TEACHER'S CURRICULUM BOOK

MATH
MUSIC
MOTION

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Children under the age of 10 are wired to understand and process information more readily through sensory experiences, than through language alone. When they are able to connect a learning experience to their senses it becomes deeply rooted within them. Once a child has these experiences, they are able to draw upon the body and cognitive memory created when facing new and novel situations.

There are seven sensory systems. The five sense (hearing, sight, smell, taste, and touch) and two other sense that affect the way we respond to our environment (the vestibular and proprioceptive sense). These systems work together to provide sensory awareness, which is the ability to receive and differentiate sensory stimuli. At MMM, we use musical sensory devices, games, tangibles, materials, crafts, motion materials, and more to help children learn mathematical concepts while also developing and strengthening their sensory awareness.

Engaging in activities that activate and stimulate the sensory systems develops logic, imagination, physical, cognitive, emotional, and social skills. These experiences are crucial to a young child's brain development by refining their thresholds for processing different sensory information and supporting the brain in creating stronger connections. Here are some of the benefits in engaging in sensory learning:

- Adaptability
- Awareness
- Brain development
- Cognition
- Comfort
- Creativity
- Language development
- Motor skills
- Problem-solving
- Social & emotional development

VISUAL: SIGHT

Awareness of color, light level, contrast, motion, and other visual stimuli

Activities:
Bubble popping, looking for shapes in illustrations, color identification, color mixing, hidden item pictures, scavenger hunts, creating patterns, Simon says with movement clues, memory game, catching a ball or object

ORAL: MOUTH

The finests of the fine-motor skills and is supported by reflexes

Activities:
Blowing bubbles, playing a recorder, straw painting (blowing through a straw), blowing feathers (or other light objects), comparing chewy/crunchy foods

AUDITORY: SOUND

Controls the orientation of eyes, head, and body to sound

Activities:
Listening and differentiating between different sounds, playing musical instruments, listening to loud and soft or fast and slow music, repeating sound patterns (i.e., clapping patterns), listening to a simple rhyme and repeating

OLFACTORY: SMELL

Differentiates between different smells and builds strong memories

Activities:
Scented play dough, scented sensory bins, smelling bottles, Mr. Sketch markers, scratch-n-sniff stickers or watercolor paints

TACTILE: TOUCH

Detects pressure, texture, temperature, vibration, and pain

Activities:
Mystery boxes, using play dough to create shapes and numbers, finger painting, using textured materials, using droppers

VESTIBULAR: BALANCE

Sense of balance and body in space, detects direction and speed

Activities:
Jumping up and down, throwing a ball back and forth with a partner, passing an object over the opposite shoulder, lying down in a circle and passing an object around, jumping jacks, somersaults, twirling, hopscotch, dancing, and freezing

PROPRIOCEPTION: BODY AWARENESS

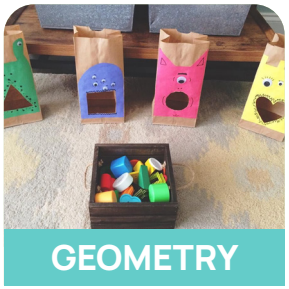
Sense of effort, determine body's position, control limbs, sense of force

Activities:
Balancing, jumping over objects, using instruments to shake or strike, tight squeezes while holding hands in a circle, pushing tangible objects from one space to another, building block towers, animal movements (i.e., elephant walks)

MATH DOMAINS:

Math Music Motion focuses on five mathematical domains. Each domain strives to build important, fundamental skills that will be utilized throughout the child's mathematical lifetime.

NUMBER


GEOMETRY

MEASUREMENT

DATA

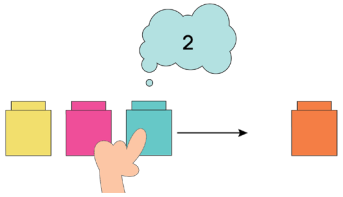
REASONING

NUMBER: (Counting, Quantities, Comparison, Computation, & Fractions)

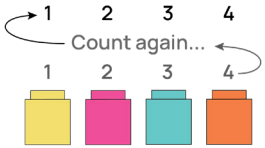
- **Counting:** Also called enumeration, this is the process of determining the total number of objects in a group. In order for a child to become a proficient counter, they must: (1) know the number word sequence; (2) be able to use only one number word for each objected counted; (3) understand that the last number word stated represents the quantity; (4) know that objects can be counted in any order, and (5) know that anything can be counted.

  There are several different strategies that can be used during counting.

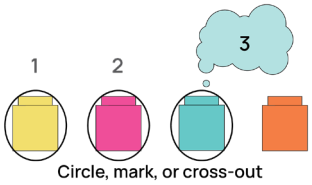
Count & Move



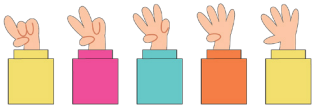
Double Check



Label It

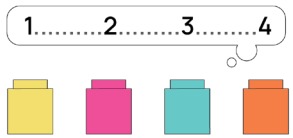


Finger Counting

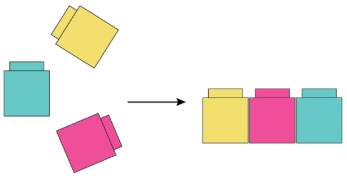


Touch & Count

Count Out Loud



Organize & Count

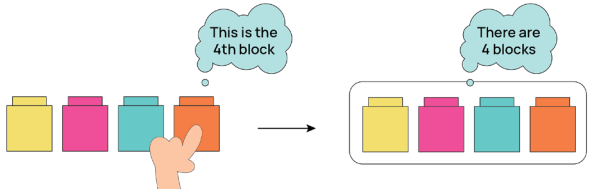


Quantities: Quantities tell us how much there is of something. They can be represented by concrete objects or symbolically by numbers (numerals). As children learn about quantities and their representations, they should have opportunities to: (1) count to find the quantity of a group of objects; (2) name small collections of quantities in various arrangements; and (3) represent the same quantities in different ways.

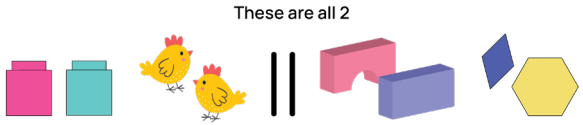
There are several different concepts that support the understanding of quantity.

Cardinality: The knowledge of how many things are in a set and the number name for that quantity.

