

This module suggests ways to integrate practice into the math block through curriculum resources and games. It also provides suggestions for incorporating cooperative learning structures into instructional time.

Curriculum Resources

» Worksheet Generator

This online tool enables teachers to print extra problems for practicing mastery. The worksheets can also be used to create problem sets for games (e.g., Basket of Problems, described in the “Games” section that follows).

» Online Drills Application

A student completes the same drill twice and records the scores on the Computer Drill Graph. The goal is to increase accuracy and fluency. For more information and detailed instructions, see the Math Facts module.

» Video Lesson

The video lesson may be used for reteaching or review.

Games

Instructional tent signs for use with the following learning activities can be downloaded as PDFs from the online Professional Access and printed on cardstock.

» **Place Value****Pick a Card/Roll the Dice (1–4 players)**

Materials:

- Set of cards with digits 0 to 9 written in green, one on each card (or green 10-sided die)
- Set of cards with the digits 0 to 9 written in blue, one on each card (or blue 10-sided die)
- Set of cards with the digits 0 to 9 written in red, one on each card (or red 10-sided die)
- Integer Block Kit
- Decimal Street® poster

How to Play:

Units (one-digit): Player draws a green card (or rolls the green die) and places that number of unit blocks in the appropriate house on the Decimal Street poster. For example, if a player picks a card with a green 4, then four unit blocks are counted out and placed in the units house. Replace the card and shuffle. If multiple players are playing, take turns.

Units and Tens (two-digit): Player draws one green card (or rolls the green die) and one blue card (or rolls the blue die). The player places the correct number of 10-blocks and unit blocks in the appropriate houses on the Decimal Street poster. Replace the cards and shuffle. If multiple players are playing, take turns.

Units, Tens, and Hundreds (three-digit): Player draws one green card (or rolls the green die), one blue card (or rolls the blue die), and one red card (or rolls the red die). The player places the correct number of 100-blocks, 10-blocks, and unit blocks in the appropriate houses on the Decimal Street poster. Replace the cards and shuffle. If multiple players are playing, take turns.

» **Unit Block Identification (Subitizing)****Blocks and Symbols Matching (1–3 players)**

Materials:

- Set of cards with the numerals 1 to 9 on one side (one on each card) and a traced picture of the matching block on the other side
- Integer Block Kit

How to Play:

Shuffle the cards and place on the table with the numerals showing. The first player draws a card numeral side up and selects the block that matches, using the back of the card to check. If the correct match is made, the player keeps the card. If not, return the card to the bottom of the the pile. If multiple players are playing, take turns.

Simon Says (2 or more players)

Materials:

- Set of cards with various “Simon Says” directions (e.g., “Put a three on your shoulder.”)
- Integer Block Kit

How to Play:

Teacher acts as “Simon” or a student is selected. Simon reads a card to the other players. If players follow Simon’s directions correctly, they receive a point. Continue until all the cards have been read. Players may take turns being Simon after each card.

What’s Missing? (2 players)

Materials:

- Integer Block Kit

How to Play:

With the unit to nine blocks lined up in order, one player covers their eyes while the other player removes one of the blocks. The first player then identifies which block is missing. Players take turns.

The Grab Bag (2 players)

Materials:

- Set of cards with the numerals 1 to 9 written on them, one per card
- Paper lunch bag
- Integer Block Kit

How to Play:

Place the unit to nine blocks in a paper lunch bag. Players take turns drawing a card and then feeling around in the bag to try to draw out the block that matches the card. If the correct match is made, the player keeps the card. If not, return the card to the bottom of the the pile.

Block Memory (1–4 players)

Materials:

- Set of cards with the numerals 1 to 9 written on them, one per card
- Set of cards with pictures of the unit to nine blocks, one per card

How to Play:

The cards are mixed up and placed on the table face down. The first player turns over two cards and attempts to match the numeral with the corresponding block. If the cards match, the player keeps them; if they do not match, the player turns them back over. If multiple players are playing, take turns.

» **Addition****Both Sides the Same (1–2 players)**

Materials:

- Set of cards with the numerals 1 to 10 written on them, one per card
- Integer Block Kit
- Paper and pencil or small dry erase board and marker

How to Play:

Draw a line down the middle of the paper. The first player draws two cards and finds the blocks that match. The player places a block on one side of the line and the second block on the other side. The player asks, “What plus ___ is the same as ___?” and then picks the block that makes both sides the same. For example, Maria places a 7-block on one side and a 4-block on the other. She asks, “What plus four is the same as seven?” and correctly chooses the 3-block. Replace the cards and shuffle. If multiple players are playing, take turns.

