition. Complete Problem #5, 1-3.

Students complete page 66, Problem #5, 1-3 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 62-63 in the Brick Math Decimal Teacher Edition. Complete Problem #6, 1-5.

Students complete page 67, Problem #6, 1-5 in the Brick Math Decimals Student Edition.

Move to Multiply

Have students stand in an open area of the room. Have the chart paper or board with the 10 x 10 grid ready for use.

Give all students a couple of sticky notes, at least one of each color. Depending on class size, students may have 3 or 4 sticky notes.

Tell students they are going to use the sticky notes to model a problem and determine the answer. Each sticky note represents one hundredth. Ask students how many sticky notes would be used to make $.2$ or two-tenths. [$.2 = .20$, twenty-hundredths is equal to two-tenths, so 20 sticky notes would be equal to two-tenths]

Have students use one color sticky note to make the decimal $.2$ vertically on the grid. [Students should place 20 sticky notes of one color in two columns of ten.]

Tell the class they are going to multiply $.2$ by $.1$ (one-tenth)
Ask students to make the decimal $.1$ horizontally on the grid. [Students should place 10 sticky notes of the other color in one row of ten, with two sticky notes overlapping.] (Make sure all students are participating by placing some of their sticky notes.)

Ask students what the product is. [$.2 \times .1 = .02$ two tenths multiplied by one-tenth equals two hundredths]

Have students take the sticky notes they placed on the grid.

Split the class into two groups. Each group will need all the sticky notes of one color.

Tell Group A that they are to create the decimal $.4$ and Group B that they are to create the decimal $.3$. Have Group A place their notes. [4 columns of 10 notes]
Ask Group B to place their notes. [3 rows of 10 notes, with 12 overlapping]

Ask the class what each sticky note represents. [one hundredth]
Ask the class how many notes are overlapping. [twelve]

Ask the class what the answer is.
 $.4 \times .3 = .12$ [four-tenths times three-tenths is twelve hundredths]

Have students return to their tables or desks with their partners.

Part 2: Show What You Know

Read aloud the instructions on page 64 in the Brick Math Decimal Teacher Edition.
Students complete page 68, #1 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 65 in the Brick Math Decimal Teacher Edition.
Students complete page 69, #2 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 65 in the Brick Math Decimal Teacher Edition.
Students complete page 70, #3 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 66 in the Brick Math Decimal Teacher Edition.
Students complete page 71, #4 in the Brick Math Decimals Student Edition.

Content Assessment

Tell students the following:

Students will complete the Content Assessment on their own. However, they will ask their partners to check the work *after* they have completed the assessment. Partners check the work but they should not change their partner's models nor write anything on another person's paper. Partners discuss the differences they might have on an answer.

Students complete Assessment #1 on page 72 in the Brick Math Decimals Student Edition.

Students complete Assessment #2 on page 73 in the Brick Math Decimals Student Edition.

Students complete Assessment #3 on page 74 in the Brick Math Decimals Student Edition.

Story Problem

Tell students a story problem like the following:

Samantha saw a store that was going out of business. The sign said everything in the store was .30 of the ticket price. Samantha found some items with a ticket price of \$1.50. How much will she pay?

Help students complete the story problem.

Have each pair work together to create a new story problem that they can model with bricks that shows simple addition with the sum (result) unknown.

As time allows, have students share their stories and models with at least one other team.

Inventory Check

Have students place all the bricks they have used today back into the correct compartments of the Brick Math box.

Have the students remove all the 1x6 bricks from the box and count them. After the students have verified the number (10), they replace those bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Self-Assessment

Ask students to use the blank space at the bottom of page 74 in the Brick Math Decimals Student Edition. Students need crayons or colored pencils to complete.

Ask students to write the word “partner” in the blank space at the bottom of page 74. Read aloud the statements to the students and have them draw the correct color brick.

Students should draw a specific color brick after the word “partner” based on the following:

Say:

I need to work on being a better partner. I did not listen to and help my partner as I should have.

If this describes you today, draw an orange brick after the word “partner.”

I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work.

If this describes you today, draw a green brick after the word “partner.”

I was a very good partner today. I helped my partner by checking their work and not by doing their work. If this describes you today, draw a blue brick after the word “partner.”