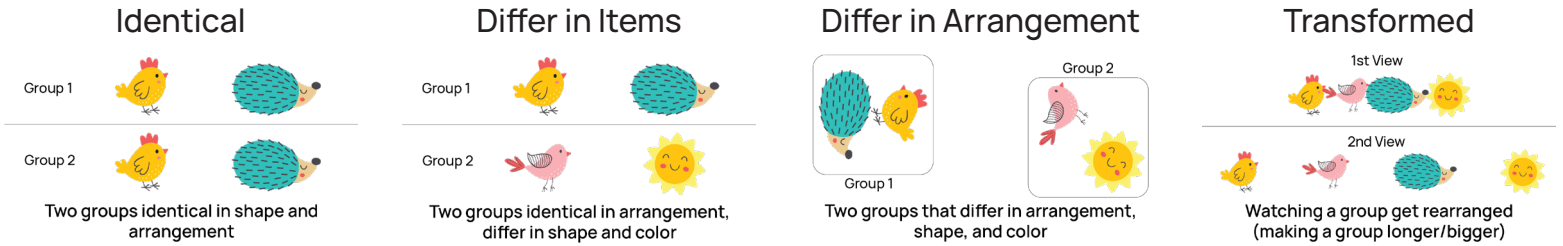
A correct count produces the cardinal value of a set, with the last number indicating the quantity (size). Students may understand the importance of the last number counted, without fully grasping the idea that number represents the entire group and not just the last item.



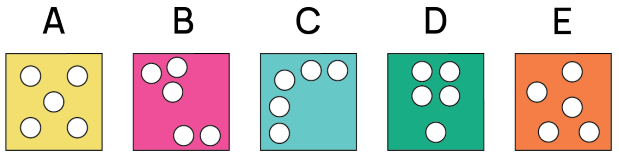
Abstraction: The understanding that a quantity can be represented by various types of collections (blocks, counters, toys, tally marks, pictures).



Conservation: The understanding that a quantity does not change if it is rearranged, hidden, or spread out. The idea of number "sameness" evolves through several stages:

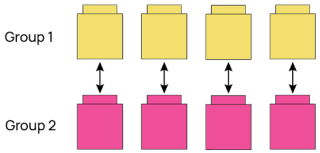


Subitization: The ability to instantly recognize a quantity. Subitizing is a foundational skill that builds the concepts of number units, arithmetic strategies, and estimation skills. When subitizing, the arrangement of the quantity will impact the level of difficulty. **Card A** is symmetrical and the easiest of the five. **Card B** presents sub-groups of two and three. **Card C** is linear and likely to prompt counting. **Card D** presents sub-groups of four and one. **Card E**'s arrangement is random, with no sub-grouping prompt. This is considered the most difficult one in the set.

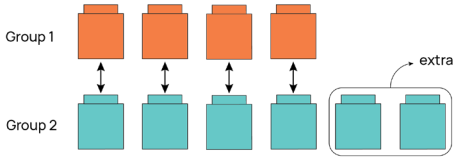


Comparison: The understanding that a quantity is an attribute that can be compared is a critical milestone in building number sense. As students begin comparing quantities, they must conclude that: (1) there are only two types of relationships - same (equality) or different (inequality); (2) two sets are equal when there is a one-to-one correspondence between their elements; (3) two sets differ when one or more elements remain after they have been put into a one-to-one correspondence as far as possible; and (4) the set with remaining elements is larger.

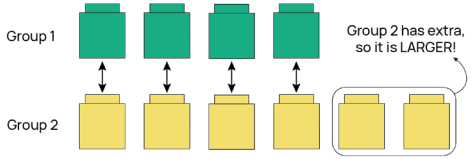
Equal / Same



Unequal / Different



Larger / Smaller



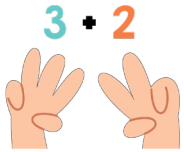
Computation: The process of finding an answer using mathematics. In Math Music Motion, the students will focus on the ideas of the addition (composition, joining, increasing) and subtraction (decomposition, separating, decreasing).

Addition: Addition can be thought of in different ways. It can be seen as the combining of two sets, increasing the size of a set, and forward movement on the number line. It can also be thought of as simply counting up (ascending order). But, no matter how it is thought of, a students must come to understand these concepts regarding addition: (1) the order in which sets are added does not matter; (2) adding zero changes nothing; (3) different combinations of numbers can make the same sum; and (4) addition and subtraction have an inverse relationship.

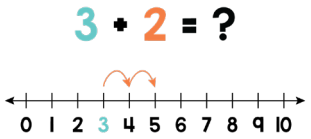
There are several different strategies that can be used when adding.

Draw a Picture

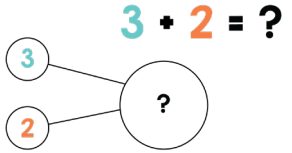
Fingers



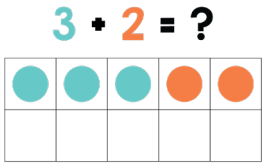
Number Line



Number Bonds

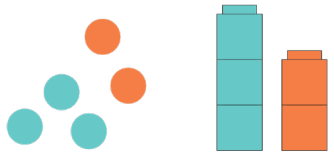


Ten Frame



Counting

Manipulatives

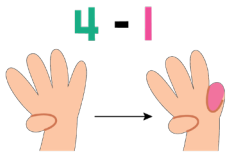


Subtraction: Subtraction can be thought of in different ways. It can be seen as breaking apart a set, decreasing the size of a set, and backward movement on the number line. It can also be thought of as simply counting down (descending order). But, no matter how it is thought of, a student must come to understand these concepts regarding subtraction: (1) the order of the terms in a subtraction problem matters; (2) subtracting zero changes nothing; (3) different combinations of numbers can make the same difference; and (4) addition and subtraction have an inverse relationship.

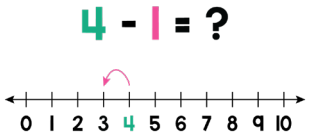
There are several different strategies that can be used when subtracting.

Draw a Picture

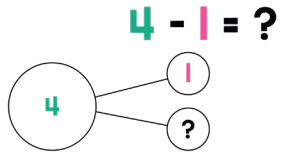
Fingers



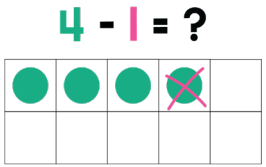
Number Line



Number Bonds

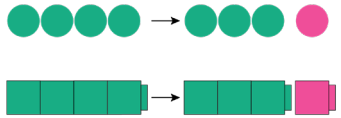


Ten Frame



Counting

Manipulatives



- **Fractions:** In Math Music Motion, the students will be provided with opportunities for them to build their fraction number sense and not necessary proficiencies in the symbols and advanced concepts of fractions (numerator and denominator).

  To set the foundation, students will experiment with the idea of fair shares and identifying a whole that has been partitioned into equal parts.

GEOMETRY: (Coins, Shapes, & Space)

- **Coins:** The first step in learning about US currency is learning to identify the most common US currency coins: pennies, nickels, dimes, and quarters. These identification skills should also include the back face of the coins in addition to their front face.

Penny:

- The only copper colored coin.
- Features Abraham Lincoln on the observe (front) Face.
- The edge is smooth, with no reeds.

Nickel:

- Larger than a penny and smaller than a quarter.
- Thicker than a dime and a penny.
- Features Thomas Jefferson (in different poses) on the observe (front) face.
- The edge is smooth, with no reeds.

Dime:

- Smallest coin in the US currency system.
- Features Franklin D. Roosevelt on the observe (front) face.
- The edge has 118 small ridges (reeds).

