

Appendix B

Activities to Review Basic Math Facts and Computation Skills

Try using the following engaging activities to help students review and retain basic math facts and computation skills.



TEACHER TIP

When assisting students with the memorization of multiplication facts, isolate the more difficult facts for repeated practice. Students are quicker to memorize the 0, 1, 2, and 5 facts, so concentrate on the others. Explore the commutative property so that students understand that if they know 3×8 , they will know 8×3 . Then, focus on the following 18 facts.

$$6 \times 3, 6 \times 4, 6 \times 6, 6 \times 7, 6 \times 8, 6 \times 9$$

$$7 \times 3, 7 \times 4, 7 \times 7, 7 \times 8, 7 \times 9$$

$$8 \times 3, 8 \times 4, 8 \times 8, 8 \times 9$$

$$9 \times 3, 9 \times 4, 9 \times 9$$



Title: Addition Flip

Facts: addition

Materials Needed: number cards 1 to 12 for each student; 2 dice per pair of students

Description: Each of the players places their number cards face up in a row in front of them. Players take turns rolling both dice and flipping over cards that equal the sum of the 2 numbers rolled (e.g., a roll of 6 and 2 has a sum of 8, so a player could flip over an 8, or a 5 and 3, or a 7 and 1, etc.). The player chooses one way to flip for the sum, and then the next player takes a turn. If a player cannot make the sum with the cards she has, she loses her turn. The winner is the first player to turn over all of her cards.



Title: Finding Tens

Facts: addition

Materials Needed: one deck of playing cards without face cards (ace = 1)

Description: Have students place 10 cards from the deck face up on the table. Players then take turns removing cards that have a sum of 10 (e.g., a player might remove the cards 6 and 4, or the 3 and 2 and 5, or the 10). Once a player has removed a “10,” he replaces the missing cards with cards from the deck and the next player takes a turn. When no more 10s can be made, players add their cards to see who collected the most cards.

Variations: For more challenging addition, students can add to find 18 or 20.

Title: Which Is Greater?

Facts: addition or multiplication

Materials Needed: 2 spinners for each pair of students—1 spinner with numbers 1–9, the other spinner with operation directions (e.g., +2, +3, +4, +5; or $\times 3$, $\times 4$, $\times 5$, $\times 6$); paper clips and pencils to create spinners; Which is Greater? score sheet

Description: One student spins the number spinner to get a beginning value, then spins the second spinner to determine how much to add (or multiply) to the first number (e.g., If the student spins a 4 and then spins a +3, he must add $4 + 3$ to get his score of 7). The student records his score in his column of the score sheet and then his partner takes a turn. His partner spins both spinners, computes her score, and records it on her column of the score sheet. The students then compare the numbers and place the appropriate sign ($>$ or $<$ or $=$) between the two scores. The students with the greater score wins the round. (There is no winner if the numbers are equal.) Then, they play another round.

Variation: Older students might play a series of rounds to determine a game winner. After spinning, recording their numbers, and placing the $>$, $<$, or $=$ sign between the numbers, students should circle the higher value. To end the game, each student adds up all of his or her winning (circled) numbers to determine who has scored the most points during the game.

**Title: Ladder Addition****Facts:** addition**Materials Needed:** a ladder template; 2 dice to be shared by each pair**Description:** Students take turns rolling dice and adding to find the sum. The sums are recorded on each step of the ladder template beginning at the top. When all steps have been filled in, students add the numbers on each step to get a total score that is then recorded at the bottom of the ladder. Two rounds are played and then students add the scores of both rounds to find the total score. The student with the higher score wins.**Variation:** The 2 dice can be multiplied to get products that are then recorded on each ladder step. The products are then added to find the winner.**Title: Race to 50****Facts:** addition**Materials Needed:** 1 die per student; paper to record scores for each round**Description:** Students play with a partner. The goal of the game is to be the first one to earn 50 or more points. The first student rolls as many times as she'd like, adding the rolls to get her score. (For example, if she rolls a 2, then a 3, and then a 5, she gets a score of 10 for that round.) Students can roll as many times as they'd like for each round, but if they roll a 6 their turn is over and they get no points for that turn; so, the goal is to stop rolling before a 6 comes up on the die. Students add their scores after each turn to determine when they have reached 50. The first player with a score of 50 wins the game.**Variation:** Play "Race to 100," with the first player who has a score of 100 winning the game.

