



MATH CURRICULUM

2022 SUMMER LEARNING COLLABORATIVE MATH GAMES

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**Mighty
Change** **MC2026**

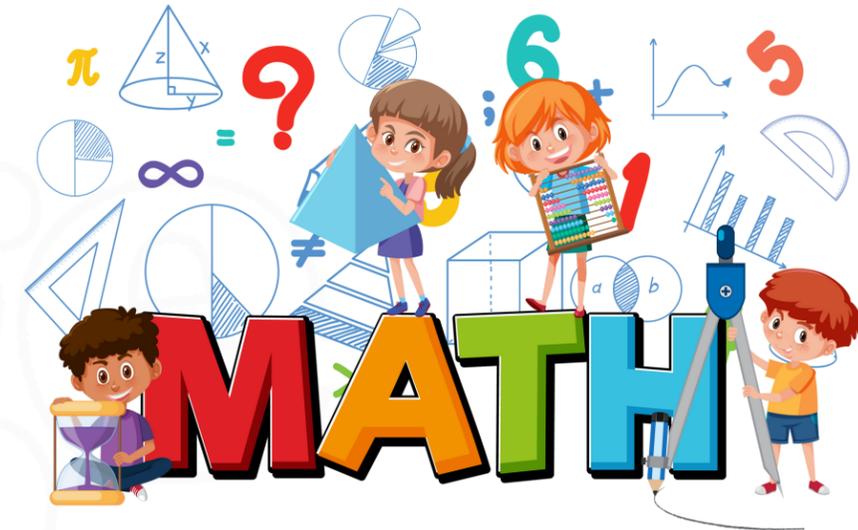
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SUMMER LEARNING

ABOUT THIS CURRICULUM



Studies have shown that during the summer months, students from low income households are more likely to lose some of the knowledge gained during the regular school year due to a lack of educational opportunities. This learning gap has gotten worse due to school closures and nearly two years of quarantines due to COVID-19. At Valley of the Sun United Way, our goal is to help mitigate this learning gap by providing out-of-school programs around the valley a FREE Math curriculum to help students retain and advance their knowledge while out of school.

United Way has collaborated with local teachers and educational professionals to design a math curriculum to compliment the daily out-of-school time schedule in order to create well-rounded educational activities for summer programs to access. The lessons and activities included in this curriculum are designed for students in Kindergarten through fifth grade and align to the Standards of Mathematical Practices with a focus on number sense, counting and base 10, operations and algebraic thinking as well as measurement and geometry.

We hope you gain and incorporate new ideas in your home or site programming not just during the summer but year-round!

STANDARDS OVERVIEW

Standards For Mathematical Practices (MP) K-5TH	
<ul style="list-style-type: none"> ✓ Make sense of problems and persevere in solving them. Reason abstractly and quantitatively. ✓ Construct viable arguments and critique the reasoning of others. ✓ Model with mathematics. ✓ Use appropriate tools strategically. ✓ Attend to precision. ✓ Look for and make use of structure. ✓ Look for and express regularity in repeated reasoning. 	

Number Sense, Counting, and Base 10	
Kindergarten	<ul style="list-style-type: none"> ✓ Know number names and the count sequence ✓ Count to tell the number of objects ✓ Compare numbers ✓ Work with numbers 11-19 to gain foundation for place value ✓ Use place value understand and properties of operations to add/ subtract
First Grade	<ul style="list-style-type: none"> ✓ Extend the counting sequence ✓ Understand place value ✓ Use place value understanding and properties to add and subtract
Second Grade	<ul style="list-style-type: none"> ✓ Understand place value ✓ Use place value understanding and properties of operations to add and subtract
Third Grade	<ul style="list-style-type: none"> ✓ Use place value understanding and properties of operations to perform multi-digit arithmetic ✓ Understand fractions as numbers
Fourth Grade	<ul style="list-style-type: none"> ✓ Generalize place value understanding for multi-digit whole numbers ✓ Use place value understanding and properties of operations to perform multi-digit arithmetic
Fifth Grade	<ul style="list-style-type: none"> ✓ Understand the place value system ✓ Perform operations with multi-digit whole numbers and with decimals to hundredths ✓ Use equivalent fractions to add and subtract fractions ✓ Use previous understandings of multiplication and division to multiply and divide fractions

Operations and Algebraic Thinking	
Kindergarten	<ul style="list-style-type: none"> ✓ Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from
Third Grade	<ul style="list-style-type: none"> ✓ Represent and solve problems involving whole number multiplication and division ✓ Understand properties of multiplication and the relationships between multiplication and division ✓ Multiply and divide within 100 ✓ Solve problems involving the four operations, and identify and explain patterns in arithmetic
Fourth Grade	<ul style="list-style-type: none"> ✓ Use the four operations with whole numbers to solve problems ✓ Apply and extend previous understanding of multiplication to multiply a whole number by a fraction
Fifth Grade	<ul style="list-style-type: none"> ✓ Write and interpret numerical expressions ✓ Analyze patterns and relationships

Measurement and Geometry	
Kindergarten	<ul style="list-style-type: none"> ✓ Identify and describe shapes
First Grade	<ul style="list-style-type: none"> ✓ Work with time and money ✓ Reason with shapes and their attributes
Second Grade	<ul style="list-style-type: none"> ✓ Measure and estimate lengths in standard units ✓ Relate addition and subtraction to length ✓ Work with time and money
Third Grade	<ul style="list-style-type: none"> ✓ Reason with shapes and their attributes
Fourth Grade	<ul style="list-style-type: none"> ✓ Solve problems involving measurement and conversion of measurements from a larger unit to a small unit
Fifth Grade	<ul style="list-style-type: none"> ✓ Represent and interpret data

“I’M THINKING OF A SHAPE”

Area of Focus:

✓ Measurement and Geometry

Materials Needed:

- The shapes made from the previous activity.

Directions:

Once kids have made their shapes now we can play a game with them.

This game will involve critical thinking skills and the process of elimination through questioning.

The adult OR student (caller) will say, “I’m thinking of a shape.” (For this example it will be a prism)

They can call on someone to ask a question. “Does it have 8 vertices?” The caller will have to say “no” since a prism has only 5 vertices. Therefore the ones playing will have to eliminate the cube and rectangular prism.

The questioning continues with the until the correct 3D shape is discovered. Then the caller can be rotated and played again.

Properties of 3D shapes			
Cone  2 Faces 1 Edge 1 Vertex	Sphere  1 Face 1 Edge 0 Vertices	Tetrahedron  4 Faces 6 Edges 4 Vertices	Cuboid  6 Faces 12 Edges 8 Vertices
Cylinder  3 Faces 2 Edges 0 Vertices	Cube  6 Faces 12 Edges 8 Vertices	Triangular Prism  5 Faces 9 Edges 6 Vertices	Square-based pyramid  5 Faces 8 Edges 5 Vertices

25!

Area of Focus:

✓ Number Sense, Counting & Base 10

✓ Operations & Algebraic Thinking

Materials Needed:

- 1 deck of cards
- Video Library

Directions:

Before you begin this game, be sure to take out the face cards and jokers. The Ace card = 1!

The dealer gives every player five cards. The remaining cards should be placed in the middle of the group face down. The object of this game is to reach the sum of 25!

To begin, all players will look at their cards and add them up! Be sure not to show each other your cards. The players will take turns discarding one card and picking up a new card from the top of the deck. When a player has five cards that equals 25, that player shouts out 25! The player then shows the other players their cards that equals 25.



36! DICE GAME

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking
- ✓ Measurement and Geometry

Materials Needed:

- 1 Die
- 2 white board
- 2 dry erase marker

Directions:

The goal of this game is to get to 36 as close as possible without going over!

36! works best for two players.

Taking turns, each player rolls the dice and creates a continuous number sentence. It is important to keep track of your total because the player does not want to go over the number 36!

Either player can stop at any time if they are close to 36. The player who is the closest to 36 when both players have decided to stop wins!

The player who wins the most times in 10 rounds wins!



3D SHAPES

Area of Focus:

- ✓ Measurement and Geometry

Materials Needed - Option A:

- Paper
- Tape
- Scissors

**You can use option A with kids who have more experience with shapes or older kids. OR you can do option B first, then give the opportunity for A at a later date.*

Materials Needed - Option B:

- Pre drawn shapes printed (in index)
- Tape
- Scissors

Directions:

This is a fun and creative way to get kids excited for geometry!

Option A: Have the kids explore with the materials to try and create their own 3 dimensional shapes. You may want to point out (or bring) real life materials for them to associate with.

Can of food = cylinder
Birthday hat = cone
Die = cube

Box of Kleenex = rectangular prism
Slice of cake = triangular prism

Option B: You can print out the pages in the index to have the kids cut and tape together. Point out the flat parts called "sides", the corners are called "vertices", and the "edges" are the long folded parts between the vertices.



BALL TOSS

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- Ball
- Adult ready with ideas

Directions:

The group stands in a large circle. The adult starts by introducing the game (count to 100, skip count by 10s, multiples of 9).

Each time the ball is tossed, a child needs to verbally add the next answer.



BINGO!

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking
- ✓ Measurement and Geometry

Materials Needed:

- Printed bingo cards
- Something to mark cards with (beans or counters)

Directions:

This game is a quick game that can be played virtually or with printed Bingo cards.

There are many games that are already made or you can make your own at www.bingobaker.com

1-75 <https://bingobaker.com/view/1228516>

Beginning multiplication
<https://bingobaker.com/view/4106768>

Clocks to the quarter hour <https://bingobaker.com/view/3389404>

2D and 3D Shapes

SLC Beginning Multiplication BINGO

B	I	N	G	O
4x10	1x10	0x2	0x4	5x6
5x10	2x5	0x6	1x3	2x3
3x10	2x6	Free!	0x5	5x5
3x3	0x3	1x2	1x1	3x5
1x4	0x10	2x4	1x6	3x6

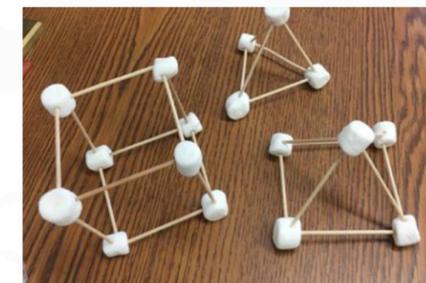
BUILD THE 3D SHAPE

Area of Focus:

Measurement and Geometry

Materials Needed:

- Toothpicks
- Marshmallows or gum drops



Directions:

This is another hands-on activity for kids to explore 3 dimensional shapes.

You can make this open ended by just putting out the materials and letting them build. Adults can then label what they see happening. "I see Jose made a triangular prism and Kia made a square prism."

Or it can be more direct with asking all the kids to create the same thing. "Build a cube."

CARD BINGO

Area of Focus:

✓ Number Sense, Counting & Base 10

Materials Needed:

- 2 deck of cards

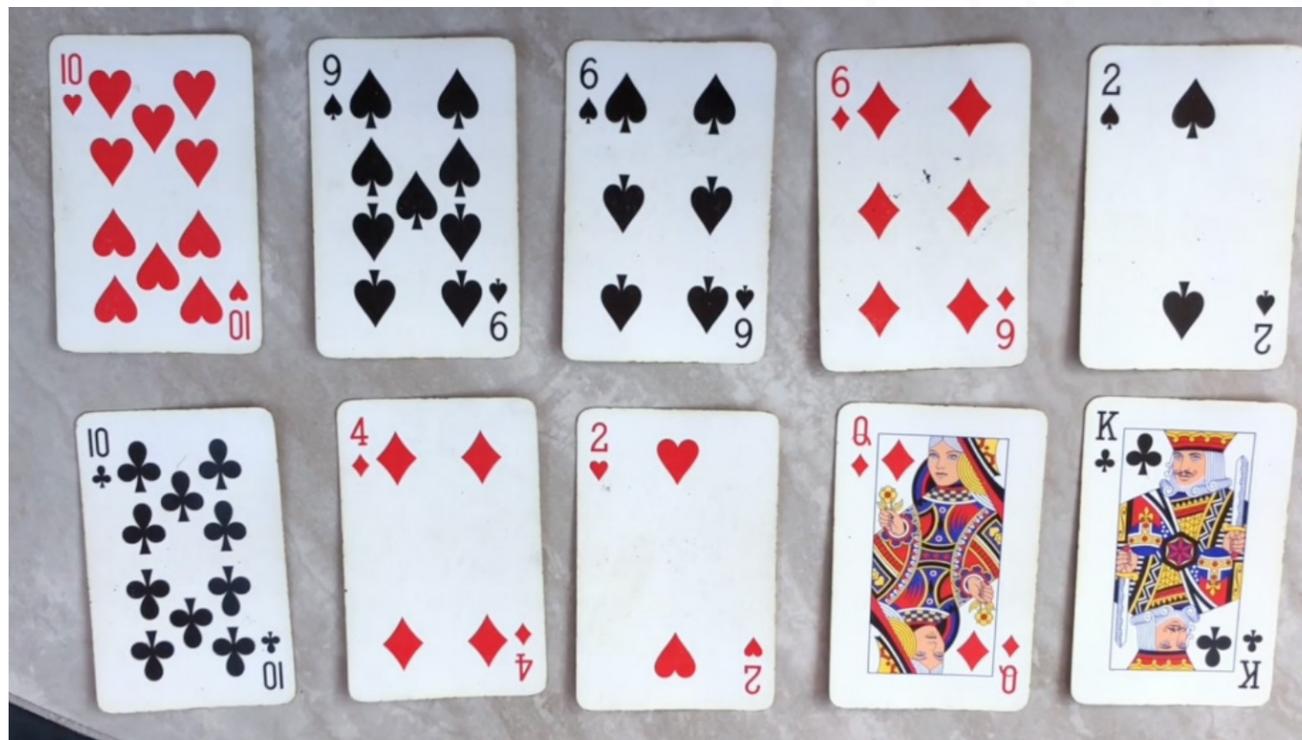
Directions:

This card game is excellent for three to four players.