Quarter:

- Third largest coin in the US currency system. Although it is not the largest, it is the largest coin that students are likely to see with frequency (the half- and one-dollar coins are not commonly used).
- Features George Washington on the obverse (front) face.
- Has a large variety of reverse faces (bald eagle, bicentennial, states, etc.)
- The edge has 119 small ridges (reeds)

Shapes: Shapes are a basic way of identifying and organizing visual information. Shapes are symbols - a combination of lines to create a recognizable figure. We are all born with an innate ability to recognize and differentiate between color and shape. Even before we are aware of their names, we can tell that a square and a circle are different. So why is learning to identify and create shapes such an important part of early childhood development? What are the benefits of starting with shapes?

1. **Solidifying understandings of two-dimensional structures**: 2D structures are the first shapes that students will be introduced to.

2. **Developing early literacy skills:** Letters and numbers are complex shapes, the capacity to differentiate between them will aid students in their literacy abilities.

3. **Developing early drawing skills (fine-motor skills):** Composing shapes requires precisions and fine-tuned motor skills.

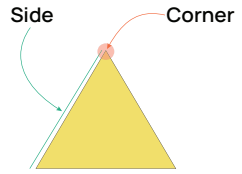
4. **Developing problem-solving skills**: Problem-solving requires the ability to observe and categorize information.

5. **Increased ability to focus on specific characteristics**: Seeing the differences and similarities between shapes will develop a strong sense of shape attributes - distinguishing one shape from another.

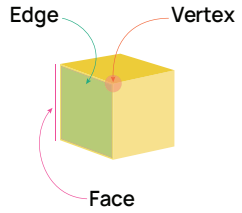
6. **Developing spatial perception**: Geometry requires a strong sense of spatial perception, exploring shapes will strengthen these thinking skills.

7. **Solidifying patterning skills**: Shape patterns are a foundational starting point, mastering easier patterns will lead to the ability to comprehend more complex patterns later.

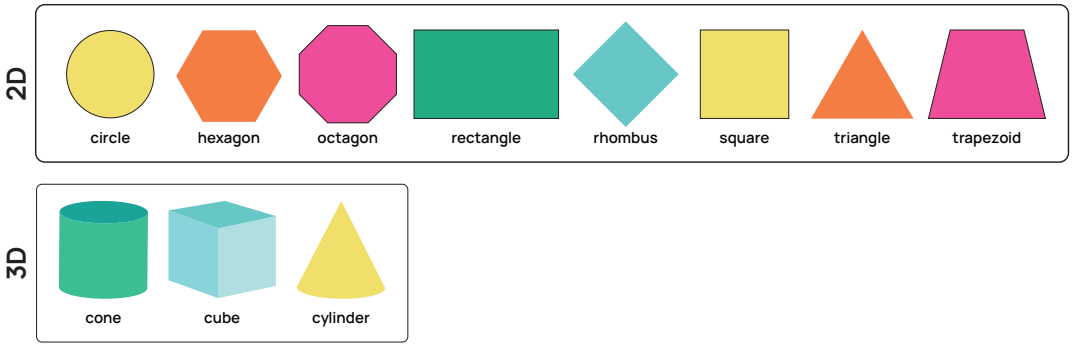
Attributes: In order to distinguish one shape from another, students must differentiate by paying attention to the little details of each shape (the shape's attributes). For two-dimensional shapes, students will use the number of sides and the number of corners to tell shapes apart and to describe shapes based on their properties.



For three-dimensional shapes, students will use the number of faces, edges, and vertices.



Examples: Exposure to varied and numerous examples is key to helping students analyze and identify two- and three-dimensional shapes. Throughout the course of Math Music Motion the students will become familiar with these shapes:



Mathematical Maestros in a Glance

NUMBER:

Counting

Understand that numbers have an order.

- Identify a correct count sequence to 10.
- Complete a number sequence in ascending order.
- Identify the 1st and 2nd object in a sequence.

Identify the number before and after any given number 0 to 10.

- Identify the number after any number 0 to 10.

Quantities

Understand the relationship between numbers and quantities.

- Count with 1:1 correspondence.
- Count up to 5 objects to determine how many.
- Recognize a quantity of 1 without counting.

Write and recognize the numbers 0 to 20.

- Recognize numerals 1 to 5.
- Write numerals 1 to 5.
- Use the proper stroke order.

Comparison

Compare sets with up to 5 similar objects to determine which is more, fewer, or same.

- Use more, fewer, or same to compare sets.
- Place items in 1-to-1 correspondence to compare sets.
- Compare sets of similar items (1-4) through observation (looking only).

Computation

Combine given quantities using counting strategies.

- Add within 3.
- Understand that addition makes a larger quantity.

Decompose given quantities using counting strategies.

- Subtract within 3.
- Understand that subtraction makes a smaller quantity.

Fractions

Visually distinguish equal parts of the same whole.

- Identify equal parts for halves.

DATA:

Count Information

Pose questions, gather information, and represent data using concrete objects, pictures, and simple graphs.

- Sort 5 objects into categories.
- Answer questions about how many, and which is more, less, or equal.

GEOMETRY:

Currency

Identify US currency coins.

- Identify the penny.

Space

Visualize spatial relationships between shapes and space.

- Complete color-coded pattern block puzzles.
- Flip, slide, and turn pieces, with some assistance, to fit into puzzle spaces.

Create three-dimensional structures based on two-dimensional diagrams.

- Use a two-dimensional diagram as a guide to build something three-dimensional, with some assistance.

Shape

Identify and compare basic geometric shapes, regardless of orientation or size.

- Identify basic shapes (circle, square) in a variety of colors, sizes, and orientations.
- Identify the real-life representations of circles and squares.
- Identify defining attributes of circles (no sides & corners) and squares (4 sides & corners).

Construct basic geometric shapes.

- Construct basic shapes (circles and squares).
- Draw shapes using sensory items.

MEASUREMENT:

Visual

Visually distinguish between items based on measurable criteria.

- Describe single objects using measurable attributes.
- Compare size (big/small).
- Compare length (short/tall).
- Compare weight (heavy/light).
- Compare capacity (empty/full).

REASONING:

Spatial

Follow a path.

- Follow a given path.

Practice directionality and relative position.

- Use directional and positional words to help describe 5 objects.
- Describe positions with one direction.

Puzzles

Use reasoning to solve logic puzzles.

- Solve simple logic puzzles with objects.

Sorting

Sort and group objects that belong together.

- Sort a group of objects once.
- Sort by color.

Pattern

Identify and complete a repeating pattern.

- Copy AB patterns.
- Work with patterns that have a single variable (one change).
- Work with patterns that have multiple variables.

Create simple patterns.

- Create an AB pattern using different shapes and colors.
- Create patterns that have a single variable (one change).
- Create patterns that have multiple variables (two changes).

Creative Calculators in a Glance

NUMBER:

Counting

Understand that numbers have an order.