Who Are You? (2 players)

Materials:

- Integer Block Kit
- Paper and pencil (or small dry erase board and marker)

How to Play:

Choose a set of math facts to practice. One player places a block down representing the sum (e.g., the 8-block), and then places a smaller block representing an addend above it (e.g., the 3-block). The player says, “Together we make eight. I am three; who are you?” The other player chooses the block they think will represent the missing addend and writes the corresponding equation (e.g., $5 + 3 = 8$). Players take turns.

Fishin’ for Tens (3–4 players)

Materials:

- Deck of playing cards with tens, jokers, and face cards removed (Aces are ones.)

How to Play:

Shuffle cards and deal five cards to each player. Set the remaining cards face down on the table as a draw pile. The first player thinks of a number they need to combine with a card in their hand to make ten. (For example, if the player has a three, they need a seven to make ten.) The player asks another player for the needed card. If they have it, the first player takes it and lays down the combination making ten on the table face up in front of them. If the other player does not have the requested card, they say “Go fishin’!” The first player must then take a card from the draw pile. Players take turns until someone is out of cards. The person who runs out of cards gets two points, and everyone gets one point for each ten laid down.

Build a Wall (1 player)

Materials:

- Integer Block Kit
- Paper and pencil (or small dry erase board and marker)

How to Play:

Place a 9- or 10-block on the paper. The player makes a wall of blocks that is the same number of units long, using two blocks in each row. The player writes down the equation for each row in the wall. For example, if the second row is a 6-block and a 4-block, then the equation is $6 + 4 = 10$.

Fill in the Space (2 players)

Materials:

- Integer Block Kit
- Paper and pencil (or small dry erase board and marker)

How to Play:

The first player places a 9- or 10-block on the paper and places a smaller block on top of it. The other player selects the correct block to fill the space to make nine or ten and writes the corresponding equation. Players take turns until nine different equations have been created.

Smaller (2 players)

Materials:

- Integer Block Kit

How to Play:

Players lay the unit through nine blocks out in ascending order with the unit block on the right. One player chooses a number between one and nine and asks, "What number is one less than ___ (the chosen number)?" The other player answers. Players take turns.

Race to 100 (1–4 players)

Materials:

- Set of cards with the numerals 0 to 9 written in green, one on each card (or green 10-sided die)
- 1 red 100-block for each player
- Integer Block Kit

How to Play:

The first player draws a card (or rolls the die), and places the corresponding block on the first row of the 100-block. Replace the card and shuffle. If multiple players are playing, the next player takes a turn. Each player continues filling their 100-block with blocks, completing one row before moving to the next. If the card drawn is more than needed to complete the row, the block may be exchanged for two smaller blocks (e.g., exchange a 6-block for a 2-block and a 4-block). Continue until a player fills their 100-block.

Race to 500 (1–4 players)

Materials:

- Set of cards with the digits 0 to 9 written in green, one on each card (or green 10-sided die)
- Set of cards with the digits 0 to 9 written in blue, one on each card (or blue 10-sided die)
- Paper and pencil (or small dry erase board and marker)

How to Play:

The first player draws a card from both sets of cards (or rolls both dice). The player places the blue digit in the tens place and the green digit in the units place and writes the corresponding number on the paper. Replace the cards and shuffle. If multiple players are playing, the next player takes a turn. On subsequent turns, add the new number to the previous one. Continue until a player reaches 500 or greater.

Race to 5,000 (1–4 players)

Materials:

- Set of cards with the digits 0 to 9 written in green, one on each card (or green 10-sided die)
- Set of cards with the digits 0 to 9 written in blue, one on each card (or blue 10-sided die)
- Set of cards with the digits 0 to 9 written in red, one on each card (or red 10-sided die)
- Paper and pencil (or small dry erase board and marker)

How to Play:

The first player draws a card from all three sets of cards (or rolls all three dice). The player places the red digit in the hundreds place, the blue digit in the tens place, and the green digit in the units place. Then they write the corresponding number on the paper. Replace the cards and shuffle. If multiple players are playing, the next player takes a turn. On subsequent turns, add the new number to the previous one. Continue until a player reaches 5,000 or greater.

» **Multiple Operations****T-Chart (2 players)**

Materials:

- Set of cards with numerals 0 to 9 written on them, one on each card (or 10-sided die)
- Paper and pencil (or small dry erase board and marker)

How to Play:

Choose a set of math facts to practice, such as adding eight. Players draw a T-chart on a piece of paper with their names as headings. Students take turns drawing a card from the deck or rolling the die. The player who draws the card (or rolls the die) uses the resulting number and the chosen math fact to say and write an equation on the T-chart. For an example, see below.

$$8 + \boxed{7} =$$

Mark	Sue
$8 + 4 = 12$	$8 + 7 = 15$

Math Fact War (2–4 players)

Materials:

- Deck of playing cards with tens, jokers, and face cards removed (Aces are ones. Leave tens in deck for multiplication.)