You will need two decks of cards. Be sure to remove the face cards and jokers in both decks. Keep the decks separate from each other.

Each player is dealt ten cards. Each player must place their cards facing up, four cards on top and four cards on the bottom. As soon as ALL players have all ten cards facing up, the game begins. Using the other deck of cards, from the top, turn over one card at a time (e.g., 7 of hearts, 10 of diamonds, 5 of clubs). If the player has the card revealed, they will turn the card over.

The player who has turned over all eight cards first, WINS!



CARD CONCENTRATION

Area of Focus:

✓ Number Sense, Counting & Base 10

Materials Needed:

- 2 sets of playing cards

Directions:

Concentration can be a good game to play with students of varying ages as young students can often compete with older students.

First shuffle the cards well and then place each card face down in 4 rows of 13 cards each.

Each player takes a turn by turning two cards over. If the cards match, then the player picks up the cards and keeps them. If they don't match, the player turns the cards back over. If the player gets a match, they get to go again, until they fail to get a match.

A match is when two cards have the same rank and color. For example, a match would be two Jacks that were both red, one was the Jack of Diamonds and the other the Jack of Hearts. The game is over when all of the cards have been matched and picked up.

CLOSEST TO 100

Area of Focus:

✓ Number Sense, Counting & Base 10

✓ Operations & Algebraic Thinking

Materials Needed:

- 2 dice
- White boards (one for each team)
- Dry erase board (one for each team)
- Video Library

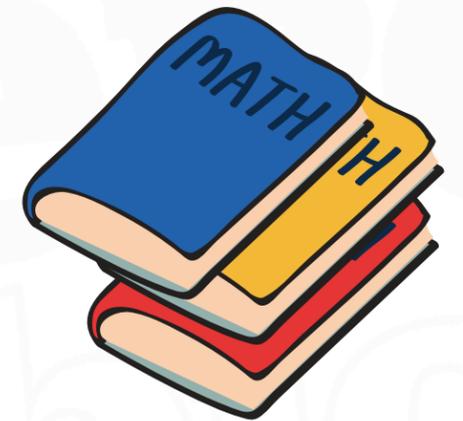
Directions:

This dice game is a great team building game.

The goal of this game is for the player to roll a set of dice and create a two-digit number. Roll a total of three times so that the teams have recorded three 2 digit numbers.

The teams will then add the three 2 digit numbers. Each team will share their total and the adult will assign a point to the team CLOSEST TO 100. The team who reaches 10 points first wins.

This can be tricky and create a lot of discussion with the teams. The teams may not always want to create



CLOSEST TO 200

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 2 dice
- White boards (one for each team)
- Dry erase board (one for each team)

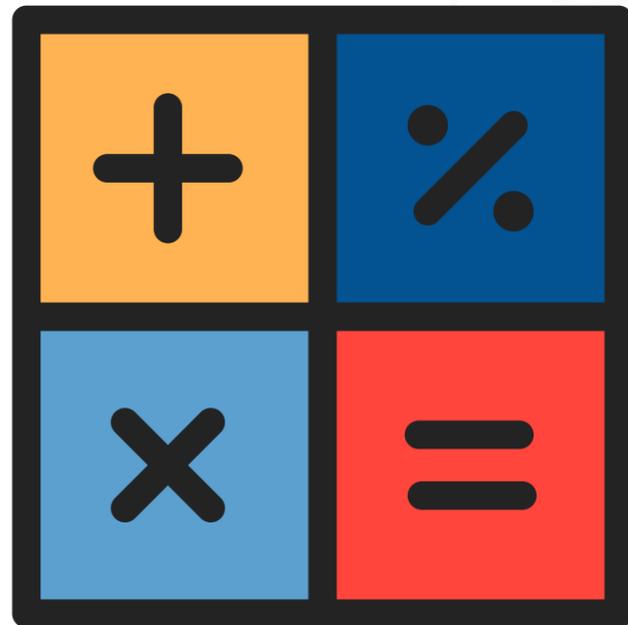
Directions:

This dice game is a great team building game.

The goal of this game is for the player to roll a set of dice and create a two-digit number. Roll a total of four times so that the teams have recorded four 2 digit numbers.

The teams will then add the four 2 digit numbers. Each team will share their total and the adult will assign a point to the team CLOSEST TO 200. The team who reaches 10 points first wins.

This can be tricky and create a lot of discussion with the teams. The teams may not always want to create the larger 2 digit number.



COLOR THE SHAPE

Area of Focus:

- ✓ Measurement and Geometry

Materials Needed:

- Large butcher paper or several smaller pieces (can be taped up around the room)
- Crayons or colored pencils

Directions:

This game is for quick identification of colors and shapes for kids just beginning to learn both (great for listening skills and following directions).

Before the game draw several different shapes on the paper and post them around the room. Also have coloring materials available for each child or a larger group to share.

The kids will start in the middle of the room facing out toward the papers. The caller says, "Find a square and color red." The kids have to race to find the color and then color 1 of the shapes.

This activity can also be extended for multi-step directions. "Color 1 square red then color 2 triangles green."



CONCENTRATION EXTRA

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking
- ✓ Measurement and Geometry

Materials Needed: Extra materials not included in kit

- Cards will need to be created or made by adult prior to game
- Video Library (with clocks)

Directions:

This game is fantastic because you can create them for a variety of levels and to build on many different skills.

Make two sets of cards of equal amount (vary the amount based on the age group). You can also vary the skill from simple numbers and pictures of ten frames (9) and ten frame.



Equations and sums ($2+4$) and (6) OR more challenging multiplication and division ($63 \div 9$) and (7).

Time with digital and analog (1:50).



Mix them up and turn them face down on the table. Players take turns turning over two cards at a time. When the player gets two cards that do not match they must place them back upside down and it is the other player's turn. If the player gets a match, then they can take another turn.

COUNTING RACE!

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- Butcher paper or something to write on
- Markers
- Timer

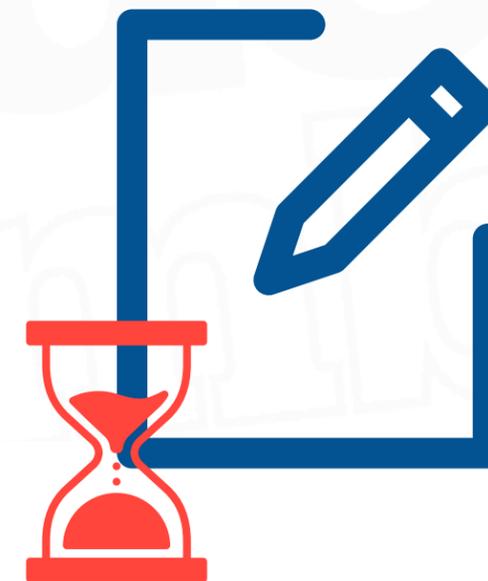
Directions:

Kids are divided into teams. Each team will have a designated piece of butcher paper that is taped on to the wall (use a table if there is no wall space). The butcher paper can be divided into as many games that will be played.

The adult will set the timer for the allotted minutes of the game (no more than 5 min) and then call out the first challenge (i.e. youngest students can count by ones 1, 2, 3, 4... older students can skip count forwards and backwards. Example: Start at 200 and skip count backwards by 5's OR multiples of 3 (please choose appropriately for the level).

The first person on each team will race over to the paper and write the beginning number in a section on the butcher paper then run back and hand off the pen. The next person on each team will then come up and write the next number in the series. If a student is unable to answer or answers incorrectly, then they go to the back of the line and pass the pen to the next in line. This continues until time runs out.

You can play as many variations of the game. The team with the most correct answers at the end of the time wins that section.



CRAZY TIC-TAC-TOE

Area of Focus:

✓ Number Sense, Counting & Base 10

Materials Needed:

- Deck of Cards
- White boards
- Dry erase markers

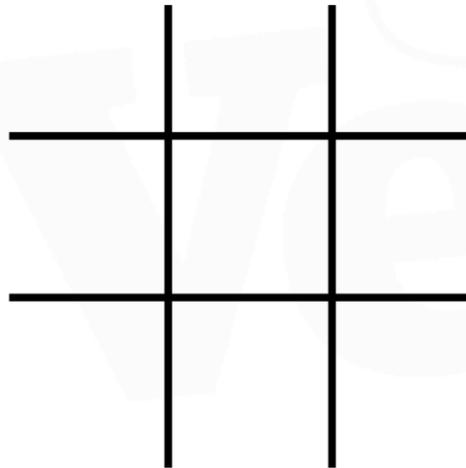
Directions:

This isn't your typical tic-tac-toe game.

Using a white board, the children create a large size tic-tac-toe board and decide who will be the "X" or the "O." The players divide evenly a deck of cards (without face cards and jokers). Each player flips over one card, or adds two cards. The player who has the highest card(s), then draws an "X or O" on the white board.

What might happen in this version of tic-tac-toe is that one person may go three times in a row and win! It is all part of the CRAZY TIC-TAC-TOE!

The first player to have three X's or O's in a row wins. If there is no winner, they start all over.



CRAZY TIC-TAC-TOE ADVANCED

Area of Focus:

✓ Number Sense, Counting & Base 10

Materials Needed:

- White boards
- Dry erase markers
- Dice

Directions:

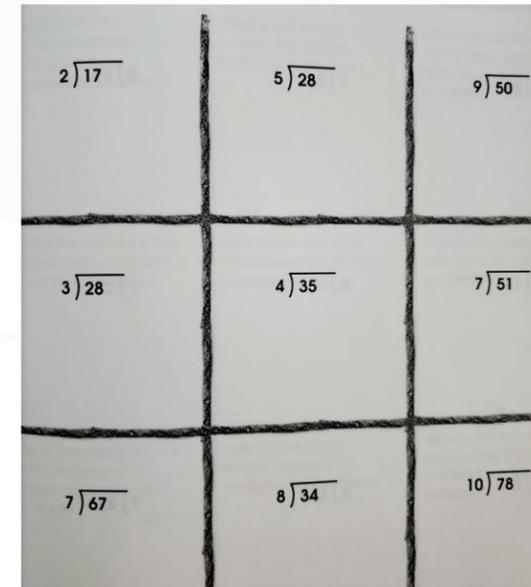
Using a white board, the children create a large size tic-tac-toe board and decide who will be the "X" or the "O."

The players or adult will decide what skill will be practiced (3 digit addition, long division, 2 digit multiplication, etc.). The players will roll the dice to create 9 different problems on the board. Once they have "created" the equations on the board, then they can rock, paper, scissors to see who picks first.

The first player must correctly solve the equation on the board before they draw their "X or O" on the white board.

Then the next player can pick a spot to answer and play on.

The first player to have three X's or O's in a row wins. If there is no winner, they start all over.



CREATE THE SHAPE

Area of Focus:

✓ Measurement and Geometry

Materials Needed:

- Playdough or clay

Directions:

Great for strengthening hands and therefore, fine motor skills.

Just like the previous game, the caller will say, "Create a circle". Or "Create a sphere."

Allow time for each shape to be created before moving on to the next shape.



DICE ROLL

Area of Focus:

✓ Number Sense, Counting & Base 10

✓ Operations & Algebraic Thinking

Materials Needed:

- Dice
- Whiteboards
- Markers or paper and pencil
- Video Library

Directions:

This activity is very open ended and can be used for a variety of levels and skills.

The objective is to either work on addition and subtraction with 1 digit numbers or it can be used for regrouping multiple digit numbers.

Whichever skill they are working, roll 1 (or several dice) and write down the equation on the whiteboard (i.e. $5,361-2,966$) OR (4×6) .



DICE WAR

Area of Focus:

✓ Number Sense, Counting & Base 10

✓ Operations & Algebraic Thinking

Materials Needed:

- 2 dice
- White Board
- Dry Erase Marker

Directions:

This is another version of WAR, but using dice instead.