- Identify a correct count sequence to 30.
- Complete a number sequence in ascending and descending order.
- Identify the 1st–3rd objects in a sequence.

Identify the number before and after any given number 0 to 10.

- Identify the number before or after any number 0 to 10.

Quantities

Understand the relationship between numbers and quantities.

- Count with 1:1 correspondence.
- Count up to 10 objects to determine how many.
- Recognize a quantity of 0-2 without counting.
- Understand that each successive number is one larger than the previous.
- Create a group of objects to match a number.

Write and recognize the numbers 0 to 20.

- Recognize numerals 1 to 10.
- Write numerals 0 to 10.
- Use the proper stroke order.

Comparison

Compare sets (1-5) of varying object types to determine which is more, less, or equal.

- Use more, less, or equal to compare sets.
- Match equal sets composed of dissimilar items (1-5).
- Count sets of similar items to compare.
- Determine the size and position of numbers (1-5) using spatial representations.
- Count sets of dissimilar items (1-5) in different arrangements to compare.

Computation

Combine given quantities using counting strategies.

- Add within 5.
- Understand that addition makes a larger quantity.
- Read and write addition equations.

Decompose given quantities using counting strategies.

- Subtract within 5.
- Understand that subtraction makes a smaller quantity.
- Read and write subtraction equations.

Fractions

Visually distinguish equal parts of the same whole.

- Identify equal parts for halves and fourths.

DATA:

Count Information

Pose questions, gather information, and represent data using concrete objects, pictures, and simple graphs.

- Sort 10 objects into categories.
- Arrange objects into a simple picture graph.
- Answer questions about how many, and which is more, less, or equal, and how many more one set has than another (limited to a difference of 3).

GEOMETRY:

Currency

Identify US currency coins.

- Identify the penny and dime.

Space

Visualize spatial relationships between shapes and space.

- Complete black-and-white pattern block or tangram puzzles that show how pieces fit together.
- Flip, slide, and turn pieces to fit into puzzle spaces.
- Create pictures and shapes using pattern blocks.

Create three-dimensional structures based on two-dimensional diagrams.

- Use a two-dimensional diagram as a guide to build something three-dimensional.

Shape

Identify and compare basic geometric shapes, regardless of orientation or size.

- Identify basic shapes (circle, square, triangle, rectangle) in a variety of colors, sizes, and orientations.
- Identify the real-life representations of circles, squares, triangles, and rectangles.
- Identify defining attributes (number of sides and corners) of circles, squares, triangles, and rectangles.

Construct basic geometric shapes.

- Construct basic shapes (circles, squares, triangles, and rectangles).
- Trace basic shapes with finger.

MEASUREMENT:

Visual

Visually distinguish between items based on measurable criteria.

- Compare two objects to determine which has "more or less" of an attribute.
- Order objects based on measurable criteria (i.e., smallest to biggest).

REASONING:

Spatial

Follow a path.

- Identify obstacles and avoid wrong pathways.

Practice directionality and relative position.

- Use directional and positional words to help describe 10 objects.
- Describe positions with one direction.

Puzzles

Use reasoning to solve logic puzzles.

- Solve simple logic puzzles with objects or pictures.

Sorting

Sort and group objects that belong together.

- Sort a group of objects in two different ways.
- Sort by color and shape.

Pattern

Identify and complete a repeating pattern.

- Copy and extend AAB, ABB, and AABB patterns.

- Work with patterns that have a single variable (one change).
- Work with patterns that have multiple variables.
- Identify the core of a repeating pattern.

Create simple patterns.

- Create an AAB, ABB, and AABB pattern using different shapes and colors.
- Create patterns that have a single variable (one change).
- Create patterns that have multiple variables.

Algebraic Architects in a Glance

NUMBER:

Counting

Understand that numbers have an order.

- Identify a correct count sequence to 50.
- Complete a number sequence in ascending and descending order, beginning from different starting points.
- Identify the 1st through 5th objects in a sequence.

Identify the number before and after any given number 0 to 10.

- Identify the number before, after, or in-between two numbers.

Quantities

Understand the relationship between numbers and quantities.

- Count with 1:1 correspondence.
- Count up to 20 objects to determine how many.
- Recognize a quantity of 0-5 without counting.
- Understand that each successive number in the count sequence is one larger than the previous number.
- Create a group of objects (up to 10) to match a number.

Write and recognize the numbers 0 to 20.

- Recognize numerals 0 to 20.
- Write numerals 0 to 20.
- Use the proper stroke order.

Comparison

Compare sets with up to 10 objects to determine which is more, less, or equal.

- Compare two numbers using conceptualize versions of the symbols <, >, =.
- Perceptually estimate a set's size.
- Determine the size and position of numbers (1-10) using spatial representations.
- Count sets of dissimilar items (1-10) in different arrangements to compare.

Computation

Combine given quantities using counting strategies.

- Add within 10.
- Understand that addition makes a larger quantity.
- Read and write addition equations.

Decompose given quantities using counting strategies.

- Subtract within 10.
- Understand that subtraction makes a smaller quantity.
- Read and write subtraction equations.

Fractions

Visually distinguish equal parts of the same whole.

- Identify equal parts for halves, thirds, and fourths.

DATA:

Count Information

Pose questions, gather information, and represent data using concrete objects, pictures, and simple graphs.

- Sort 20 objects into categories.
- Arrange objects into a simple picture graph.
- Represent data in a simple bar graph.
- Answer questions about how many, and which is more, less, or equal, and how many more one set has than another (limited to a difference of 5).

GEOMETRY:

Currency

Identify US currency coins.

- Identify the penny, nickel, dime, and quarter.

Space

Visualize spatial relationships between shapes and space.

- Complete pattern block or tangram puzzles that only show an outline of the picture.
- Flip, slide, and turn pieces to fit into puzzle spaces.
- Create pictures and shapes using pattern blocks or tangrams.

Create three-dimensional structures based on two-dimensional diagrams.

- Use a two-dimensional diagram as a guide to build something three-dimensional.
- Use directional language to describe how a three-dimensional structure is the same as a two-dimensional diagram.

Shape

Identify and compare basic geometric shapes, regardless of orientation or size.

- Identify basic shapes (trapezoid, octagon, hexagon, rhombus) in a variety of colors, sizes, and orientations.
- Identify defining attributes (number of sides and corners) of trapezoids, octagons, hexagons, and rhombi.
- Compare shapes with 4 sides and 4 corners (rectangles, squares, rhombi, and trapezoids).
- Identify three-dimensional shapes (cone, cube, and cylinder).
- Explore faces, edges, and vertices.
- Identify real-life representations of two- and three-dimensional shapes.

Construct basic geometric shapes.

- Construct shapes (trapezoids, octagons, hexagons, and rhombi).
- Construct three-dimensional shapes (cubes, cones, and cylinders).
- Trace shapes with finger or writing implement.

MEASUREMENT:

Visual

Visually distinguish between items based on measurable criteria.

- Use non-standard units to measure items.
- Compare items using measures taken with non-standard units.