Ask students to write “I can multiply decimals” in the blank space at the bottom of page 74. Students should draw a specific color brick after the words “I can multiply decimals” based on the following:

Say:

I need help multiplying decimals. If this describes you today, draw an orange brick after the words “I can multiply decimals.”

I can multiply decimals. If this describes you today, draw a green brick after the words “I can multiply decimals.”

I can help others multiply decimals. If this describes you today, draw a blue brick after the words "I can multiply decimals."

Day 7 – Dividing Whole and Mixed Numbers by Decimals Using a Grid Model

Preparation:

- Read pages 67-68 in the Brick Math Decimal Teacher Edition
- Write on the board or chart paper

$$\begin{array}{r} 5.203 \\ \times .12 \\ \hline \end{array}$$

Welcome

Welcome students to Day 7. Ask students if they remember how to multiply decimals. Show students the problem you have written on the board or chart paper.

$$\begin{array}{r} 5.203 \\ \times .12 \\ \hline \end{array}$$

Ask students how many numbers will be on the right side of the decimal. [5]

Ask students if the product will be less than 5. [Yes, because they are multiplying by a small decimal, not a number that is one or greater.]

Ask students to think about division. Tell them they have been doing a lot of division without thinking about it directly. Ask them how many tenths are in one whole. [ten]

One divided by ten is one-tenth. Ask students how could they write “One divided by ten is one tenth” using numerals, including decimals. [$1 \div 10 = .1$]

Ask students to explain what is happening. [One item (whole) is divided into ten equal parts]

Ask students to divide 1 whole by 100. Ask students how could they write “One divided by one hundred is one hundredth” using numerals, including decimals. [$1 \div 100 = .01$]

Ask students to explain what is happening. [One item (whole) is divided into one hundred equal parts]

Have students find their partners and go to their places at the desks or tables.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students share something they enjoyed with their partners yesterday.

Have students get the correct Brick Math set(s) and two baseplates for their team.

Part 1: Show Them How

Follow the instructions on page 69 in the Brick Math Decimal Teacher Edition. Complete the review.

Students complete page 75, the review in the Brick Math Decimals Student Edition.

Follow the instructions on pages 70-71 in the Brick Math Decimal Teacher Edition. Complete Problem #1, 1-6

Students complete pages 76-77, Problem #1, 1-6 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 71-72 in the Brick Math Decimal Teacher Edition. Complete Problem #2, 1-5.

Students complete pages 78-79, Problem #2, 1-5 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 72-73 in the Brick Math Decimal Teacher Edition. Complete Problem #3, 1-7.

Students complete pages 79-81, Problem #3, 1-7 in the Brick Math Decimals Student Edition.

Follow the instructions on page 74 in the Brick Math Decimal Teacher Edition. Complete Problem #4, 1-5.

Students complete pages 81-82, Problem #4, 1-5 in the Brick Math Decimals Student Edition.

Move to Divide Decimals

Have students stand. Place four students in one group. They represent one whole of 4.

Tell students that they are going to divide this group of 4 students by .5. Ask the class if they can think of a way to represent that without cutting students into parts.

Let students think about it for a while and discuss it. Don't hurry their thought process. They may ask for manipulatives – that is fine. They may choose to use people as their manipulatives. That is fine.

One example would be to have two students sit behind each of the four students in the whole. The total number of students seated would be equal to $4 \div .5 = 8$. Have students multiply to check the answer $8 \times .5 = 4$. Point out that sometimes thinking of a decimal as a fraction can make things easier. .5 is the same as $\frac{1}{2}$. Explain that splitting each of the 4 into two parts, gives 8 total. This may help some students to visualize what is happening when we divide by decimals.

Choose another group of 5 students. Ask the class if they can think of a way to represent 5 students divided by .1 (one-tenth).

One example would be to have ten items (you likely do not have 55 students in the class) for each of the five students. $5 \div .1 = 50$.

Tell students that they know .1 is one-tenth. That means that each of the 5 students would be broken into 10 parts. We cannot break people into parts, so we make representations using other items. When each of the 5 wholes is broken into tenths, the total is 50-tenths.

Have students return to their tables or desks with their partners.