Instead of using playing cards, players roll two dice and add the dots. The player with the highest number gets a point. Children will keep track of points on their white board (e.g., tally marks). You can add another die to the game to have the children add three numbers. For the older students, you can use two dice and have them multiply the dice.



DOMINO WAR

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

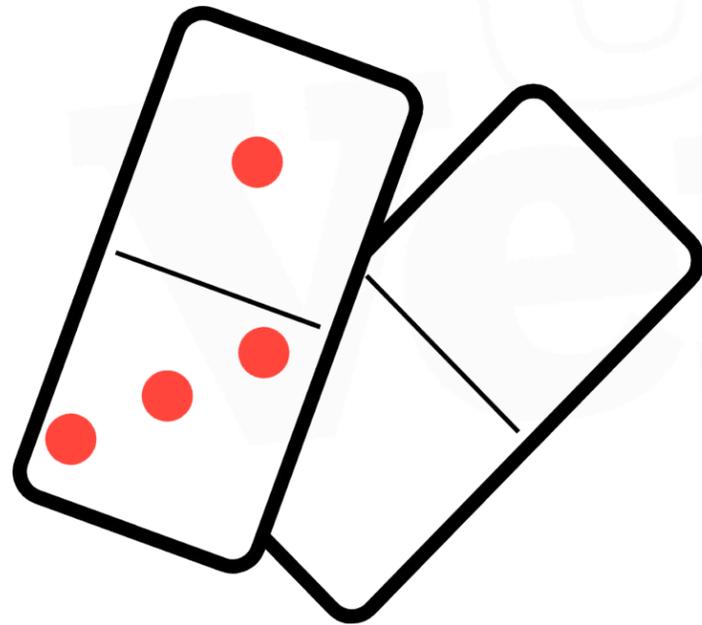
- 1 deck of paper dominoes (see index)

Directions:

This is another version of WAR, but using dominoes instead. Even if you don't have dominoes, don't worry! You can find a copy of paper dominoes for the game!

The players split up the previous cut out paper dominoes and are handed out evenly. Each player turns over ONE DOMINO from their own pile of dominoes. The player with the highest total in the group wins all dominoes flipped over.

This game continues until all dominoes have been played. If there is a tie, the players at WAR then add one more domino. Whoever flips over the higher domino WINS!



DOUBLE WAR

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

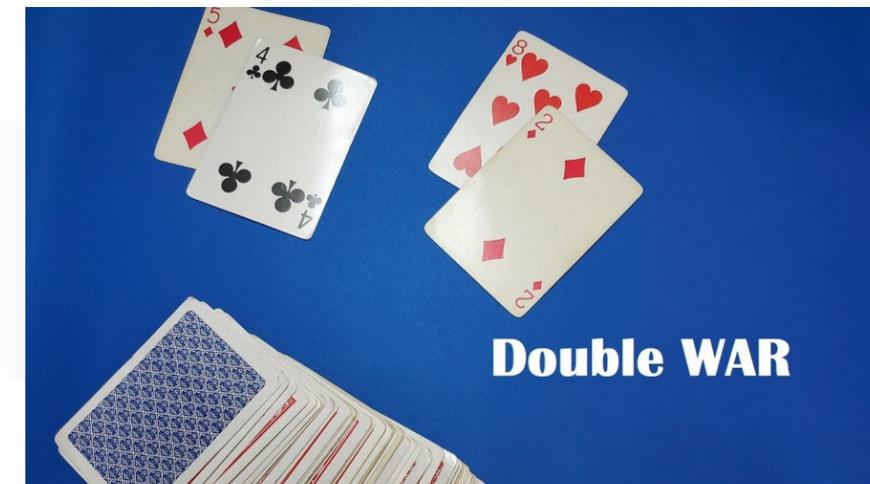
- 1 deck of cards

Directions:

This is another great game for comparing the sum.

The players split a deck of cards evenly. It is important to take out the face cards and jokers out of the deck. Each player turns over two cards from their own pile of cards. Using their flipped cards, each player then adds their two cards. The player with the highest total in the group wins all cards flipped over. This game continues until all cards have been played. If there is a tie, the players at WAR then add one more card to get a new total.

Whoever has the highest three number total.



FIND THE SHAPE 2D or 3D

Area of Focus:

✓ Measurement and Geometry

Materials Needed:

- Just kids!

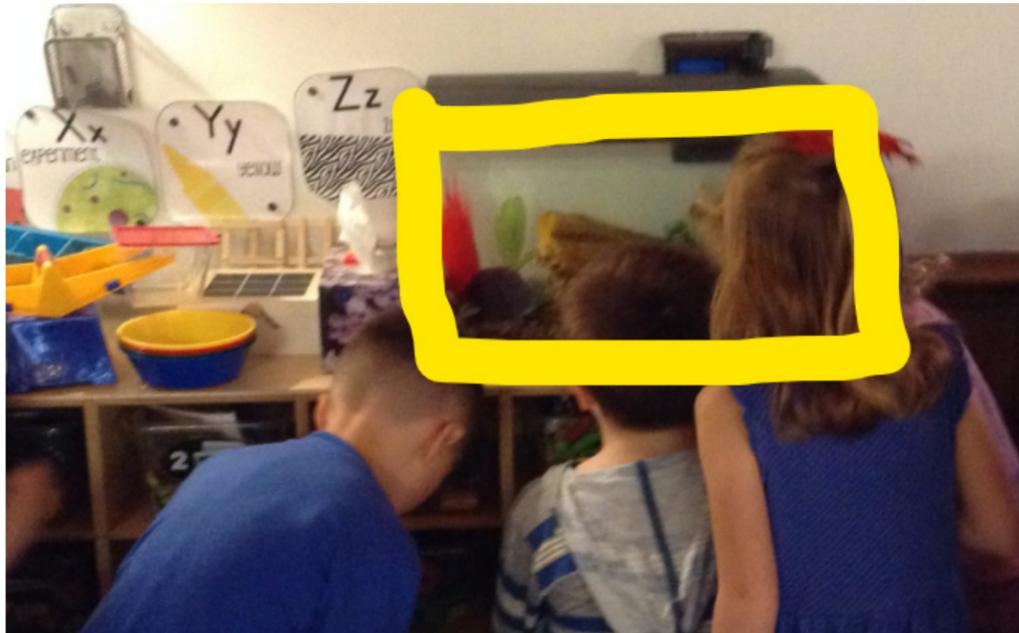
Directions:

This is a quick game that can be played during transition time or as just a quick time filler.

The adult or call will say, "Point to (or bring me) something that has a circle."

The kids will then scour the room to find something with that shape and point to it. It can continue for several rounds.

This is also a great time to introduce new vocabulary. "Find something that has 4 sides. We call that a quadrilateral."



GO FISH "FRIENDS OF 10"

Area of Focus:

✓ Number Sense, Counting & Base 10

Materials Needed:

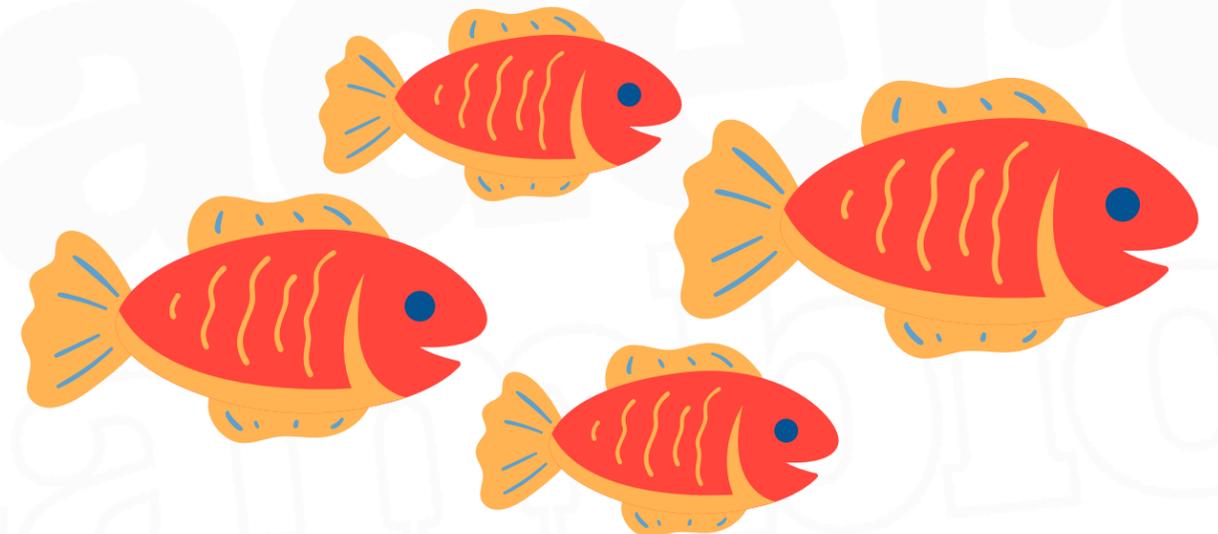
- Deck of cards or you can create your own deck.
- Video Library

Directions:

Get a deck of cards and take out all the face cards, including 10s. Ace=1 (or make your own set of cards 1-9).

This game is played like the traditional "Go Fish." Four cards are dealt to each player and the remaining cards are left in a pile, face down.

Player 1 asks player 2 for a card needed to be put with a card already in his/her hand that would make 10. For example, "I have a 3, do you have a 7?" If the opponent has the card asked for, it is given to the player and the pair of cards is placed next to the player. If the opponent does not have the card asked for, he/she says "Go Fish" and the player who asks picks up the top card from the deck. Whoever has the most



GO FISH!

MAKING NUMBER FAMILIES

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 1 deck of cards

Directions:

Before you begin this game, be sure to take out the face cards and jokers. The Ace card = 1!

The dealer gives every player six cards. The remaining cards should be placed in the middle of the group face down. The object of this game is to collect as many number families as possible.

To begin, all players will look at their cards and look for number families. Here are some number families examples:

$6 + 2 = 8$, $2 + 6 = 8$, $8 - 6 = 2$, $8 - 2 = 6$, so the number family set is 8, 6, and 2.

$9 + 1 = 10$, $1 + 9 = 10$, $10 - 1 = 9$, $10 - 9 = 1$, so the number family set is 10, 9, and 1.

Just as in the Go Fish game, each person takes turns in a circle asking each other for a number to complete their number family. If the person they are asking does not have the number they are asking for, they will then draw from the pile of cards. If they have created a number family from their draw, they can place the three cards down immediately.

The player who has no more cards and has collected the most number families wins!

GUESS MY NUMBER?

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- Just kids!

Directions:

This is a great whole group game that can be put together QUICKLY!

The adult thinks of a number then allows students to ask YES or NO questions about the number. For example: Does the number have two-digits? Is the number greater than 33? Is the number less than 33? Is there a 5 in the tens place? Does the number have two even numbers? Is the number less than 10?

When a student THINKS they can GUESS THE NUMBER, they can say, "I HAVE A GUESS! IS THE NUMBER ___?" If the student is correct, then repeat the process.



HIT THE TARGET!

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 1 deck of cards

Directions:

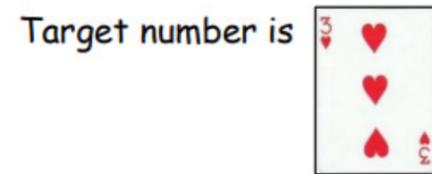
Before you begin this game, be sure to take out the face cards and jokers. The Ace card = 1 OR 11!

This game is played with 2 players.

The dealer gives every player five cards. The players then place their five cards (still faced down) in front of them. When both players have all five cards in front of them, the dealer will then flip ONE CARD BETWEEN THEM which is the TARGET card.

Using their own five cards, they need to see how many times they can HIT THE TARGET using their own cards.

The player who can hit the target the most wins all of the cards played during this round. Continue with the process until all cards are played.



A player could choose: $5 - 2$ or $8 - 5$
or $10 - 5 - 2$ or $5 \times 2 - 7$ Look for more ways!

I SPY MATH WAY

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 1 deck of cards
- Video Library

Directions:

Before you begin this game, be sure to take out the face cards and jokers. The Ace card = 1!

This is a wonderful game that supports children's math and listening skills.

Using a deck of cards, the adult lays out twenty cards face up. Using the cards for the math, the adult then asks questions connected to the cards showing. Asking one student at a time, the teacher may say, "I spy with my eyes 3 cards that equals 10!"

The one student the adult was talking to looks at the card grid for three cards that equals 10! If the student is correct, they will take all three cards, and the adult fills in the three holes with the remaining cards.

What is great about this game, the questions can be differentiated based on the student's age/level!



MAKE A CLOCK

Area of Focus:

- ✓ Measurement and Geometry

Materials Needed:

- Just kids!

Directions:

This game can be done with a large group of students. Break up into 2 teams or it can be played together with students creating a clock.

If you have 14 students or more start with 12 kids forming a circle representing the numbers on the clock. Indicate who is 12. Then call out a time and have one student lay down as the hour hand and the other represents the minute hand.