REASONING:

Spatial

Follow a path.

- Look ahead down a given path to identify obstacles and avoid going the wrong way.
- Use a writing implement to trace a path.

Practice directionality and relative position.

- Use directional and positional words to help describe 12 objects.
- Describe positions with more than one direction.

Puzzles

Use reasoning to solve logic puzzles.

- Solve simple logic puzzles with objects, pictures, or writing.

Sorting

Sort and group objects that belong together.

- Sort objects in three or more different ways.
- Sort by color, shape, and size.
- Determine the property used for sorting.
- Identify the commonality among a group of objects.

Pattern

Identify and complete a repeating pattern.

- Copy, extend, and describe ABC and ABCD patterns.
- Work with patterns that have a single variable (one change).
- Work with patterns that have multiple variables.
- Identify the core of a repeating pattern.

Create simple patterns.

- Create an ABC and ABCD pattern using different shapes, colors, and sizes.
- Create patterns that have a single variable (one change).
- Create patterns that have multiple variables.
- Explain the rule used to create a repeating pattern.

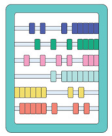
NUMBER:

Numbers are everywhere and can be taught to children as early as 12 months old. Typically, numbers are taught informally, while counting everyday objects. These activities lead to number sense in which students begin to understand, relate, and make connection with and between numbers.

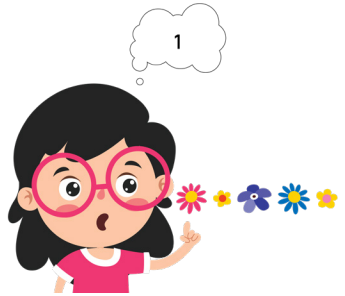
A student who has number sense is able to: (1) Identify numerals, (2) effectively and efficiently count numerals and quantities, (3) effectively and efficiently compare numerals and quantities, and (4) explain what numerals mean.

In Math Music Motion, students will work with the following number components.

1



One-to-One Correspondence: The ability to accurately count a quantity of items and assign a number to each object that is counted.

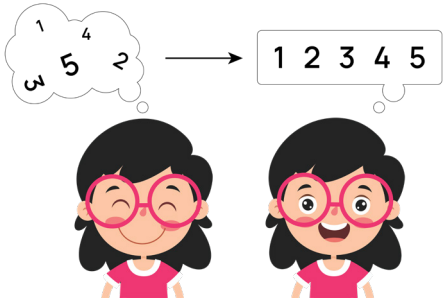


Student are ready for one-to-one correspondence (sometimes referred to as one touch, one count) when they can count independently up to 5. Being able to count with one-to-one correspondence takes time and practice. There are four factors that strongly impact accurate correspodence counting: (1) the amount of experince; (2) the size of the set; (3) the arrangement of obejcts; and (4) the effort used.

MM: Count up to 5 objects → CC: Count up to 10 objects → AA: Count up to 20 objects

2

Stable Order: The understanding that the number order stays the same, regardless of the starting point.



Students can start working with stable order once they are able to count independently. You can have them start from different numbers and count in ascending and descending order. Once students are able to identify numbers, students can work ordering the numerical representations of numbers.

MM: Count up to 5 objects → CC: Count up to 10 objects → AA: Count up to 20 objects

3

Number Recognition: The ability to accurately recognize and name numbers.

Students can begin working with number recognition as soon as they are able to say the names of numbers.

MM: Recognize numbers 1-5 → CC: Recognize numbers 1-10 → AA: Recognize numbers 1-20

4

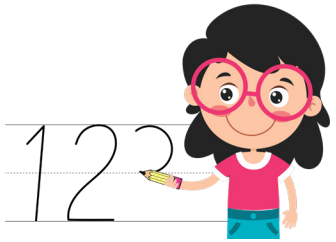
Comparing Quantities: The ability to compare sets of items and determine which has more, less, or equal.

Students can compare a set of items once they are able to count accurately with one-to-one correspondence.

MM: Compare similar within 5 → CC: Compare dissimilar within 5 → AA: Compare within 10

5

Writing Numbers: The ability to write numbers using proper formation.



Students can start writing numbers when they are able to hold a writing implement properly. Have students practice drawing wavy and straight lines, as well as following paths with their finger, crayon, and pencil.

MM: Write numbers 0-5 → CC: Write numbers 0-10 → AA: Write numbers 0-20

COUNTING SEQUENCE:

Understand that numbers have an order (limited to 0 through 50).

1. Identify a correct count sequence to 10.
2. Complete a number sequence in ascending order.
3. Identify the first and second object in a sequence.

Order, Ascending

Number Jumping:

Place numbers randomly on the ground. Move through the numbers in ascending order.

Numbered Bean Bags:

Walk around the room to find bean bags and put them in ascending order.

Lego Tower:

Connect Lego pieces in the correct sequence 1-5.

Musical Instruments:

Use musical instruments during rote counting to 10.

Planting Flowers:

Use numbered flowers and a tube to create a number sequence garden.

Identify the number before and after any given number from 0 to 10.

1. Identify the number after any number 0 to 10.

After

10-Frame Bears:

Use 10-frames, bears, and dice to match the number rolled. Then, add one more bear to name the next consecutive number.

Number Line:

Stand on a number line. By moving one step forward, identify what number comes next.

Number After Circle:

Sit in a circle and listen to the number said by the person before. Then, say the next consecutive number.

Number After Puzzle:

Put together two number puzzle pieces to make a set of consecutive numbers.

1, 2, Buckle My Shoe:

Listen to the first number and then say the number that comes after in the rhyme.

How Do Dinosaurs Count to Ten?
by Jane Yolan

Counting on Frank
by Rod Clement

How Many Bugs in a Box?
by David Carter

Ten Little Ladybugs
by Melanie Gerth

On the Launch Pad
by Michael Dahl, Derrick Alderman, & Denise Shea

One Duck Stuck
by Phyllis Root & Jane Chapman

QUANTITIES:

Understand the relationship between numbers and quantities.

1. Count with 1:1 correspondence.
2. Count up to 5 objects to determine how many.
3. Recognize a quantity of 1 without counting.

Count, Numbers, One-to-One Correspondence, Quantity

Counting Bears:

Use 1:1 correspondence to count how many bears are given. Arrange bears in a line as a useful strategy when counting.

Stack and Count:

Stack the same colored discs on the right peg to make the quantity and number match.

Fruit Stand:

Spin a number and count out the corresponding number of fruit using tweezers.

Musical Instruments:

Listen to the number of beats (0-10) on an instrument and say how many beats there were in total.

Simon Says:

Play a game of Simon Says using quantities of movements (Simon says, clap 3 times).

Write and recognize the numbers 0 to 20.

1. Recognize numbers 1-5.
2. Write numerals 1-5.
3. Use the proper stroke order.

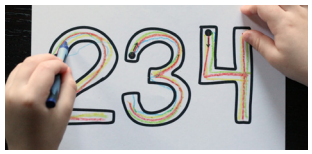
Number, Numeral, One, Two, Three, Four, Five, Top, Down Around, Across

Building Numbers:

Create numbers with pompoms or other materials.