1	6	5
7	2	8
3	9	4

Title: Bean Bag Toss**Facts:** addition or multiplication**Materials Needed:** a plastic shower curtain divided into 9 sections with a permanent marker (each section is labeled with the numbers 1 to 9); 2 bean bags**Description:** Students toss the 2 bean bags on the curtain while it is flat on the floor. Students then add (or multiply) the 2 numbers on which their bean bags land. Scores can be kept with 1 point given for each correct answer, but scores do not need to be kept. This activity is particularly good for students who would benefit from physical movement.**Variation:** Scores can be kept by recording the sums (addition) or products (multiplication) for each round. After a designated number of rounds, students add to find their total score.**Title: Math Scopes****Facts:** any operation**Materials Needed:** a math scope for each pair; some fact strips to slide through the scope**Description:** This simple variation of flash cards allows partners to work together to practice their facts. One student slides the facts through the scope while the other practices her facts by giving the answers. The answers are visible through the back of the scope for easy checking.**Title: Bag of Facts****Facts:** any operation**Materials Needed:** a small paper bag; 20 fact cards without answers; paper and pencil to keep score

Description: This is a game for 2 players. Place 20 fact cards in the paper bag. Players take turns picking a fact and recording the answer on their score sheet. The fact cards are not replaced in the bag. After 10 picks (all cards are used), players add their scores from each pick to find the winner (the highest score).

Title: Bingo

Facts: any operation

Materials Needed: blank bingo cards (see Appendix G); flash cards; bingo chips or beans

Description: Give each student a blank bingo grid. Provide students with a list of numbers (the answers to the math facts that you will be using during the game), and ask them to write each number in a different square of their blank bingo grid to create their individualized bingo card. The teacher then displays flash cards for those facts, and students silently find the answer on their cards and cover the answer with a bean or chip. Players who have covered a row, column, or diagonal shout *bingo* and then check their answers with the math facts that were given.

Title: Math Fact Memory

Facts: any operation

Materials Needed: 16 to 24 cards (depending on student's age and ability). Put a math fact on a card and a correlating answer on another card (e.g., 5×3 on one card, 15 on another card). Include as many fact/answer matches as you'd like.

Description: Students work in pairs and spread the cards face down on a desk or table. Players take turns choosing 2 cards. If the cards go together, the player keeps the cards and gets another turn. If the cards do not match, the player returns them to the same spot on the desk and his turn is over. The player with the most cards at the end of the game is the winner.

Variations: Practice matching time (digital and analog), equivalent fractions, decimals, or ratios using the same game.

Title: Facts Sorting

Facts: multiplication

Materials Needed: a set of fact cards for each team (2–4 players); a 2-column recording sheet

Description: Team members must work together to find the answers to each math fact and sort the cards into categories based on the products (i.e., sort them based on whether they are odd number or even number products). Students should record the equations in the correct column of their paper.

Variations: Teams can sort facts in a variety of ways, including the following:

- Products 25 or less; products 26 or more
- Products with a digit sum of 5 or less; products with a digit sum of 6 or more
- Products that are square numbers; products that are not square numbers

**Title: Place Value Addition****Facts:** addition**Materials Needed:** 1 die per student and a paper to record scores

Description: Students create two-digit numbers by rolling one die 2 times. Following the first roll, player #1 must decide whether to put that number in the tens or ones place of his two-digit number, then he rolls again to complete his two-digit number (e.g., If a 5 is rolled, the student might place it in the tens place and then roll to determine his ones digit, but if a 1 is rolled, the player might place it in his ones place and roll to determine the value of the tens digit). The player records his two-digit number (his score) and then his partner takes her turn. After five rounds, students add their scores to see whose is higher. The partner with the greater sum is the winner.