Part 2: Show What You Know

Read aloud the instructions on page 75 in the Brick Math Decimal Teacher Edition. Students complete page 83, #1 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 76 in the Brick Math Decimal Teacher Edition. Students complete page 84, #2 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 76 in the Brick Math Decimal Teacher Edition. Students complete page 85, #3 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 77 in the Brick Math Decimal Teacher Edition. Students complete page 86, #4 in the Brick Math Decimals Student Edition.

Content Assessment

Tell students the following:

Students will complete the Content Assessment on their own. However, they will ask their partners to check the work *after* they have completed the assessment. Partners check the work but they should not change their partner's models nor write anything on another person's paper. Partners discuss the differences they might have on an answer.

Students complete Assessment #1 on page 87 in the Brick Math Decimals Student Edition.

Students complete Assessment #2 on page 87 in the Brick Math Decimals Student Edition.

Students complete Assessment #3 on page 88 in the Brick Math Decimals Student Edition.

Students complete Assessment #4 on page 89 in the Brick Math Decimals Student Edition.

Story Problem

Tell students a story problem like the following:

Jasmine and Jason have 7 apples. They plan to divide the apples into sections that represent $.25$. How many apple sections will they have?
What is the equivalent fraction for the decimal $.25$?
Can you help Jasmine and Jason?

Help students complete the story problem.

Have each pair work together to create a new story problem that they can model with bricks.

As time allows, have students share their stories and models with at least one other team.

Inventory Check

Have students place all the bricks they have used today back into the correct compartments of the Brick Math box.

Have the students remove all the 2×6 , 1×12 , and 1×16 bricks from the box and count them. After the students have verified the numbers (4 2×6 , 6 1×12 , and 2 1×16), they replace those bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Self-Assessment

Ask students to use their journals to complete the self-assessment.
Students need colored pencils or crayons to complete.

Ask students to write the word “partner” in their journals. Read aloud the statements to the students and have them draw the correct color brick.

Students should draw a specific color brick after the word “partner” based on the following:
Say:

I need to work on being a better partner. I did not listen to and help my partner as I should have.

If this describes you today, draw an orange brick after the word “partner.”

I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work.

If this describes you today, draw a green brick after the word “partner.”

I was a very good partner today. I helped my partner by checking their work and not by doing their work. If this describes you today, draw a blue brick after the word “partner.”

Ask students to write “I can divide decimals” in their journals.

Students should draw a specific color brick after the words “I can divide decimals” based on the following:

Say:

I need help dividing decimals. If this describes you today, draw an orange brick after the words “I can divide decimals.”

I can divide decimals. If this describes you today, draw a green brick after the words “I can divide decimals.”

I can help others divide decimals. If this describes you today, draw a blue brick after the words “I can divide decimals.”

Day 8 – Dividing Whole and Mixed Numbers by Decimals Using a Place Value Model

Preparation:

- Read pages 78-79 in the Brick Math Decimal Teacher Edition
- Create a football field on the board or chart paper using 10-yard increments. This will be used today and tomorrow.
- Make a sticky note football. This will be used today and tomorrow.
- Write these problems on paper or the board, large enough for the class to see. Only one problem should be visible at a time.

$$1.4 \div .1 = ?$$

$$2.3 \div .5 = ?$$

$$5 \div .4 = ?$$

$$8 \div .2 = ?$$

$$8.1 \div .3 = ?$$

Welcome

Welcome students to Day 8. Tell students they did a great job yesterday, dividing whole and mixed numbers by decimals using a grid model. Let them know what they did yesterday will make what they are learning today – dividing whole and mixed numbers by decimals using a place value model a bit easier.

Ask students how many tenths are in one whole. [Ten]

Ask students how many tenths are in two. [Twenty]

Ask students how many hundredths are in five. [Five hundred]

Ask students how many hundredths are in fifty. [Five thousand]

Have students find their partners and go to their places at the desks or tables.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students share something they enjoyed doing with their partners yesterday.

Have students get the correct Brick Math set(s) and two baseplates for their team.

Part 1: Show Them How

Follow the instructions on pages 79-81 in the Brick Math Decimal Teacher Edition. Complete the review.

Students complete pages 90-91, the review in the Brick Math Decimals Student Edition.