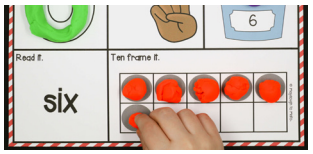
Race Car Track:

Drive a car along the road to trace a number.



Rainbow Writing:

Trace numbers in different colors while saying its name.



Play Dough Numbers:

Create play dough numbers and a matching quantity of balls.

Follow the Path:

Move a ball along a path to practice writing numbers.

Potato Joe
by Keith Baker

123
by Sarah Powell

Counting on Frank
by Rod Clement

Ten Little Ladybugs
by Melanie Gerth

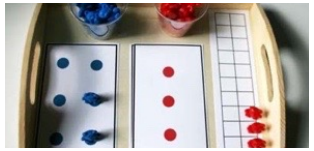
Ten Little Monkeys Jumping on the Bed
by Eileen Christelow

COMPARISONS:

Compare sets with up to 5 similar objects to determine which is more, fewer, or same.

1. Use more, fewer, or same to compare sets.
2. Place items in one-to-one correspondence to compare sets.
3. Compare sets of similar items (1-4) through observation (looking only).

More, Fewer, Same



Bear to Compare:

Place bears on matching dots to count each color. Use two columns to compare which is more and fewer.

Roll and Compare:

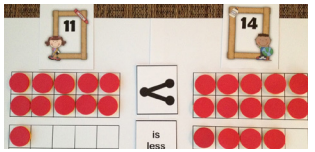
Roll dice and create a block tower to match the number. Determine which s more, fewer, or if they are the same.

More or Less:

Two students choose a number from 1 to 5 and play an instrument that many times. Determine which is more.

Clap Your Name:

Clap the syllables in student names. Determine which names have more or fewer claps.



5 Frame More or Less:

Grab two 5-frame number cards. Compare the number of dots and say which is more or fewer.

Spaghetti and Meatballs for All!
by Marilyn Burns

Counting Crocodiles
by Judy Sierra

FRACTIONS:

Visually distinguish equal parts of the same whole.

1. Identify two equal parts as halves.

Equal, Half, Fair, Share, Parts

Equal Parts:

Use cookie cutters to create play dough shapes. Then, cut them into two equal parts.

Post-It Note Halves:

Using different shaped post-it notes, cut each shape into two equal parts.

Halves Puzzles:

Complete a shape by matching two equal halves.

Parts Sort:

Sort shapes with a line cutting them into two pieces into the categories of equal or unequal parts.

Fair Share Fruits:

Determine if fruits are but into equal parts. If they are, share and eat them.

Pizza Counting Book
by Christina Dobson

Give Me Half
by Stuart J. Murphy

COMPUTATION:

Combine given quantities by using counting strategies.

1. Add within 3.
2. Understand that addition makes a larger quantity.

Combine, Put Together, Add

Addition Machine:

Put one quantity of objects in the first cup and another quantity in the second cup. Then, count how many objects there are altogether in the bottom bin to find the total.

Addition Towers:

Roll dice and build two towers to match the numbers on each die. Combine both towers to find the total.

Adding Students:

Use students in the class to represent simple addition problems. Count how many students are standing at the front of the class to find the total.

Musical Bells:

Ring two different bells a unique number of times. Count the total number of times that both bells rung.

Fruit Addition:

Use fruit counters to represent addition problems.

Decompose given quantities by using counting strategies.

1. Subtract within 3.
2. Understand that addition makes a smaller quantity.

Take Away

Subtraction Smash:

Make play dough balls to represent the first number in a subtraction problem. Then, smash the second number of balls. Count to see how many balls are not smashed.

Bear Cave Subtraction:

Count the number of bears to start with. Then, place some of the bears to hibernate in the cave. Count how many are still left outside the cave.

Lego Subtract:

Start with 25 Lego. Roll a die to move through the game board, taking away each amount landed on. The students with the fewest Lego pieces is the winner.

Subtracting Students:

Use students in the class to represent simple subtraction problems. Count how many students are standing at the front of the class to find the difference.

5 Little Speckled Frogs:

Sing and act out the movements of the song.

What's New at the Zoo?
by Suzanne Buckingham Slade

How Many Blue Birds Flew Away?
by Paul Giganti

Ten Sly Piranhas: A Counting Story in Reverse
by William Wise

Quack and Count
by Keith Baker

Animals on Board
by Stuart J. Murphy

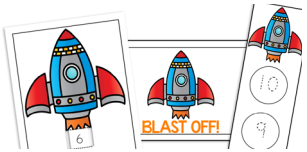
A Remainder of One
by Elenor Pinczes & Bonnie MacKain

COUNTING SEQUENCE:

Understand that numbers have an order (limited to 0 through 50).

1. Identify a correct count sequence to 30.
2. Complete a number sequence in ascending and descending order.
3. Identify the first through third objects in a sequence.

Order, Ascending, Descending



Rocket Count Down:

Start with the highest number in the view window and slide the rocket down, counting in descending order all the way to zero -and lift off!

Hopscotch:

Move through the hopscotch while rote counting with each hop.

Zoom, Zoom, Zoom! We're Going to the Moon:

Sing the zoom song. Dance and count backwards from 10 to 1.

Magnetic Numbers:

Determine if a given sequence composed of magnetic numbers is correct or incorrect.

Picture Puzzle:

Arrange numbered puzzle pieces in the correct sequence to create a picture.

Identify the number before and after any given number from 0 to 10.

1. Identify the number before or after any number 0 to 10.

Before, After

Hundreds Chart:

Find a number and mark it with a colored square on a hundreds chart. State what number comes before and after that number.

Roll and Write:

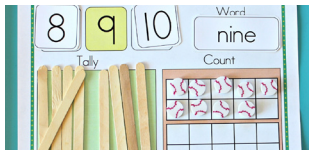
Roll a die. Write the number that matches what was rolled. State what number comes before and after it.

Before & After Claps:

Work with a partner Begin by stating before or after and clap a number. Your partner then claps the number before or after (depending on what was selected at the beginning).

Before & After Puzzle:

Connect three number puzzle pieces so they are in the correct order. Use knowledge of what number comes before and after.



10-Frame:

Represent a number on a 10-frame. Write the number in the center space. Then, write the number that comes before and after that number (use counters to help if necessary).

The Very Hungry Caterpillar
by Eric Carle

Quack and Count
by Keith Baker

One Hundred Hungry Ants
by Elinor Pinczes

Doggies
by Sandra Boynton

My Granny Went to the Market
by Stella Blackstone

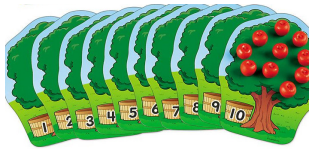
Stack the Cats
by Susie Ghahremani

QUANTITIES:

Understand the relationship between numbers and quantities.