Variation: Players roll the die 3 times to create the largest three-digit numbers.

Title: Three-in-a-Row**Facts:** multiplication

Materials Needed: a completed multiplication chart with facts 1 to 9 for each pair; a different color crayon for each player; a spinner with 9 sections labeled 1 to 9 (Appendix C); a paper clip and pencil to create a spinner

Description: One student spins the spinner twice and finds the product of the 2 spins. She then colors that product somewhere on the multiplication chart. (For example, if she spins 6 and 6, she needs to color the product 36 on the chart but can find anywhere it might appear like 6×6 or 9×4 or 4×9 ; however, she must select only one square on the chart to color.) It is then the other player's turn. Once a square has been colored, it cannot be colored again. If a player cannot find an uncolored product on the chart, she cannot color a square for that turn. The first player to color 3 squares in a row (across, up and down, or diagonal) is the winner.

**Title: War****Facts:** multiplication or addition

Materials Needed: one deck of playing cards per pair—deck should include ace (1) through 9 cards in all suits

Description: This card game is played like the traditional game of War. Cards are equally divided between partners. Each player pulls a card from his stack. The first player to correctly say the product (or sum) gets to keep both cards. Players then each pull another card from their decks and continue. (A multiplication or addition chart may be kept face down to check any questionable answers.) Play continues until one player has won all of the cards.

Variation: Set a time limit. The player with the most cards when time is up is the winner.

Primary Version: Students play in the traditional way by comparing the numbers on the cards and the highest-value card wins (comparing whole numbers).

**Title: Mystery Number****Facts:** addition or multiplication

Materials Needed: a deck of playing cards with face cards removed (ace = 1) for each team

Description: Three students play this game. A deck of cards is dealt to 2 players. The players sit facing each other and the players each put a card on their foreheads facing out so that the opponent can see the number on the card. A third player (the referee) says the sum (or product if you are reviewing multiplication) and the players must call

out the number that they believe is on their foreheads. The first one who correctly names their card wins both cards and play continues. The referee tells the players when they have called out the number that is on the card.

Title: Buzz

Facts: multiplication

Materials Needed: none

Description: This multiplication activity is played aloud with the whole class or in small groups. Many teachers prefer small groups because they allow students to give more responses and can be less intimidating for students. The teacher states a number (e.g., 4) and students begin to count off, each saying one number; however, they cannot say any number that is a multiple of 4. When there is a multiple of 4, that student must say “buzz” (e.g., 1, 2, 3, buzz, 5, 6, 7, buzz, etc.). Students continue in a roundrobin format.

Variation: When students are getting proficient at Buzz, the teacher might add another multiple and students must say “beep” for that one (e.g., for multiples of 4 and 6, the counting would be 1, 2, 3, buzz, 5, beep, 7, buzz . . .). If a number is a multiple of both, the student would need to say “buzz-beep.”



Title: Building Equations

Facts: all operations

Materials Needed: a deck of cards with face cards removed (ace = 1); one recording sheet for the pair

Description: Four numbers are selected from the deck of cards. Partners work together to try to build equations using 3 of the numbers (any of the 4 selected from the deck) and any operations to get answers from 1 to 10. Partners record each equation on their paper. (For example, If the numbers drawn are 2, 4, 5, and 8, students might record $(8 - 2) - 5 = 1$; $(2 \times 5) - 8 = 2$, etc.) The goal is for partners to find equations that result in answers 1 to 10.

Variation: Students who have learned about order of operations should be challenged to record the equations using parentheses and attending to the order of operations.

Title: Elimination

Facts: all operations

Materials Needed: blackboard

Description: The teacher writes the numbers 1 to 25 on the blackboard. The teacher then writes the digits 1, 2, 3, and 4 to the side of the other numbers or in a different color chalk. Students are challenged to form equations by using all of the digits 1, 2, 3, and 4 in each equation. The goal is to eliminate as many of the 1 to 25 numbers as possible (e.g., $1 + 2 + 3 + 4 = 10$, so the number 10 can be erased from the board).