Follow the instructions on page 81 in the Brick Math Decimal Teacher Edition. Complete Problem #1, 1-3

Students complete pages 91-92, Problem #1, 1-3 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 81-82 in the Brick Math Decimal Teacher Edition. Complete Problem #2, 1-2.

Students complete pages 92-93, Problem #2, 1-2 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 82-83 in the Brick Math Decimal Teacher Edition. Complete Problem #3, 1-4.

Students complete pages 93-94, Problem #3, 1-3 in the Brick Math Decimals Student Edition.

Move to Divide by a Decimal

Divide the class into two equal teams. Teams can create a name as they will be playing football. The ball starts on the 50 yard-line. Each correct answer moves the ball 5 yards toward the team's goal. If all players on both teams answer correctly, then the ball does not move.

Both teams will be given a problem to solve. All players will do each problem. They will write the problem and answer in their journal, not showing the work to anyone. They can use the brick set if they wish. They will turn the journal over and take apart the model when they have completed the work. Students who have finished may move to another part of the room to wait for the time to be called. When time is called (at your discretion), the players on each side return to their seats and hold up their answers. If there are incorrect answers, you can review what might be helpful, such as place value and moving of decimals, or reasonableness.

You can handle the checking of answers in any way you wish. You might choose to have students face off with their journals and move (or not move) the ball with each pair. You might choose to tally the correct answers on each team and move the ball once (or not at all). (The game will continue tomorrow.)

Problems:

$$1.4 \div .1 = ? \quad [14.0]$$

$$2.3 \div .5 = ? \quad [4.6]$$

$$5 \div .4 = ? \quad [12.5]$$

$$8 \div .2 = ? \quad [40]$$

$$8.1 \div .3 = [27]$$

Have students return to their tables or desks with their partners.

Part 2: Show What You Know

Read aloud the instructions on page 84 in the Brick Math Decimal Teacher Edition. Students complete page 95, #1 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 84 in the Brick Math Decimal Teacher Edition. Students complete page 96, #2 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 85 in the Brick Math Decimal Teacher Edition. Students complete page 97, #3 in the Brick Math Decimals Student Edition.

Content Assessment

Tell students the following:

Students will complete the Content Assessment on their own. However, they will ask their partners to check the work *after* they have completed the assessment. Partners check the work but they should not change their partner's models nor write anything on another person's paper. Partners discuss the differences they might have on an answer.

Students complete Assessment #1 on page 98 in the Brick Math Decimals Student Edition.

Students complete Assessment #2 on page 99 in the Brick Math Decimals Student Edition.

Students complete Assessment #3 on page 100 in the Brick Math Decimals Student Edition.

Story Problem

Tell students a story problem like the following:

Benjamin and Rebecca had \$1.25. They wondered how many nickels (.05) that would be. Can you help Benjamin and Rebecca determine $1.25 \div .05$?

Help students complete the story problem.

Have each pair work together to create a new story problem that they can model with bricks. As time allows, have students share their stories and models with at least one other team.

Inventory Check

Have students place all the bricks they have used today back into the correct compartments of the Brick Math box.

Have the students remove all the 1x10 bricks from the box and count them. After the students have verified the number (8), they replace those bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Self-Assessment

Ask students to use the blank space at the bottom of page 99 in the Brick Math Decimals Student Edition. Students need crayons to complete.

Ask students to write the word “partner” in the blank space at the bottom of page 99. Read aloud the statements to the students and have them draw the correct color brick.

Students should draw a specific color brick after the word “partner” based on the following:
Say:

I need to work on being a better partner. I did not listen to and help my partner as I should have.

If this describes you today, draw an orange brick after the word “partner.”

I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work.

If this describes you today, draw a green brick after the word “partner.”

I was a very good partner today. I helped my partner by checking their work and not by doing their work. If this describes you today, draw a blue brick after the word “partner.”

Ask students to write “I can divide by a decimal” in the blank space at the bottom of page 99.

Students should draw a specific color brick after the words “I can divide by a decimal” based on the following:

Say:

I need help dividing by a decimal. If this describes you today, draw an orange brick after the words “I can divide by a decimal.”

I can divide by a decimal. If this describes you today, draw a green brick after the words “I can divide by a decimal.”

I can help others divide by a decimal. If this describes you today, draw a blue brick after the words “I can divide by a decimal.”