Once they get it correct, the outside students can coach, then rotate the 2 hands into the clock and have



MAKE BASE 10 BLOCKS

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- Pinto beans
- Glue
- Craft sticks

Directions:

Creating Base 10 blocks is a wonderful way for children to gain a deeper understanding of counting and mathematical concepts. The physical representation helps them learn place value, number concepts, and operations.

Single beans will represent 1, have students glue 10 on a craft stick to model 10, and then glue 10 sticks of 10 together to build 100.

Once they get it correct, the outside students can coach, then rotate the 2 hands into the clock and have



MAKE THE SHAPE

Area of Focus:

- ✓ Measurement and Geometry

Materials Needed:

- Toothpicks or popsicle sticks

Directions:

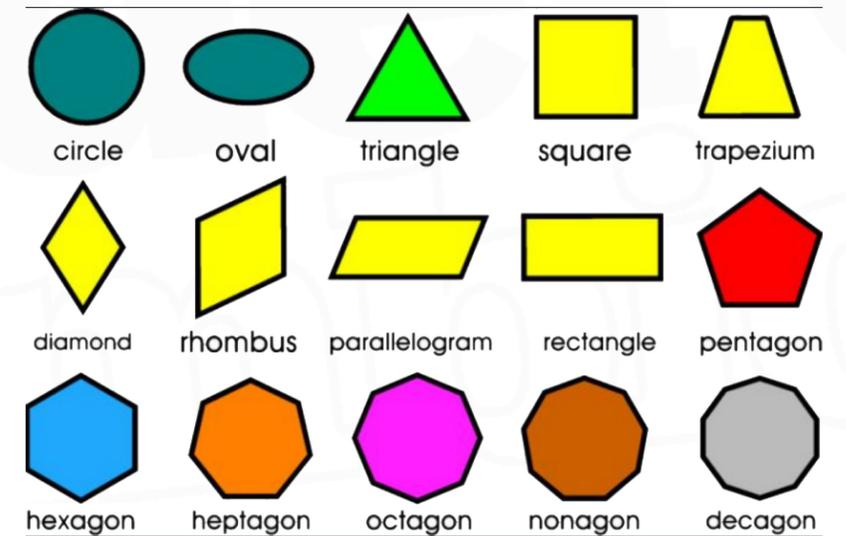
This hands on activity can be done for a variety of learning levels based on the vocabulary used.

Those just learning: square, triangle, square, diamond (have fun with a star).

Those with more understanding: rhombus, parallelogram, trapezoid, octagon, quadrilateral, etc.

The caller will say, "Build a pentagon". If more support is needed, indicate "You will use 5 sticks."

Once it is built have them clear the space and call out a new shape.



MAKING NUMBER FAMILIES

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 1 deck of cards
- Video Library

Directions:

Making number families with cards is key to this game!

Here are some number families examples:

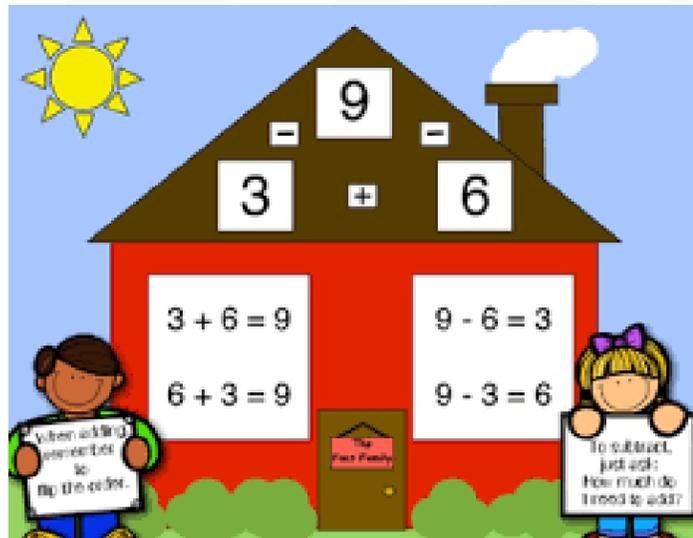
$6 + 2 = 8$, $2 + 6 = 8$, $8 - 6 = 2$, $8 - 2 = 6$, so the number family set is 8, 6, and 2.

$9 + 1 = 10$, $1 + 9 = 10$, $10 - 1 = 9$, $10 - 9 = 1$, so the number family set is 10, 9, and 1.

There are several more family sets, but for the purpose of this game, Ace = 1, a Jack = 10, a Queen = 11, and a King = 12.

Each player gets six cards. The remaining cards need to be placed face down in the middle of the players. Each player looks at their six cards to find possible number family sets. If you don't have any families, one at a time, each player discards one card and grabs another card from the deck. The goal of this game is to make two number family sets with your cards.

The player who has two complete number family sets first wins!



MATH SIMON SAYS

Area of Focus:

- ✓ Number Sense, Counting & Base 10

Materials Needed:

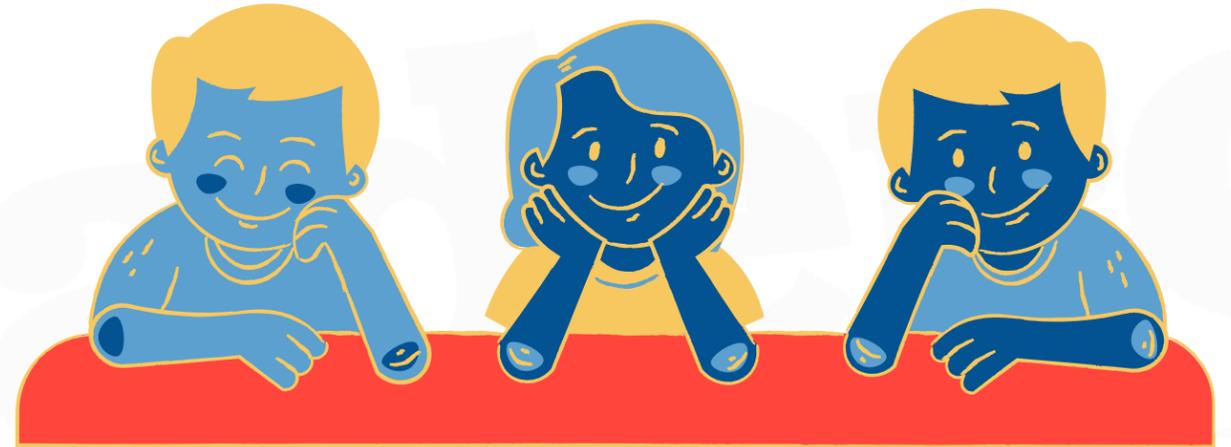
- Just children

Directions:

What is nice about this game, it doesn't matter how large your group is. It will work! Pretty basic and simple, but a whole lot of fun!

As with the typical "Simon Says" game, the adult will shout math problems and the students will respond by showing the answer with their fingers (e.g., Simon Says, show me 5, what is $5 + 5$, what is $12 - 6$).

When the adult just says the answer and the children shout out the answer, they will have a seat because Simon Didn't Say it!



MATHEMATICAL MUSICAL CHAIRS

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- Chairs
- Playing cards
- Create equation cards
- Tape

Directions:

Played like musical chairs but with numbers or equations taped to the back of chairs.. You can also tape playing cards for younger students (take out face cards).

Play the music as normal, when the music stops the student will stop in front of the chair or sit. They can then call out the number on the card or answer the equation taped on the back of the chair.

Can use addition and subtraction sentences

$$8 + 9 =$$

$$24 - 11 =$$

Higher mental math equations

$$299 + 182 =$$

$$455 - 299 =$$

Multiplication and division

$$9 \times 8 =$$

$$40 \div 8 =$$

It can also be used for decimal points, fractions, and shapes.

10 together to build 100.

Once they get it correct, the outside students can coach, then rotate the 2 hands into the clock and have 2 different children rotate in.

ODD-EVEN RACE



Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 1 deck of cards

Directions:

Before you begin this fun and crazy game, be aware that the Ace card = 11, Jack = 12, Queen = 13, and the King = 14.

Place one odd numbered card and one even numbered card in the center of the table. With the remaining cards, split the rest of the deck between the two players. DO NOT LOOK AT YOUR CARDS!

When a player says go, the players will look at one card at a time from their own deck and races to get rid of their cards by placing their odd number cards on the odd stack and the even number cards on the even stack.

The first player to CORRECTLY get rid of all of their cards wins!

You can always and two more players, but be sure to use two decks.

OVER-UNDER



Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 1 deck of cards
- Video Library

Directions:

Before you begin this game, be sure to take out the face cards and jokers. The Ace card = 1

This game is for two players. Players split the deck of cards evenly. One player is the "UNDER 30" player and the other is the "OVER 30" player.

Each player turns over one card at a time. The two numbers are then multiplied together. If the product is less than 30, the "UNDER 30" player keeps the cards. If the product is greater than 30, the "OVER 30" player keeps the cards. If the product is exactly 30, each player takes their card back, placing it back in their deck.

The winner of the game is the one with the most cards!

RACE TO 100 (K-1st)

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 1 dice
- Board Game (see index)
- 1 counter per player
- Video Library

Directions:

Each player gets their own 100's board.

Before you begin, each player takes turns to roll one die to decide who goes first. As soon as that is determined, the children will begin the game.

Every player begins at ZERO. Each player rolls one die and moves their counter/bean to the appropriate number. For example, since the player is starting at the number ZERO, then rolls a 4, the player will move their counter/bean 4 squares. Then the next player will go.

This process is repeated UNTIL the first player races to 100. It is important to know that when a player reaches 100, that player will need to hit the number 100 EXACTLY.

For example, if the player is at the number 92, he/she will need to roll at least two times since they need 8 spaces to reach 100. If the player rolls a 4, he/she will need to roll again until they reach 4 more spaces to get to 100.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

RACE TO 100 or RACE TO 0 (2nd - 5th)

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- Place Value Mat (see index)
- 1 die for group or for individual players
- Beans and base 10 sticks built in the Make 10 Base Blocks game above
- Video Library

Directions:

This is a great game because it contains many skills needed to have a good foundation of base 10, fluency with addition and subtraction, and regrouping.

Have the students start with a blank mat (a piece of paper folded into 3 parts--see picture above). The first player will roll the die. They will then count out the amount of beans they rolled and add it to the "Ones Place" on their mat. The die is then passed to the next player or continue the game if playing individually with a second roll.

Once there are at least 10 beans in the Ones Place, then the player may exchange 10 beans for a stick with 10 beans glued to it. This will be placed in the "Tens Place". The game continues rolling the die and exchanging beans until 1 player can exchange 10 -10 sticks for a 100 flat.



SALUTE!

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 1 deck of cards
- Video Library

Directions:

This game CAN get a little loud!

You will need 3 plays for this game. Each player has a role. One player is the “BRAIN” and the other two players are the “SOLVERS.” The “brain” gives each solver ONE card face down. The ‘solvers’ keep the card face down until the “brain” says SALUTE.

When the brain says salute, the solvers place the card on their forehead (with the number showing). The solvers CANNOT see what number is on their own head, but can see the other “solvers” card.

The brain looks at both cards and says, “The total is ___!” Based on what they see on the other solver’s forehead, they need to figure out what number is on their own forehead and say that number before the other solver does.

Whoever says what number is on their forehead first wins! The process of the game is repeated until all cards are done.

It is best if you remove all face cards and jokers before you play the game. Ace cards = 1.



SCORE!

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 1 deck of cards
- White board (one for each player)
- Dry erase markers (one for each player)

Directions:

This game needs 4 to 6 players.

One of the players is the “referee.” The referee’s role flips over three cards, and looks for the first player to write the correct answer. The player who writes the correct answer first according to the referee gets a point.

The player who reaches ten points first wins!



SHAKE A 10 or 20

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 10 or 20 per child- two sided counters
- Dry erase board
- Dry erase marker
- Paper and pencil, cup (optional)
- Video Library

Directions:

This activity is wonderful to help children gain the understanding of friends of 10 and also the relationship between numbers.

Start with 10 counters, you can shake them in a cup or just in your hands, and dump them out. Group and count the red and yellow counters separately. Then the 2 addition sentences and 2 subtraction sentences should be written out (or it can be done verbally).

Continue to shake, dump, count, and write. Once 10 is mastered, you can add another 10 and work on fluency to 20.

You can start with a smaller amount of counters if they need more practice with numbers below 10.

This can also be used for multiplication and division. The child can choose their own amount of counters.

Example:

$$\begin{array}{ll} 2 + 8 = 10 & 10 - 8 = 2 \\ 8 + 2 = 10 & 10 - 2 = 8 \end{array}$$

$$\begin{array}{ll} 2 \times 3 = 6 & 6 \div 3 = 2 \\ 3 \times 2 = 6 & 6 \div 2 = 3 \end{array}$$

STAND-UP, SIT DOWN MATH

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking
- ✓ Measurement and Geometry

Materials Needed:

- Seating space

Directions:

The children can either sit in chairs, carpet, or a gym floor. The adult will shout out a math problem (e.g., a square has 4 sides, $4 \times 4 = 16$, $8 + 4 = 12$).