How to Play:

Shuffle the cards and place the pile face down on the table. Choose a set of math facts to practice, such as adding eight. The first player turns over the top card and adds (or multiplies) the math fact and the number on the card. If the player answers correctly, they keep the card. Otherwise, it is returned to the bottom of the pile. Players take turns until all the cards are used.

Ball Toss (2 or more players)

Materials:

- Inflatable beach ball with the numerals 0 to 9 written randomly on different sections with permanent marker (Each numeral should be written at least twice.)

How to Play:

Choose a set of math facts to practice, such as adding eight. The first player catches the ball from another player and finds the number closest to the thumb on their right hand. The player adds (or multiplies) the math fact and that number, and then tosses the ball to the next player. Players earn a point for each correct response.

Basket of Problems (2 or more players)

Materials:

- Small paper bag, box, or basket
- Problems on slips of paper
- Corresponding Math-U-See Manipulatives

How to Play:

Place cut-apart problems in the container. The first player pulls a problem out, builds it with the manipulatives, and gives the answer. The other player checks their work. Players earn a point for each correct answer. Players take turns until all the problems have been drawn or both players have completed five turns.

» Skip Counting**Hundreds Chart (1 player)**

Materials:

- Laminated hundreds chart with first row showing numerals 0 to 9, second row 10 to 19, etc.
- Dry erase marker
- Marker eraser

How to Play:

Select a skip counting fact. The player circles all the multiples for the selected fact and describes any pattern that they discover.

» **Fractions****Build a Fraction (1–4 players)**

Materials:

- Set of cards with the digits 0 to 5, one on each card, and “numerator” written on the back of each card
- Set of cards with the digits 1 to 6, one on each card, and “denominator” written on the back of each card
- Pencil, chenille stem, or piece of yarn to represent vinculum
- Fraction Overlay Kit (1 per player)

How to Play:

Shuffle each set of cards and place them face down in two piles. The first player takes a card from each pile and places the numerator card above the vinculum and the denominator card below the vinculum. The player then uses the fraction overlays to build the fraction. If the fraction is improper, build it as a mixed number. Replace the cards and shuffle. If multiple players are playing, take turns.

Name That Fraction (2–4 players)

Materials:

- Fraction Overlay Kit
- Paper and pencil or small dry erase board and marker (1 set per player)
- Folder for a “screen”

How to Play:

The first player sets the folder up as a screen and uses the Fraction Overlay Kit to build a fraction behind it. This player says “Go!” and removes the folder. The other players must write the fraction the model represents. Each player earns one point for correctly identifying the fraction. Players take turns building fractions.

VARIATION: The other players must write an equivalent fraction to the one shown.

Equivalent Fraction Race (1–4 players)

Materials:

- Set of cards with the following fractions written: $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$ (one per card)
- Fraction Overlay Kit (1 per player)
- Paper and pencil or small dry erase board and marker (1 set per player)
- Timer

How to Play:

Shuffle the fraction cards and scatter them face down on the table. Set the timer for two minutes. At the start of the timer, each player takes a fraction card and turns it over. They then write their fraction on their paper and build it with the overlays. Next, each player uses the overlays to write and build as many equivalent fractions as possible before the timer goes off.

» Decimals**Race to 10.0 (1–4 players)**

Materials:

- Set of cards with the digits 0 to 9 written in green, one on each card (or green 10-sided die)
- Set of cards with the digits 0 to 9 written in blue, one on each card (or blue 10-sided die)
- Set of cards with the digits 0 to 9 written in red, one on each card (or red 10-sided die)
- Token or button to represent decimal point
- Paper and pencil (or small dry erase board and marker)

How to Play:

Shuffle each set of cards and place them face down in three piles. Place a token or button to represent the decimal point on the table. The first player takes a card from each pile (or rolls all three dice). They place the red digit in the hundredths place, the blue digit in the tenths place, and the green digit in the units place. Then they write the corresponding number on the paper. Replace the cards and shuffle. If multiple players are playing, take turns. On subsequent turns, each player adds the new number to their previous one. Continue until a player reaches ten or greater.

Decimal Basketball (2 players)

Materials:

- 1 small ball of paper or ping-pong ball
- Small basket, empty can, or other container for the “basket”
- Paper and pencil or small dry erase board and marker (1 set per player)

How to Play:

Place the basket across the desk or table. The first player tosses the ball ten times, trying to get it into the basket. The player records the number of times they made the shot, and then writes this number as a decimal. The player earns one point if correct. Players take turns.

VARIATIONS: Players must write the score as an equivalent decimal in hundredths or thousandths. Players must write the score as a percentage. Players must record the number of shots made out of twenty or twenty-five attempts instead of ten and convert score to a decimal and/or percentage.