1. Count with 1:1 correspondence.
2. Understand that each successive number in the counting sequence in one larger than the previous.
3. Count up to 10 objects to determine how many.
4. Recognize the quantities 0-2 without having to count.
5. Create a group of objects (no more than 4) to match a number.

Count, Numbers, One-to-One Correspondence, Quantity



Counting Boxes:

Count and match counters to numbered mats.

Counting Caterpillars:

Create caterpillars to match given numbers.

Number Match:

Match the number on the cup to the quantity of circles in each circle.

Bean Bag Toss:

Toss a bean bag at the target. Count objects to make a matching quantity to that number.

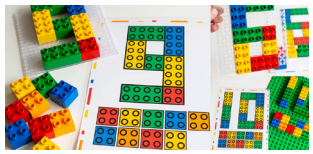
Rhythm Sticks:

Maintain a steady rhythm by counting while tapping sticks to the melody of a song.

Write and recognize the numbers 0 to 20.

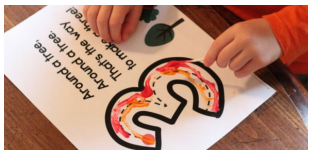
1. Recognize numbers 0-10.
2. Write numerals 0-10.
3. Use the proper stroke order.

Number, Numeral, Zero, One, Two, Three, Four, Five, Six, Seven, Eight, Nine, Ten, Top, Down Around, Across



Lego Numbers:

Use Lego (or cubes) to build numerals.



Number Rhymes:

Practice forming numbers while saying the number rhyme.

Race to Trace:

Roll a die and trace the numeral that was rolled.

Sand Writing:

Use fingers to write numerals up to 10 in the sand.

Crocodile Hop:

Hop from one side to the other identifying the number, shape, or color of each landing spot (before jumping again).

Chicka Chicka 123
by Bill Martin Jr.

Ten, Nine, Eight
by Molly Bang

Click, Clack, Splish, Splash
by Doreen Cronin

1 is One
by Tasha Tudor

Zero to Hero
by Joan Holub and Tom Litchtenheld

COMPARISONS:

Compare sets (1-5) of varying object types to determine which is more, less, or equal.

1. Use more, less, or equal to compare sets.
2. Match equal sets composed of disimilar items (1-5).
3. Count sets of similar items to compare.
4. Determine the size and position of numbers (1-5) using spatial representations (number lines, stairs).
5. Count sets of dissimilar items (1-5) in different arrangements to compare.

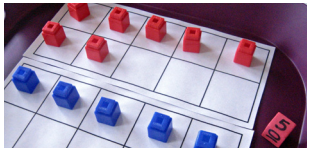
More, Less, Equal, Greater Than, Less Than

Towering Numbers:

Roll dice and build two towers, to match the amount on each die. Compare towers to see which is greater or less.

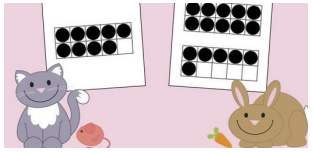
Grab, Count, Compare:

Grad two handfuls of objects and compare each group to see which is greater or less.



Roll and Compare:

Roll dice and represent each die on a 10-frame. State which has more.



10-Frame War:

Play war with 10-frame cards. The greater amount keeps both cards.

Equal Beats:

Roll a number (0-10). Play instrument that many times. Class listens and plays their instruments the same amount of times.

Math Fables: Lessons that Count
by Greg Tan

Place Value
by David Adler

FRACTIONS:

Visually distinguish equal parts of the same whole.

1. Identify two equal parts as halves and fourths.

Equal, Half, Fourth, Fair, Share, Parts

Equal & Unequal Parts:

Sort partitioned shapes into categories of equal or unequal parts.

Equal & Unequal Cuts:

Cut paper shapes to create equal and unequal shares of each shape.

Snack Fractions:

Snacks are cut into halves or fourths. Ask for the fraction of the snack that you want.

Fraction Dance:

Fold a piece of paper into fractions (halves or fourths) and dance on it.

Paper Plate Fractions:

Cut paper plates into two or four equal parts to create halves and fourths.

Wholey Cow: Fractions Are Fun
by Taryn Souder

Fraction Action
by Loreen Leedy

COMPUTATION:

Combine given quantities by using counting strategies.

1. Add within 5.
2. Understand that addition makes a larger quantity.
3. Read and write addition equations.

Combine, Put Together, Add, +, Total

Addition Plate:

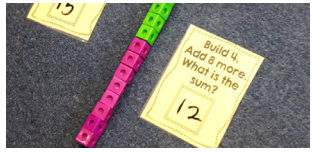
Use a partitioned plate to show two different quantities. Use the larger partition to combine the two quantities and find the total.

Adding Movements:

Sit in a circle. Take turns adding one additional movement to a sequence. Each time a movement is added, the class performs the entire sequence of moves.

Goldfish Addition:

Use two different colored goldfish to add to the fishbowl. Write an equation that represents the total number of fish.



Adding More:

Build a tower of cubes by following the prompts. Count to find the sum of the tower and write the answer in the box.

Domino Parking Lot:

Count the dots on domino pieces. Place the domino "cars" in the parking space that matches its total.

Decompose given quantities by using counting strategies.

1. Subtract within 5.
2. Understand that subtraction makes a smaller quantity.
3. Read and write subtraction equations.

Take Away, Subtract, -

Shark Subtraction:

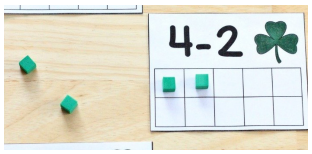
Use goldfish and a shark to answer subtraction problems.

Bead Subtraction:

Use a pipe cleaner with pre-strung numbers of beads to practice taking away different amounts.

Disappearing Train:

Roll a die with these options: -3, -2, -1, 0, +1, and +2. Add or remove cars from trains according to what is rolled. First person to get rid of all train cars wins.



Subtracting Cubes:

Use a 10-frame to represent the first number in a subtraction problem. Then, take away the second number of cubes. How much is left?

5 Little Monkeys:

Sing and act out the movements of the song.

The Mission of Addition
by Brian Cleary

One Grain of Rice
by Demi

The Action of Subtraction
by Brian Cleary

Domino Addition
by Lynette Long

A Remainder of One
by Elinor J. Pinczes

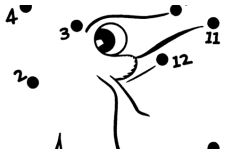
Elevator Magic
by Stuart J. Murphy

COUNTING SEQUENCE:

Understand that numbers have an order (limited to 0 through 50).

1. Identify a correct count sequence to 50.
2. Complete a number sequence in ascending and descending order, beginning from different starting points.
3. Identify the first through fifth objects in a sequence.

Order, Ascending, Descending, Count On

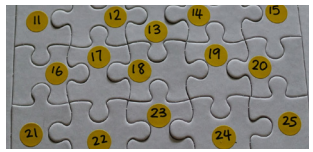


Dot to Dot:

Draw lines to connect numbers in the correct number sequence to make a picture.