Some math problems will be correct, and some math problems will be wrong. When the adult shouts out an incorrect math problem, the children will stand up. The children will sit back down when the adult correctly shouts out the answer.

This game can be played over and over and is a great time-filler activity.



1. Stand up.



2. Sit down.

STRATEGY WAR

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 1 deck of cards

Directions:

This is another version of WAR with a twist.

Before the game begins, divide a deck of cards evenly between all players. At the same time, each player turns over four cards from his/her stack. Using the four cards in front of you, it is the players goal to create the highest possible total. Here is the twist! The Ace card = 1, the Jack card = 10, the Queen card = 11, and the King card = 12.

If there is a tie, this is when WAR happens.

Those in the tie will turn over four more cards to create the highest possible total. When all of the cards

THREE-DIGIT WAR



Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 1 deck of cards

Directions:

This is a great game for creating three-digit numbers.

The players split a deck of cards evenly. It is important to take out the face cards and jokers out of the deck. Each player turns over three cards from their own pile of cards.

Using their three cards, they will then place them side by side to create a three-digit number (if they turn over a 1, 5, and 4, they could make 541). The player who creates the largest three-digit number wins! If war happens, then the process is recreated for ONLY those who are in a war.

TENS CONCENTRATION

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 1 deck of cards

Directions:

This game can be played with up to 5 players.

The object of this game is to find two cards to equal TEN! Before you play this game, you will need to set aside all face cards and jokers. The ace card equals a one. All other numbers equal their value.

Before you begin the game, place 12 cards (a 4 x 3 grid) face down with the remaining cards in a stack on the side. One player turns over two cards. It is important to follow the rule, "once you touch it, you flip it!" This helps with cheating.

When a child turns over two cards that are EQUAL to 10, the player will set those aside and fill in those holes with two new cards from the sitting deck. The player gets to go again until they no longer select two cards that equal 10.

The player who has the most pairs of tens when all cards are gone is the winner!



UNCOVER

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 2 dice
- Board Game (see index)
- 20 counters (10 per player)
- Video Library

Directions:

This game is specifically for two players. The object of this game is to "uncover" the colored counters by matching/adding total numbers on dice. First person to uncover counters first wins.

Determine who goes first and choose a colored counter (red or yellow). Put a color counter next to a number, each player gets only one side of the numbers on the board. The first person rolls both dice, matches die to numbers on board, and then adds both dice. Player decides whether she/he wants to uncover the number of added dice, or numbers rolled. After all plays have been made, it is the next players turn. First person to uncover all numbers wins!

If you roll doubles (same number), you can either remove the total of die OR the number (example: if you roll two 5's, you can either remove the 10 or the 5).

WAR (K - 5th)

Area of Focus:

- ✓ Number Sense, Counting & Base 10
- ✓ Operations & Algebraic Thinking

Materials Needed:

- 1 deck of cards per pair
- Video Library

Directions:

Deal all cards out between the two players (take out face cards and jokers). Each player lays down 1 card. The player who laid down the highest card gets to add (or multiply) the two numbers together first.

If they answer correctly, then they get to keep both cards. If they are unable to answer correctly, player two gets a chance to win both cards by answering. If neither partner can answer them, then they stay in the pile.

There is a war when both players lay down the same number. When this happens, each player lays down three cards upside down and then one right side up. Whoever is able to come up with the correct sum the quickest, wins the set.

The game is played until the 1 player has won the deck.



WAR WITH FRACTIONS

Area of Focus:

- ✓ Operations & Algebraic Thinking

Materials Needed:

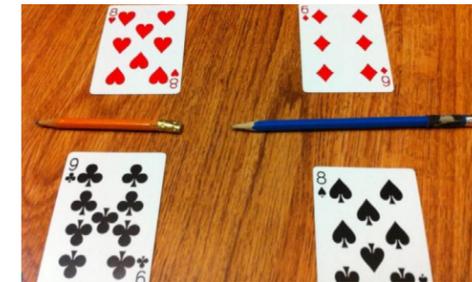
- Deck of cards per pair

Directions:

Deal all cards out between the two players. (Take out jokers and face cards) Each player lays down 2 cards. (a numerator and denominator) The player who laid down the highest fractions gets to collect all 4.

Example: 8 (x8=64) Winner 6 (x9=54)
 9 (x8=72) 8 (x9=72)

The game is played until the 1 player has won the deck.



WHAT IS THE SECRET NUMBER?

Area of Focus:

- Number Sense, Counting & Base 10
- Operations & Algebraic Thinking

Materials Needed:

- Secret Number Cards (in index)

Directions:

Using the guessing cards, the adult reads the cards for clues to figure out the “secret number!” The player/team who says the secret number first wins a point. The player/team who reaches ten points first wins!



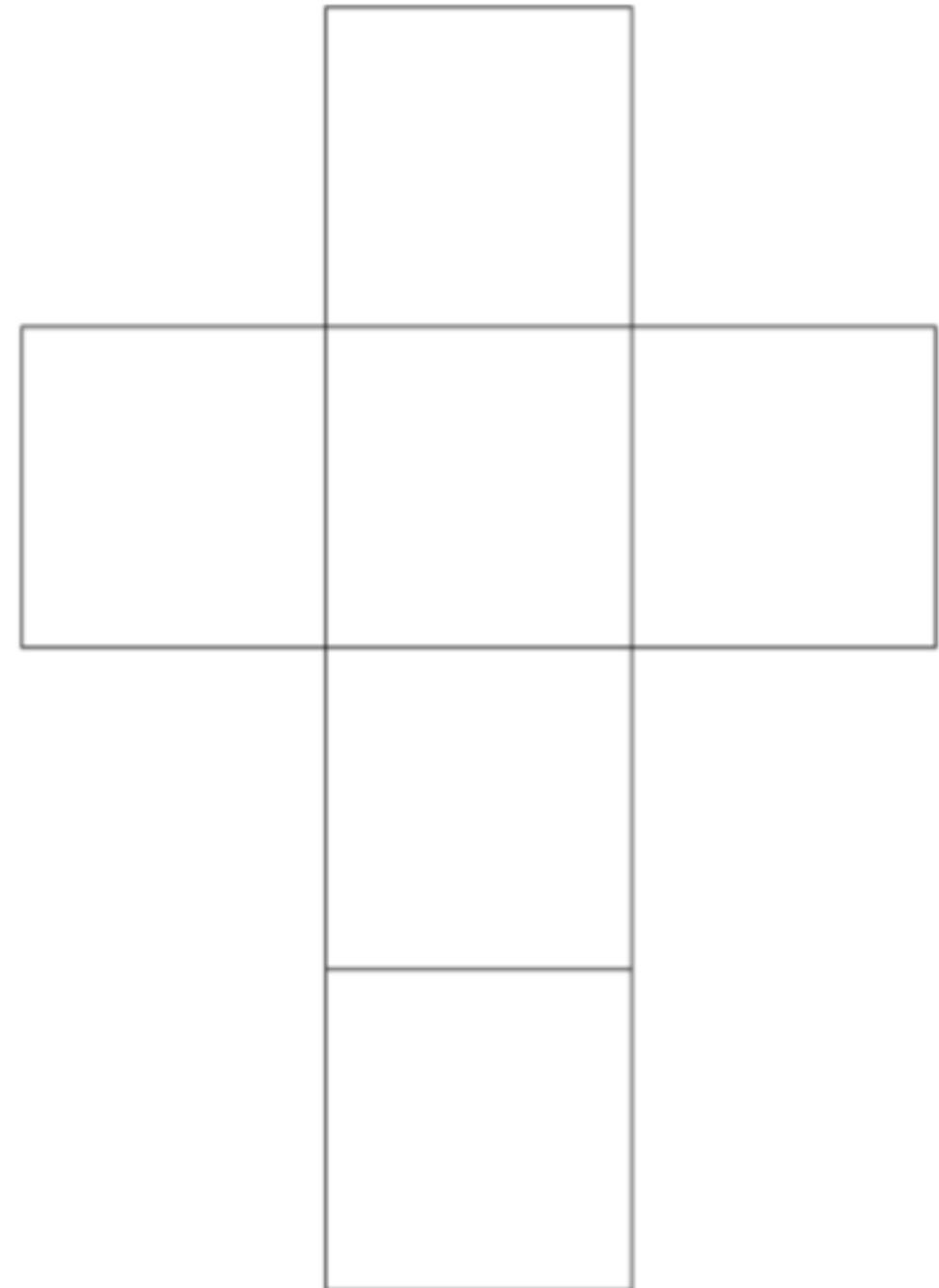
INDEX

Ones 	
Tens 	
Hundreds 	

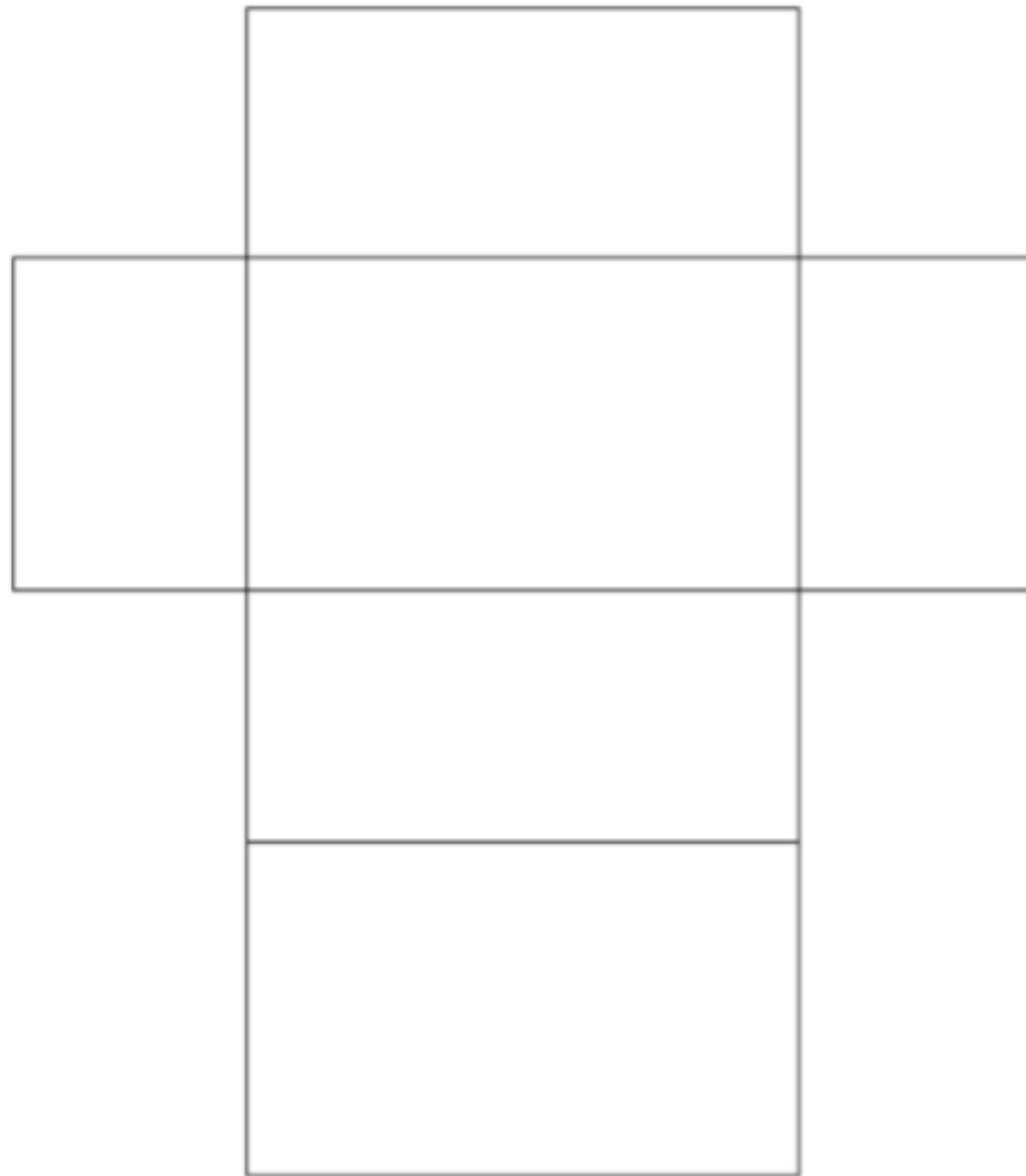
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21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
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41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
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91	92	93	94	95	96	97	98	99	100