Variation: The teacher records the numbers 1 to 25 on the board and selects a target number (e.g., 20). Students try to make 20 using any of the 1 to 25 numbers. As a number is used, it is erased from the board and only the numbers that are left on the board can still be used. Students are challenged to see how many numbers they can use before getting stuck.

Title: I Have—Who Has

Facts: any operation

Materials Needed: one *I Have—Who Has* card for each student

Description: Each student receives a card. The teacher designates one student to begin and that student reads her card (e.g., “I have 35, who has 3×6 ?”). The student who has

the card that says “I have 18.” must stand up and read his card. This continues until it is back to the original student. (*Note:* For this activity to work correctly, there can be only one answer for each *I Have—Who Has* card and the facts must be designed to lead back to the first clue.)

Variations:

- Have students work in pairs (*We Have—Who Has*) if they need support with their facts.
- Play the game in small groups rather than as a whole class.
- To challenge students, give each student two cards.
- Time the group to see how long it takes to get through the whole set of cards. Challenge the group to do it in less time tomorrow.
- Use *I Have—Who Has* to review other concepts (e.g., time, fractions, percents).
 - “Who has quarter to three?” “I have 2:45.” “Who has half past one?” “I have 1:30.”
 - “Who has $\frac{1}{4}$?” “I have 25%.” “Who has $\frac{2}{5}$?” “I have 40%.”

Title: Change the Quotient

Facts: division

Materials Needed: one deck of *Change the Quotient Cards*

Description: Seven cards are dealt to each player (2–4 players). The remaining cards are placed in a stack face down on the desk. The top card in the stack is flipped over to reveal the first quotient of the game. Each player takes a turn discarding a card that has the same quotient as the card that has been flipped over. If a player does not have a card with that quotient, she may either (1) play a *Change the Quotient* card and select (state) a new quotient for the game, or (2) pick a card from the face-down cards on the desk. Play then moves to the next player. The first player to discard all of her cards (or who has the least cards when no more moves can be made) is the winner.

Title: Silent Chains

Facts: any operation

Materials Needed: none

Description: This mental math activity is a great sponge activity for those few extra minutes before moving to the next class or lesson. The teacher slowly states a mental math chain (e.g., $3 + 4 \times 6 - 1$). Students then raise their hands to answer, but rather than stating the answer aloud, they mouth the answer silently to the teacher. The teacher quickly indicates a thumbs-up if the answer is correct. In this way, students do not hear the first answer and many students are able to give the answer to the teacher.

Variation: For a little added fun, rather than stating numbers, the teacher might say “The number of toes on one foot multiplied by the number of wheels on a tricycle minus the number of days in a week.”

Title: Spinning for Coins

Facts: addition and multiplication of money

Materials Needed: coin spinner and number spinner (see Appendix C); paper clip and pencil to create spinner; paper to record score

Description: Students take turns spinning the coin spinner and the number spinner to determine the amount of money that they earn for each turn. (For example, if a student spins a dime and a 5, she earns 5 dimes or \$0.50 for that turn.) Students record the amount they earn each turn. After each student has had 10 turns, they add to find the total amount of money earned. The student with the most money wins.

Variation: For younger students, have them take turns spinning a coin spinner and recording the amount of money they spin (e.g., they spin a quarter, so they record \$0.25). After 5 spins, students determine their total amount of money and the student with the highest amount is the winner.

Title: Triangle Flash Cards

Facts: fact families for addition/subtraction or multiplication/division

Materials Needed: triangle flash cards

Description: Triangle flash cards can be used to capitalize on the idea of fact families.

Whether working with addition/subtraction or multiplication/division, triangle flash cards provide students with practice in both operations (e.g., for $3 \times 4 = 12$, 3 is written in blue in one corner of the triangle, 4 is written in blue in another corner, and 12 is written in red in the last corner. If one partner covers the red 12, the other sees two blue numbers and multiplies to find the answer. If one partner covers the blue 4, the other sees a blue and a red number which alerts them to divide to find the answer).