Decimal War (2–4 players)

Materials:

- Deck of playing cards with tens, jokers, and face cards removed (Aces are ones.)
- Card, piece of paper, or small dry erase board with a large *greater than* symbol
- Paper and pencil or small dry erase board and marker (1 set per player)

How to Play:

Shuffle the cards and place the pile face down on the table. The first player turns over the top two cards. If they are the same value, set them aside. If the cards are different values, place one on either side of the *greater than* symbol. The player must then use the numbers on the cards to write a correct inequality, incorporating zeros to create decimal values. For example, if the cards drawn appear as $3 > 7$, they can add zeros to create $0.3 > 0.007$ to get a correct inequality. Players take turns until all the cards are used.

» Positive and Negative Integers**Integer War (2–4 players)**

Materials:

- Deck of playing cards with jokers and face cards removed (Aces are ones.)

How to Play:

Shuffle the cards and place the pile face down on the table. The first player turns over the top two cards. If a card is black, its value is positive; if a card is red, its value is negative. The player adds (or multiplies) the numbers on the cards. If the player answers correctly, they keep the cards. Otherwise, return the cards to the bottom of the pile. Players take turns until all the cards are used.

» **Exponents****Power War (2 players)**

Materials:

- Set of cards with digits 0 to 9 written in blue, one on each card (or blue 10-sided die)
- Set of cards with digits 0 to 9 written in red, one on each card (or red 10-sided die)
- Paper and pencils (or small dry erase board and markers)
- Scientific calculators (optional)

How to Play:

Players draw a T-chart on a piece of paper with their names as headings.

Mark	Sue
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Shuffle the cards and place each pile face down on the table. Each player chooses one card from each pile or rolls both dice. On their side of the chart, they write an expression using the blue digit as the base and the red digit as the exponent (e.g., 5^2). Each player calculates the value and writes it next to the expression. The player who has the greater value earns a point. Return the cards to the piles, shuffle, and play ten rounds.

» **Simplifying Algebraic Expressions****Make It Simple (1 player)**

Materials:

- X-blocks, $-X$ -blocks, green unit blocks
- Box or paper bag
- Paper and pencil (or small dry erase board and marker)

How to Play:

The player places all the blocks into the box or bag. Without looking, they pull out a handful of blocks and place them on the table. The player writes an expression representing the blocks (unit blocks = positive units, upside-down unit blocks = negative units). Next, the player matches and removes all additive inverse pairs (e.g., X-block and $-X$ -block). The player writes another expression for the blocks that remain.

Make It Simple Partner Challenge (2 players)

Materials:

- X-blocks, -X-blocks, green unit blocks
- Paper and pencil (or small dry erase board and marker)

How to Play:

The first player writes an expression on the paper or dry erase board (e.g., $x + 2x + 5 - x - 3$). The second player builds the expression with the blocks. A correct expression earns a point. Next, the second player matches and removes all additive inverse pairs (e.g., X-block and -X-block). The second player writes another expression for the blocks that remain. A correct expression earns another point. Players switch roles and continue playing until one of them reaches ten points.

Cooperative Learning Structures

In addition to incorporating a variety of grouping structures into each class session, teachers may wish to also incorporate a variety of learning structures. The preceding games include options for individual, competitive, and cooperative learning.

Cooperative learning can result in higher achievement and increased retention. Students may also experience reduced anxiety when participating in cooperative learning. Here are some additional suggestions for incorporating cooperative learning into your implementation of the Math-U-See program:

Rapid Review

When presenting a new lesson, pause at strategic points and allow small groups two to three minutes to discuss and ask each other questions for clarification.

Zombie and the Brain

As a transition from direct instruction to independent practice, allow students to work through the Build, Write, Say process in pairs. The “brain” can only think and speak. The “zombie” can only build and write as instructed by the brain. Students take turns playing the roles of “zombie” and “brain” on alternating problems.

Think-Pair-Share

Think-Pair-Share is a popular strategy that involves the teacher posing a question, allowing time for individual thinking, students sharing their responses with a partner, and students sharing responses with the whole group. Some suggested uses of Think-Pair-Share in a lesson are:

- To promote making connections between concepts, prior to introducing a new lesson, ask an exploratory question (e.g., prior to instructing on multiple-digit addition with regrouping, “What do you think might happen if you were to add two multiple-digit numbers and ended up with more than nine in a place value?”).
- During Clean Up and Closure, present a word problem using concepts in review for a lesson or unit test.
- For review and reteaching, present a problem mirroring a common mistake and have students describe the error, why the error might have been made, and an alternative approach to solving the problem.
- To evaluate conceptual understanding, provide the steps of a worked solution and have students provide the rationale behind each step and why the approach was used. (Note: First, this practice should be modeled for the students by the teacher.)