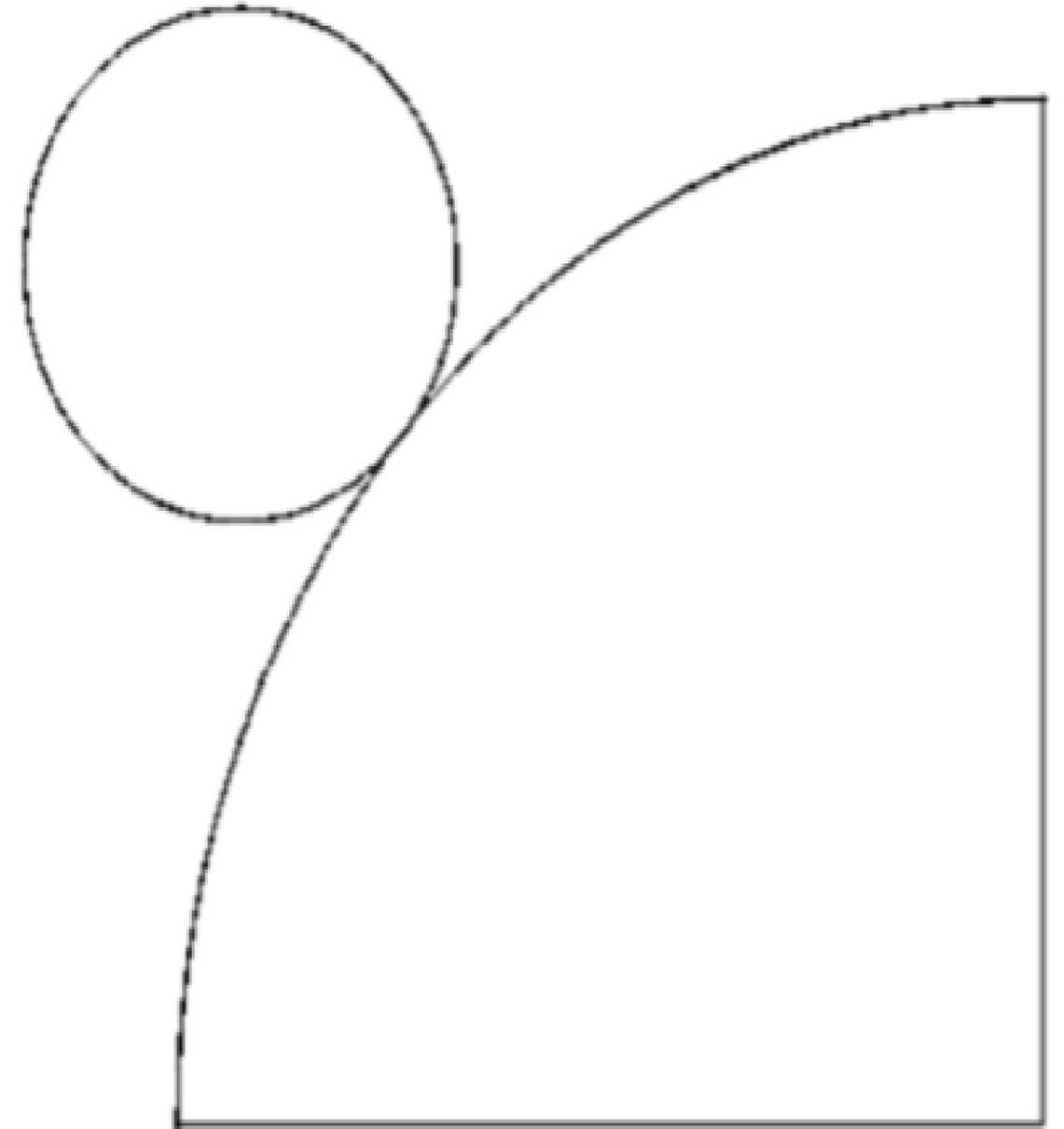
cube



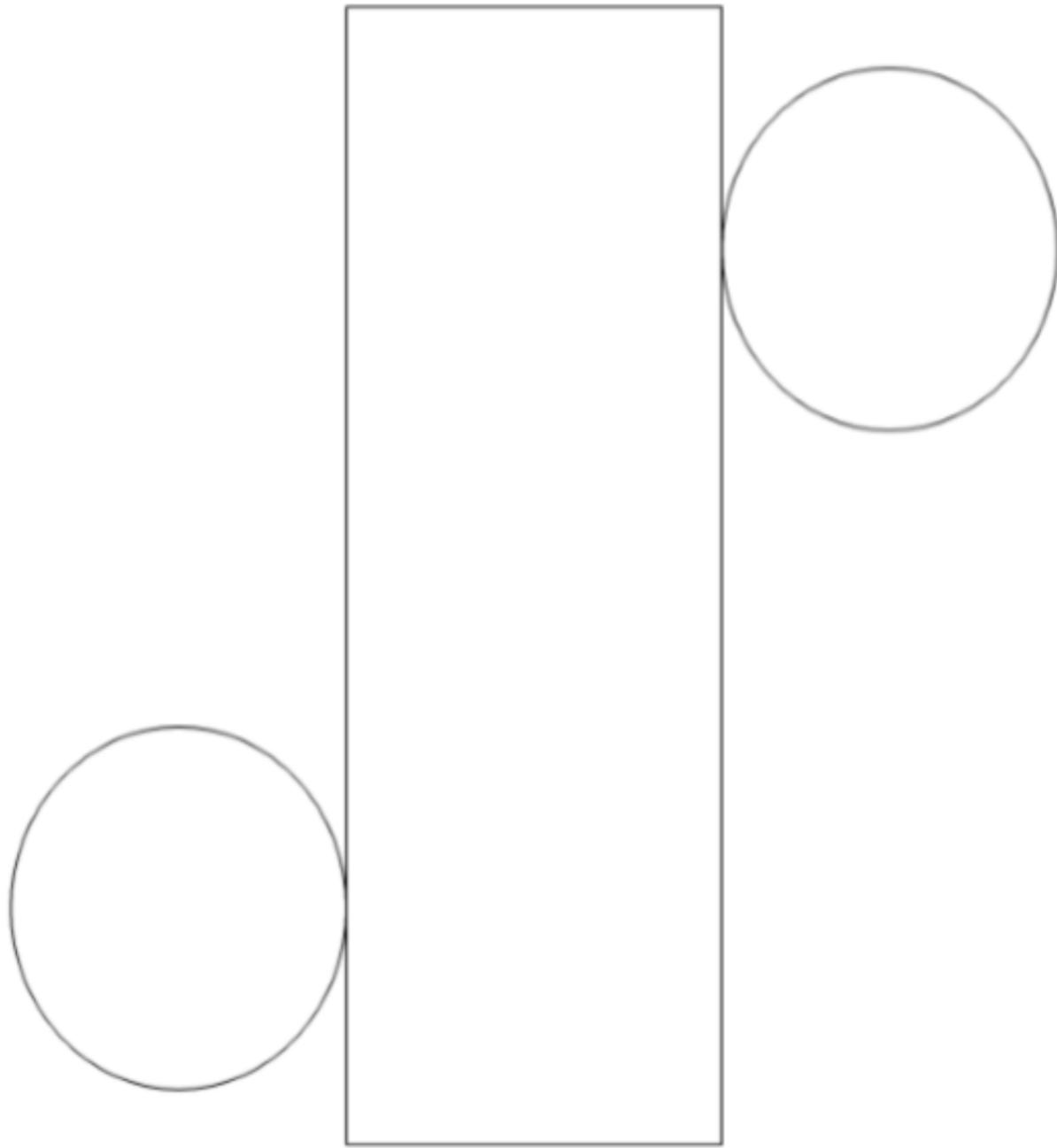
rectangular prism
or cuboid



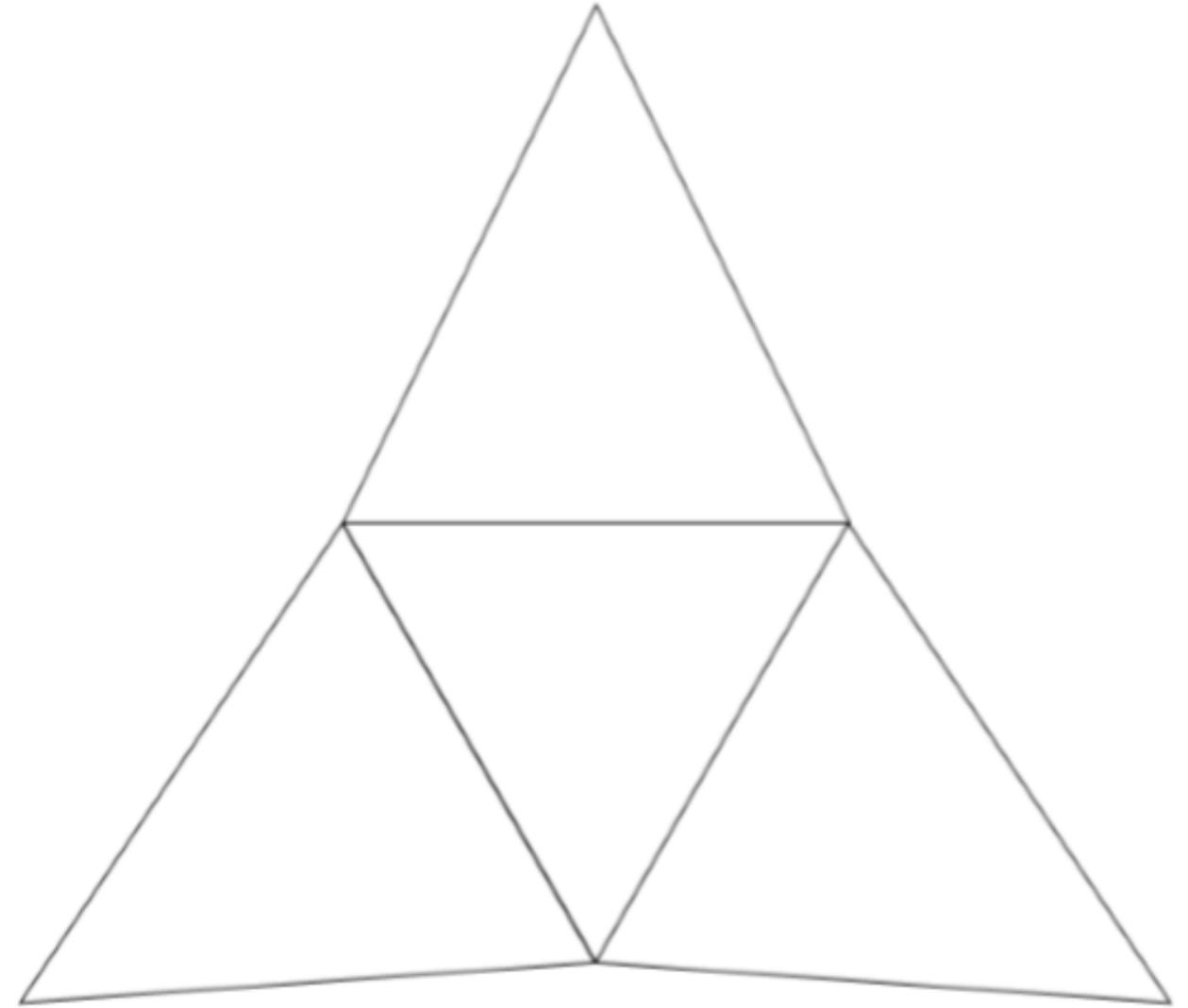
cone



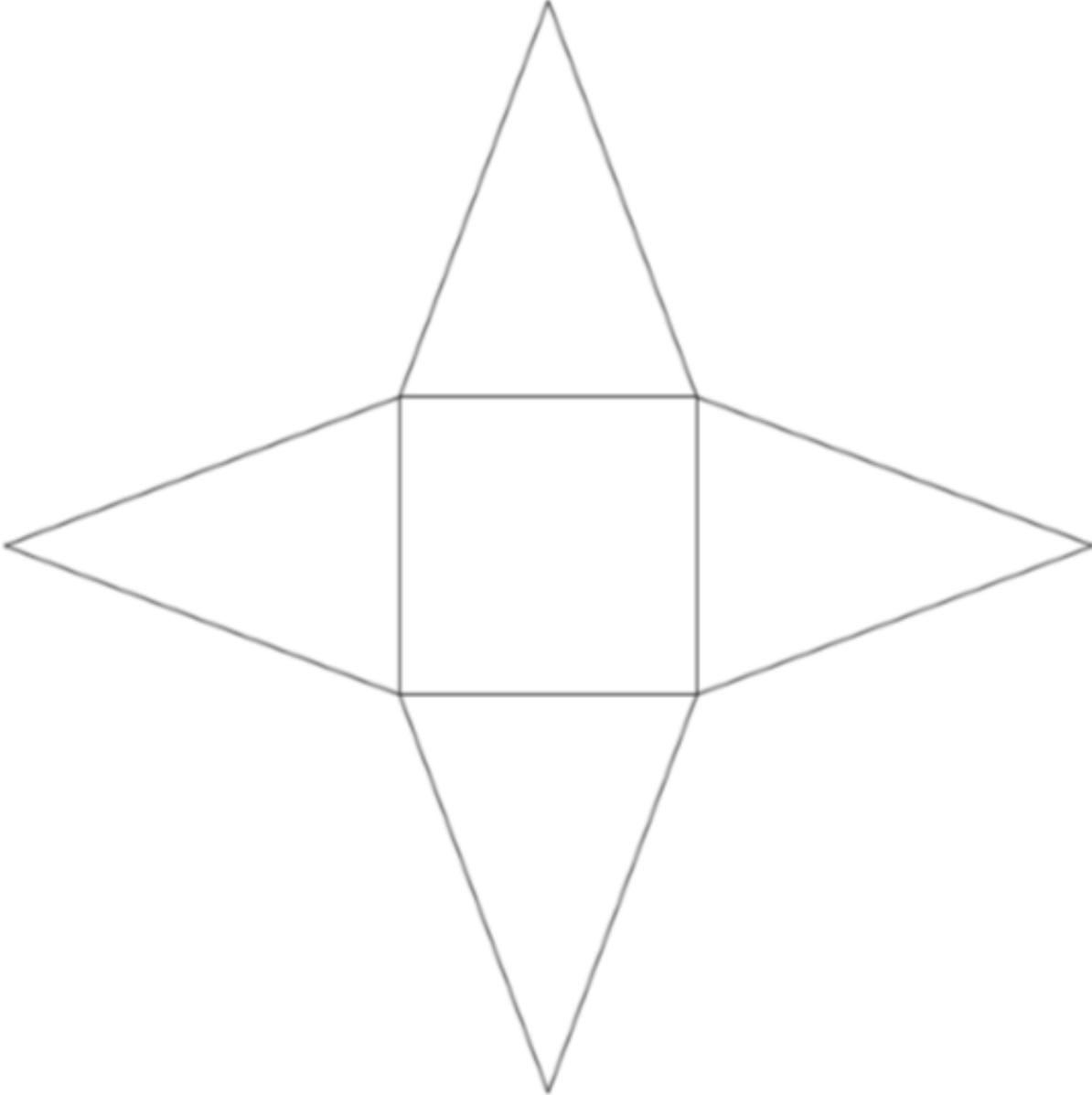
cylinder



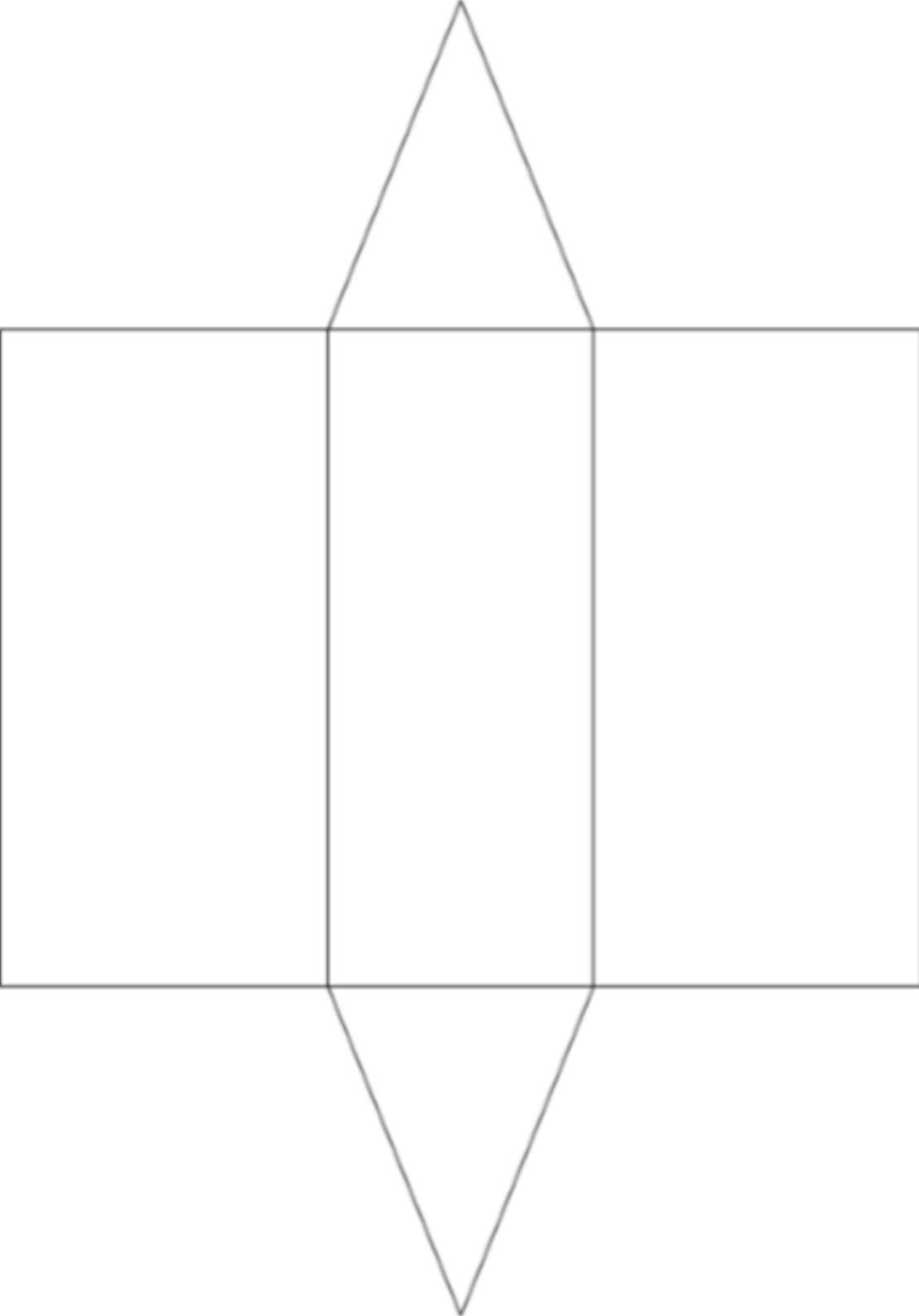
triangular pyramid



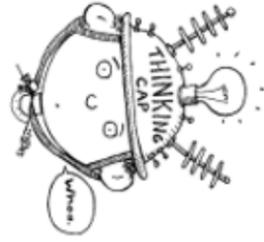
square based pyramid



triangular prism



1
2
3
4
5
6
7
8
9
10



Uncover

10
9
8
7
6
5
4
3
2
1

Secret Number Cards



1. It's not $16+21$.
2. It's not $32+31$.
3. It's not $15+23$.

36	37
63	38

E The secret number is _____.



75	89
69	65

1. It's not $24+45$.
2. It's not $32+57$.
3. It's not $43+32$.

I know the secret number!

F It's _____.



1. It's not $19+20$.
2. It's not $64+11$.
3. It's not $34+23$.

93	57
39	75

I know the secret number!

G It's _____.



62	73
84	51

1. It's not $41+21$.
2. It's not $32+41$.
3. It's not $13+71$.

H The secret number is _____.



1. It's not $34+43$.
2. It's not $52+16$.
3. It's not $61+37$.

77	78
98	68

A The secret number is _____.



47	73
74	75

1. It's not $31+42$.
2. It's not $25+22$.
3. It's not $61+14$.

I know the secret number!

B It's _____.



1. It's not $14+11$.
2. It's not $20+13$.
3. It's not $41+25$.

66	22
25	33

I know the secret number!

C It's _____.



68	67
69	66

1. It's not $32+37$.
2. It's not $14+53$.
3. It's not $33+33$.

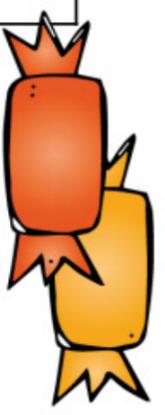
D The secret number is _____.



1. It's not $13+41$.
2. It's not $22+21$.
3. It's not $27+21$.

48	43
53	54

M The secret number is _____.



- | | |
|----|----|
| 47 | 46 |
| 36 | 37 |
1. It's not $22+14$.
 2. It's not $35+11$.
 3. It's not $25+22$.

I know the secret number!