Day 9 – Dividing by Decimals Using a Grid Covering Strategy

Preparation:

- Read pages 86-87 in the Brick Math Decimal Teacher Edition
- The football field on the board or chart paper using 10-yard increments used yesterday.
- Sticky note football used yesterday (should be located on the football field where the game ended yesterday)
- Write these problems on paper or the board, large enough for the class to see. Only one problem should be visible at a time.

$$2.4 \div .1 = ?$$

$$3.2 \div .5 = ?$$

$$7 \div .4 = ?$$

$$9 \div .2 = ?$$

$$8.2 \div .6 = ?$$

Welcome

Welcome students to Day 9. Tell students they are going to learn another strategy for dividing by decimals.

Ask students to explain the strategies they already know.

Have students find their partners and go to their places at the desks or tables.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students write a short thank-you note to his or her partner for helping them this week. Students will exchange thank-you notes tomorrow.

Have students get the correct Brick Math set(s) and two baseplates for their team.

Part 1: Show Them How

Follow the instructions on page 88 in the Brick Math Decimal Teacher Edition. Complete #1, 2, and 3.

Students complete page 101, #1, 2, and 3 in the Brick Math Decimals Student Edition.

Follow the instructions on page 89 in the Brick Math Decimal Teacher Edition. Complete Problem #1. 1-5.
Students complete pages 102-103, Problem #1, 1-5 in the Brick Math Decimals Student Edition.

Follow the instructions on page 90 in the Brick Math Decimal Teacher Edition. Complete Problem #2, 1-5.
Students complete pages 103-104, Problem #2, 1-5 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 90-91 in the Brick Math Decimal Teacher Edition. Complete Problem #3, 1-4.
Students complete page 104, Problem #3, 1-4 in the Brick Math Decimals Student Edition.

Move to Decimal Football

Students resume the game that started yesterday.

Divide the class into their teams.

The ball starts where it was at the end of the game yesterday. Each correct answer moves the ball 5 yards toward the team's goal. If all players on both teams answer correctly, then the ball does not move.

Both teams will be given a problem to solve. All players will do each problem. They will write the problem and answer in their journal, not showing the work to anyone. They can use the brick set if they wish. They will turn the journal over and take apart the model when they have completed the work. Students who have finished may move to another part of the room to wait for the time to be called. When time is called (at your discretion), the players on each side return to their seats and hold up their answers. If there are incorrect answers, you can review what might be helpful, such as place value and moving of decimals, or reasonableness.

You can handle the checking of answers in any way you wish. You might choose to have students face off with their journals and move (or not move) the ball with each pair. You might choose to tally the correct answers on each team and move the ball once (or not at all).
(The game will continue tomorrow.)

Problems:

$$2.4 \div .1 = ? \quad [24.0]$$

$$3.2 \div .5 = ? \quad [6.4]$$

$$7 \div .4 = ? \quad [17.5]$$

$$9 \div .2 = ? \quad [45]$$

$$8.2 \div .6 = ? \quad [13.5]$$

Have students return to their tables or desks with their partners.

Part 2: Show What You Know

Read aloud the instructions on page 92 in the Brick Math Decimal Teacher Edition.
Students complete page 105, #1 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 93 in the Brick Math Decimal Teacher Edition.
Students complete page 106, #2 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 94 in the Brick Math Decimal Teacher Edition.
Students complete page 107, #3 in the Brick Math Decimals Student Edition.

Content Assessment

Tell students the following:

Students will complete the Content Assessment on their own. However, they will ask their partners to check the work *after* they have completed the assessment. Partners check the work but they should not change their partner's models nor write anything on another person's paper. Partners discuss the differences they might have on an answer.

Students complete Assessment #1 on page 108 in the Brick Math Decimals Student Edition.

Students complete Assessment #2 on page 109 in the Brick Math Decimals Student Edition.

Students complete Assessment #3 on page 110 in the Brick Math Decimals Student Edition.

Story Problem

Tell students a story problem like the following:

Rei Fiona had \$2.60. She wondered how many dimes she could get in exchange. Can you help Rei Fiona? $2.60 \div .10 = ?$ [26]

Help students complete the story problem.

Have each pair work together to create a new story problem that they can model with bricks. As time allows, have students share their stories and models with at least one other team.