N It's _____.



1. It's not $53+25$.
2. It's not $32+35$.
3. It's not $53+15$.

67	79
78	68

I know the secret number!

O It's _____.



- | | |
|----|----|
| 28 | 36 |
| 26 | 38 |
1. It's not $14+14$.
 2. It's not $22+16$.
 3. It's not $12+24$.

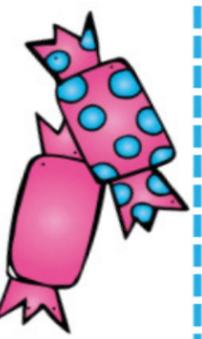
P The secret number is _____.



1. It's not $41+22$.
2. It's not $20+21$.
3. It's not $13+45$.

58	63
73	41

I The secret number is _____.



- | | |
|----|----|
| 96 | 45 |
| 58 | 44 |
1. It's not $32+26$.
 2. It's not $20+24$.
 3. It's not $42+54$.

I know the secret number!

J It's _____.



1. It's not $19+70$.
2. It's not $46+41$.
3. It's not $60+25$.

89	87
83	85

I know the secret number!

K It's _____.



- | | |
|----|----|
| 39 | 48 |
| 68 | 56 |
1. It's not $47+21$.
 2. It's not $26+13$.
 3. It's not $42+14$.

L The secret number is _____.



1. It's not $35+51$.
2. It's not $52+42$.
3. It's not $73+16$.

86	94
89	97

U The secret number is _____.



43	44
45	42

1. It's not $30+13$.
2. It's not $23+21$.
3. It's not $14+31$.

I know the secret number!

V It's _____.



1. It's not $53+26$.
2. It's not $53+34$.
3. It's not $45+22$.

76	87
79	67

I know the secret number!

W It's _____.



96	69
78	87

1. It's not $17+61$.
2. It's not $65+31$.
3. It's not $53+34$.

X The secret number is _____.



1. It's not $40+12$.
2. It's not $31+32$.
3. It's not $32+22$.

61	63
52	54

Q The secret number is _____.



89	88
98	99

1. It's not $26+63$.
2. It's not $44+44$.
3. It's not $17+81$.

I know the secret number!

R It's _____.



1. It's not $45+31$.
2. It's not $34+65$.
3. It's not $15+51$.

66	76
86	99

I know the secret number!

S It's _____.