Inventory Check

Have students place all the bricks they have used today back into the correct compartments of the Brick Math box.

Have the students remove all the 2x4 bricks from the box and count them. After the students have verified the number (9), they replace those bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Self-Assessment

Ask students to use their journals to complete the self-assessment. Students need colored pencils or crayons to complete.

Ask students to write the word “partner” in their journals. Read aloud the statements to the students and have them draw the correct color brick.

Students should draw a specific color brick after the word “partner” based on the following:
Say:

I need to work on being a better partner. I did not listen to and help my partner as I should have.

If this describes you today, draw an orange brick after the word “partner.”

I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work.

If this describes you today, draw a green brick after the word “partner.”

I was a very good partner today. I helped my partner by checking their work and not by doing their work. If this describes you today, draw a blue brick after the word “partner.”

Ask students to write “I can divide by a decimal” in the blank space at the bottom of page 82. Students should draw a specific color brick after the words “I can divide by a decimal” based on the following:

Say:

I need help dividing by a decimal. If this describes you today, draw an orange brick after the words “I can divide by a decimal.”

I can divide by a decimal. If this describes you today, draw a green brick after the words "I can divide by a decimal."

I can help others divide by a decimal. If this describes you today, draw a blue brick after the words "I can divide by a decimal."

Reminder: Complete the Student Assessment Charts so they will be available to students at the end of class tomorrow. The Student Assessment Charts on page 125 of the Brick Math Decimals Student Edition should be completed before Day 10 class begins. You will need to make your own assessments and make appropriate comments so students and parents can see the progress made. If you wish, students can complete this as a self-assessment by making a checkmark in the correct boxes, and then you can add your assessments and comments.

Day 10 – Linking Decimals, Fractions, and Percentages

Preparation:

- Read pages 95-96 in the Brick Math Decimal Teacher Edition
- Teacher Assessment of Student Performance:
The Student Assessment Chart on page 125 of the Brick Math Decimals Student Edition should be completed before today's class begins. You will need to make your own assessments and make appropriate comments so parents can see the progress made. If you wish, students can complete this as a self-assessment by making a checkmark in the correct boxes, and then you can add your assessments and comments.
- Chart paper with .01 written near the top.
- The football field on the board or chart paper using 10-yard increments used yesterday.
- Sticky note football used yesterday (should be located on the football field where the game ended yesterday)

Welcome

Welcome students to the final day of camp. Ask them if they have had fun and learned a lot about math. YES!

Tell students today they are going to work with decimals, fractions, and percentages.

Show students .01 on chart paper. Ask them to name the decimal. [one hundredth]
Ask them how to make a fraction for one hundredth. [$1/100$] Write the fraction underneath the decimal.

Tell students that a percentage is a whole divided into one hundred units. Therefore, one unit of the hundred would be 1%. (Students may or may not be familiar with the percent sign.)
Write the percent underneath the decimal.

Write .02 on the chart paper. Repeat the activity.

Write .05 on the chart paper. Repeat the activity.

Have students find their partners and go to their places at the desks or tables.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students exchange the short thank-you notes they wrote yesterday with their partners.

Have students get the correct Brick Math set(s) and two baseplates for their team.

Part 1: Show Them How

Follow the instructions on pages 96-97 in the Brick Math Decimal Teacher Edition. Complete the review.

Students complete page 111, the review in the Brick Math Decimals Student Edition.

Follow the instructions on page 97 in the Brick Math Decimal Teacher Edition. Complete Problem #1, 1-4.

Students complete page 112, Problem #1, 1-4 in the Brick Math Decimals Student Edition.

Follow the instructions on page 98 in the Brick Math Decimal Teacher Edition. Complete Problem #2, 1-4.

Students complete pages 113-114, Problem #2, 1-4 in the Brick Math Decimals Student Edition.

Follow the instructions on pages 98-99 in the Brick Math Decimal Teacher Edition. Complete Problem #3, 1-5.

Students complete pages 114-115, Problem #3, 1-5 in the Brick Math Decimals Student Edition.

Follow the instructions on page 100 in the Brick Math Decimal Teacher Edition. Complete Problem #4, 1-6.

Students complete pages 116-117, Problem #4, 1-5 in the Brick Math Decimals Student Edition.