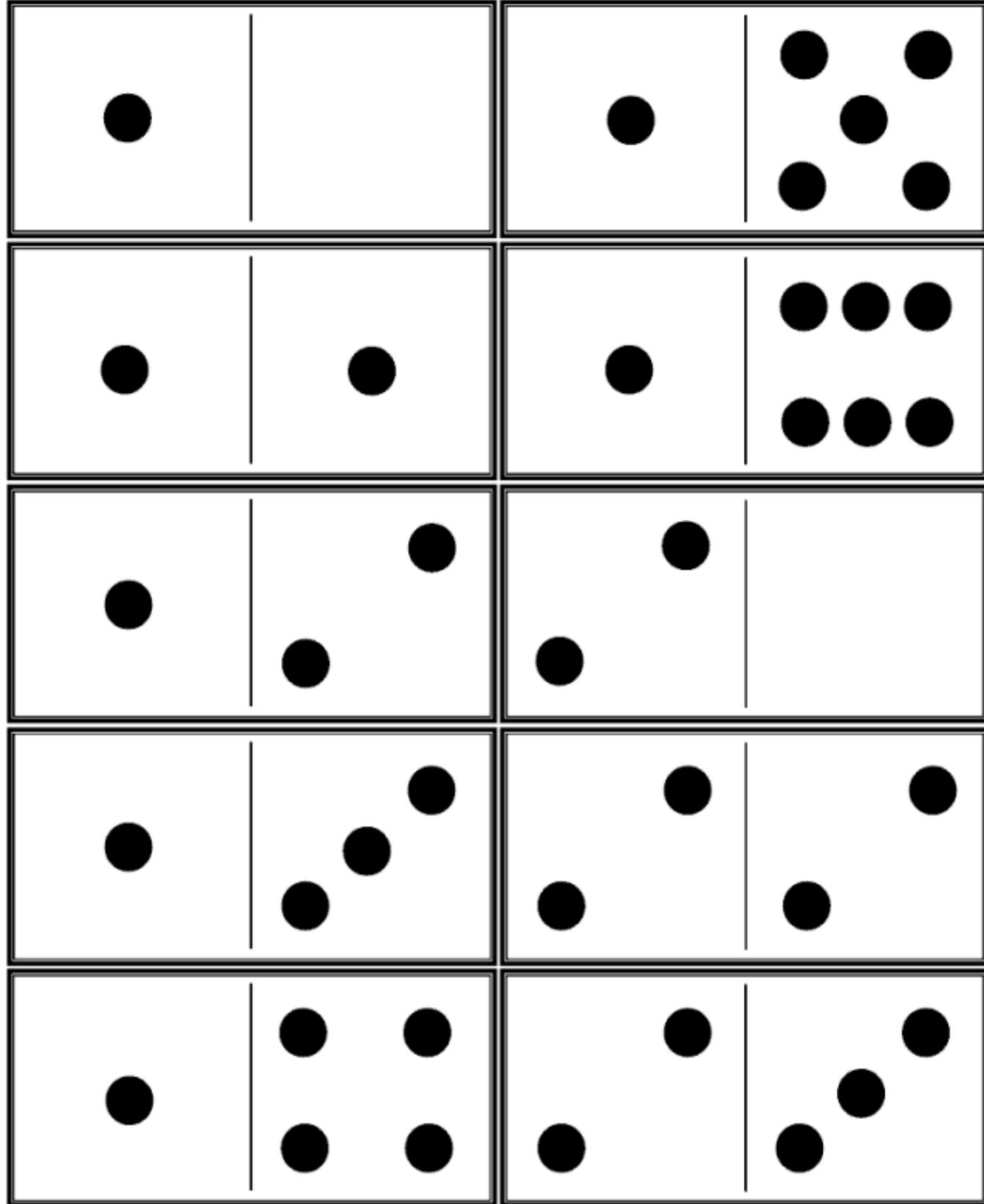


29	34
28	39

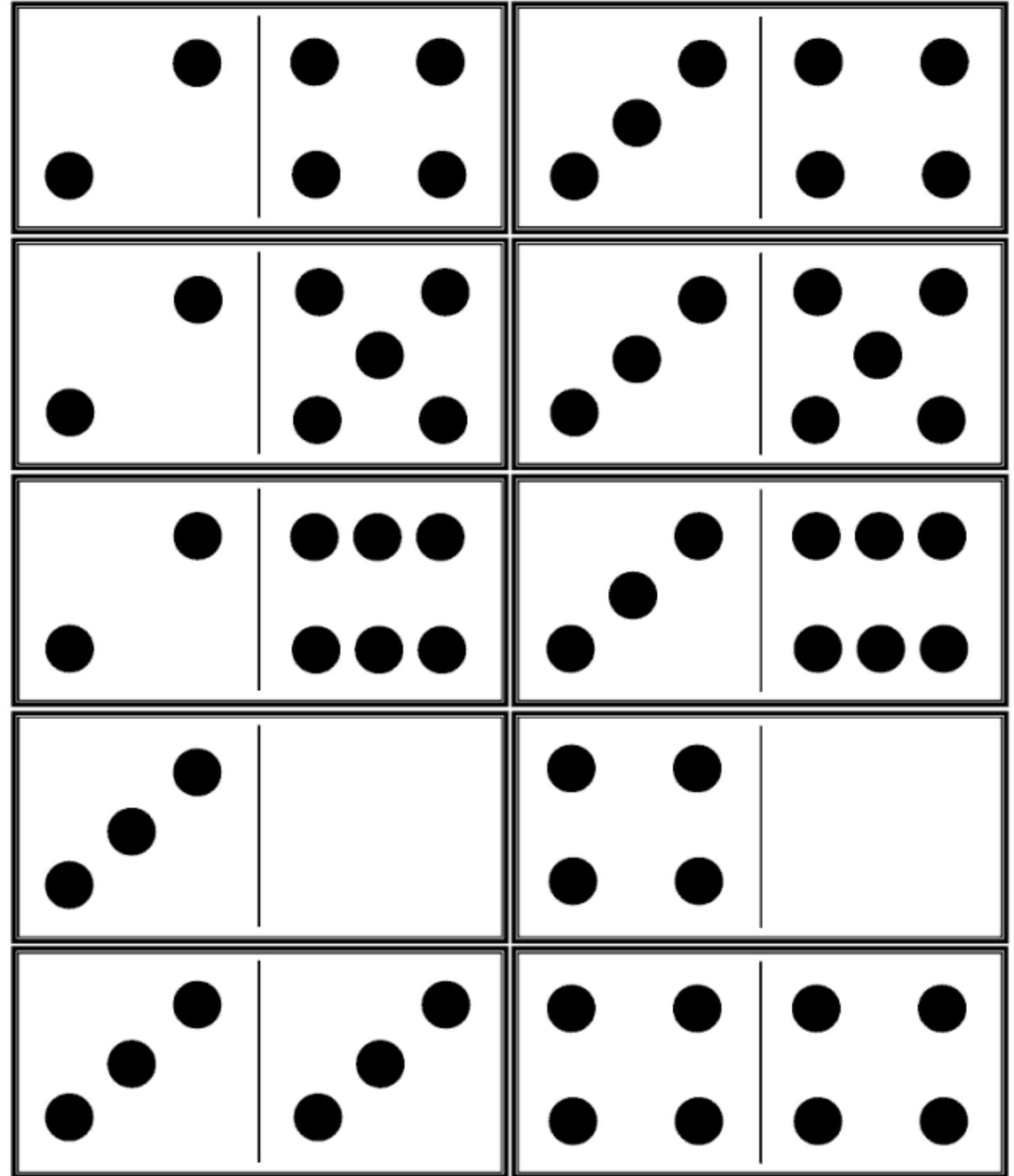
1. It's not $19+20$.
2. It's not $23+11$.
3. It's not $23+5$.

T The secret number is _____.

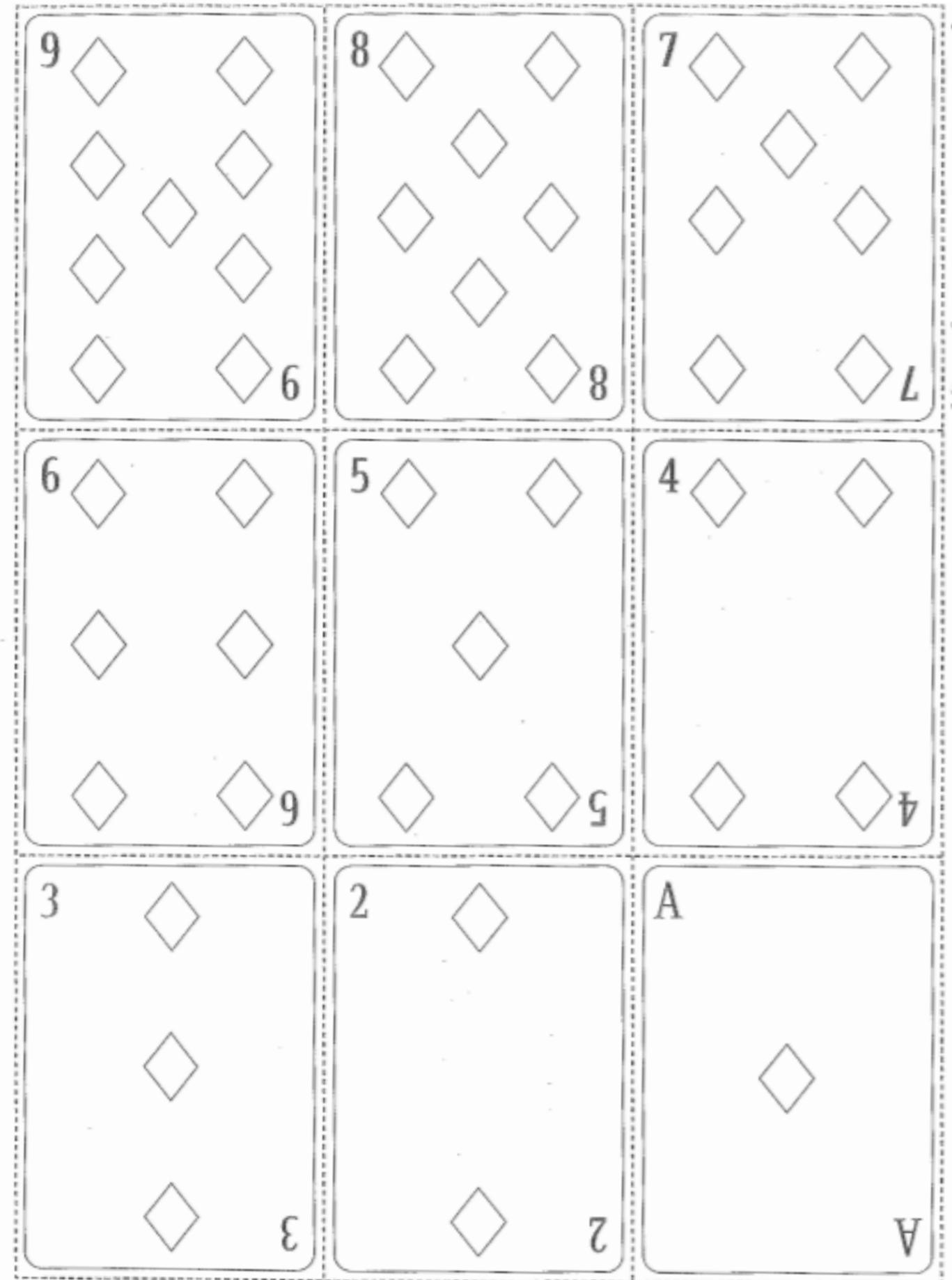
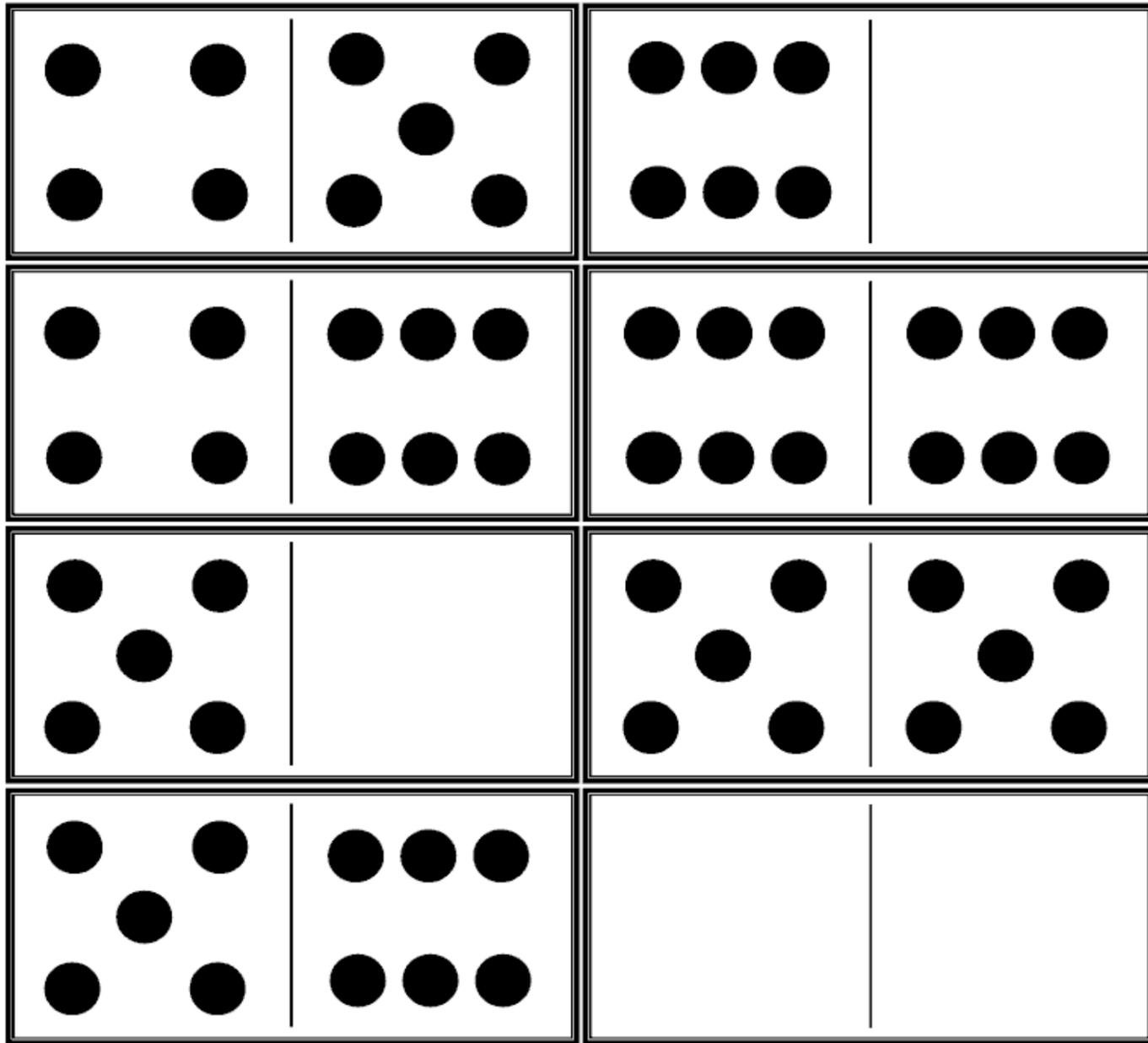
Dominoes - Dominos 1/3



Dominoes - Dominos 2/3



Dominoes - Dominos 3/3



Ago-Fix Card Game Math Cards 3-9 Scholastic Teaching Resources, page 43