Move to Decimal Football

Students resume the game that started yesterday.

Divide the class into their teams.

The ball starts where it was at the end of the game yesterday. Each correct answer moves the ball 5 yards toward the team's goal. If all players on both teams answer correctly, then the ball does not move.

Tell students today the game will be a little different. They will hear a story problem twice (or three times). Students write the math sentence they will use to solve in their journals and turn the journal over. They do not leave their seats.

When everyone has written a math sentence and the journals are turned over, repeat the story problem. Have the teams huddle with their journals and come to a conclusion about what the

correct math sentences are. Remind the class that fractions, decimals, or percentages can be used to solve many problems. Team members should help anyone who does not have a correct math sentence to understand why it was incorrect and how to create a correct math sentence.

When both teams agree on the math sentences, they should return to their seats. Have one person on each team give a math sentence. Ask the teams if any other math sentences could be used to solve the problem. All students solve the problem using their journals and bricks as needed. When finished, students turn over their journals, take apart the models, and may move to a different part of the room.

When time is called, have students return to their seats. Check the answers and move the football accordingly. If there are incorrect answers, you can review what might be helpful, such as place value and moving of decimals, or reasonableness.

Story Problem #1

A game console is on sale for 40% off the original price of \$100. How much does the game console cost with the discount?

Story Problem #2

Two-thirds of the students like cherry gelatin. The class has 15 students. How many students like cherry gelatin?

Story Problem #3

In a survey, 35% of adults like to read poetry. What fractional number and decimal number represent the adults who like to read poetry?

Have students return to their tables or desks with their partners.

Part 2: Show What You Know

Read aloud the instructions on page 101 in the Brick Math Decimal Teacher Edition. Students complete page 118, #1 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 101 in the Brick Math Decimal Teacher Edition. Students complete page 119, #2 in the Brick Math Decimals Student Edition.

Read aloud the instructions on page 102 in the Brick Math Decimal Teacher Edition. Students complete page 120, #3 in the Brick Math Decimals Student Edition.

Story Problem

Tell students a story problem like the following:

Rei Fiona read 67 pages of her 100-page book. What decimal, fraction, and percentage represent how much she has read?

Help students complete the story problem.

Content Assessment

Tell students the following:

Students will complete the Content Assessment on their own. However, they will ask their partners to check the work *after* they have completed the assessment. Partners check the work but they should not change their partner's models nor write anything on another person's paper. Partners discuss the differences they might have on an answer.

Students complete Assessment #1 on page 121 in the Brick Math Decimals Student Edition.

Students complete Assessment #2 on page 122 in the Brick Math Decimals Student Edition.

Students complete Assessment #3 on page 123 in the Brick Math Decimals Student Edition.

Students complete Assessment #4 on page 124 in the Brick Math Decimals Student Edition.

Optional Parent Activity and Materials Check-In

Allow parents to come to the classroom for the last 20 minutes of the day.

Each parent will work with their child. The child will be the teacher for these activities and will help their parents learn how to use the bricks.

If a parent is unable to attend, the student can do the activity on their own or with a partner.

Have students show parents how to create $.47$ using a model (student's choice). Have students ask their parents to show them $.56$ using the model.

Have students show parents how to model $.4 + .3$ using the bricks.

Have students ask their parents to model $.5 + .2$ using the bricks.

Have students show parents how to model $.04 - .03$ using the bricks.

Have students ask their parents to model $.6 - .2$ using the bricks.

Have students show parents how to model $2 \times .3$ using the bricks.
Have students ask their parents to model $5 \times .2$ using the bricks.

Have students show their parents how to model $5 \div .2$ using the bricks.
Have students ask their parents to model $6 \div .1$ using the bricks.

Place all the bricks back in the correct compartment of the box.

Have a cheer for the parents!

Inventory Check

Place all the bricks back in the correct compartments in the box.

Ask the students and parents to spot-check the compartments and make sure all the bricks are in the correct locations. Have students look on the floor to find any stray bricks.

Have each team bring their materials to you in numerical order so you can keep track of your sets. You should have your sets in order and organized for the next use.

Give each child or parent the completed Student Assessment Chart, noting growth in decimals.

Tell everyone thanks for coming!