Number Toss:

Pass an object in a circle. When holding the object, say the next number in the sequence in ascending or descending order.

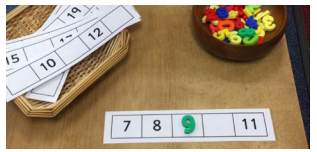


Number Puzzle:

Attach puzzles pieces that fit together according to a number sequence to complete the puzzle.

Hot Potato:

Pass a ball, saying the correct consecutive number, while music is playing. When the music stops, whoever has the ball is out.



Missing Number:

Identify and write the missing number from a sequence.

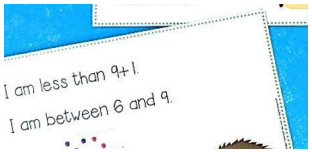
Identify the number before and after any given number from 0 to 10.

1. Identify the number before, after, or in-between two numbers.

Before, After

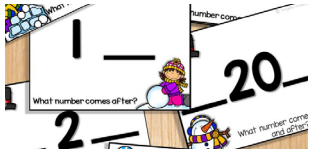
Speed:

Play a game of speed with either quantity or number cards.



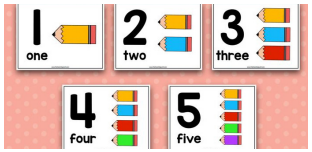
Riddles:

Work with a partner. Think of a number and give "clues" about what that number is (using the terms before, after, and in-between) to get your partner to guess the number.



Before, Between, After:

On a card, fill in the missing numbers that come in-between, before, and after.



Card Line Up:

Work in a group of 3. Each person gets a card. Figure out which one is before, between and after. Stand in a line that reflects the correct order.

Triangle Taps:

Work in pairs. One person use the triangle to tap a number. Partners name the number that comes before or after that quantity.

One is a Snail, Ten is a Crab
by April Pulley Sayre & Jeff Sayre

One
by Kathryn Otoshi

Zin! Zin! Zin! A Violin
by Lloyd Moss

Stack the Cats
by Susie Ghahremani

Pete the Cat and His Four Groovy Buttons
by Eric Litwin

Count the Monkeys
by Mac Barnett & Kevin Cornell

QUANTITIES:

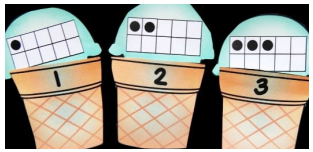
Understand the relationship between numbers and quantities.

1. Count with 1:1 correspondence.
2. Understand that each successive number in a counting sequence in one larger than the previous number.
3. Count up to 20 objects to determine how many.
4. Recognize the quantities 0-5 without having to count.
5. Create a group of objects (up to 10) to match a number.

Count, Numbers, One-to-One Correspondence, Successive, Quantity

Count and Create:

Count 20 Lego pieces. Then, build something using all 20 pieces.



Count and Match:

Count the dots shown in the ten frame and match it with the correct number.

Post-It Match:

Place the number post-it over the matching quantity of dots up to 20.

Roll and Cover:

Roll a die and cover the quantity that matches the number rolled.

Slide:

With a partner, play a game of slide, increasing the number by one in each round.

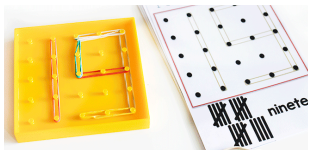
Write and recognize the numbers 0 to 20.

1. Recognize numbers 0-20.
2. Write numerals 0-20.
3. Use the proper stroke order.

Number, Numeral, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, Top, Down Around, Across

Whiteboard Writing:

Practice writing numbers on a whiteboard.



Geoboard Numbers:

Make numbers on geoboards with rubber bands.

Number Bingo:

Play number bingo to practice number recognition.

Musical Numbers:

Walk around while music is playing. When the music stops, find a number to stand on. Teacher calls out a random number, whomever is standing on that number is out.

Guess the Number:

Take turns writing a number on your partner's back. Guess what number is written.

One is a Snail, Ten is a Crab
by April Pulley Sayre & Jeff Sayre

Infinity and Me
by Kate Hosford

Click, Clack, Splish, Splash
by Doreen Cronin

Fish Eyes
by Lois Ehlert

Billions of Bricks: A Counting Book About Building
by Kurt Cyrus

COMPARISONS:

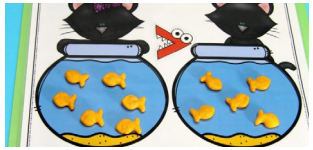
Compare sets with up to 10 objects to determine which is more, less, or equal.

1. Compare two numbers using conceptualized versions of the symbols <, >, = (Alligreater eats the bigger amount).
2. Perceptually estimate a set's size, naming a small set with a small number (1-5) and a large set with a large number (over 20).
3. Determine the size and position of numbers (1-10) using spatial representations (number lines, stairs).
4. Count sets of dissimilar items (1-10) in different arrangements to compare.

More, Less, Equal (=), Greater Than (>), Less Than (<)

More Scoops:

Put a handful of pompoms on the top of each cone. Place the appropriate symbol that compares the quantities.

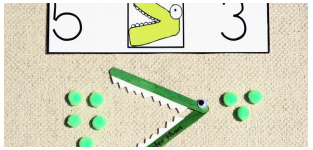


Goldfish Compare:

Use goldfish to represent the numbers in the fishbowl. Place the appropriate symbol that compares the quantities.

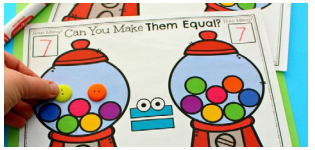
Yard Trash:

Two teams throw "trash" to the other side while music plays. When the music stops, count how much trash is on each side. Less trash wins!



Number Gators:

Sing the song. Then, identify the appropriate symbol that correctly compares two quantities.



Making Equal:

Add "gumballs" to two machines with unequal amounts so that they have matching quantities.

Monster Knows More Than, Less Than
by Lori Capote

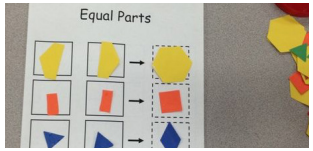
Equal Shmequal
by Virginia Kroll

FRACTIONS:

Visually distinguish equal parts of the same whole.

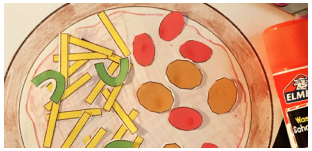
1. Identify two equal parts as halves, thirds, and fourths.

Equal, Half, Third, Fourth, Fair, Share, Parts



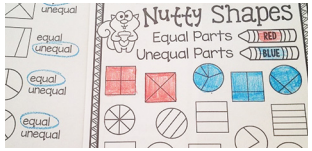
Block Equal Parts:

Cut pattern blocks into two equal parts to show two halves make a whole.



Fraction Pizza:

Decorate a paper pizza with toppings to show different fractions.



Color Equal Parts:

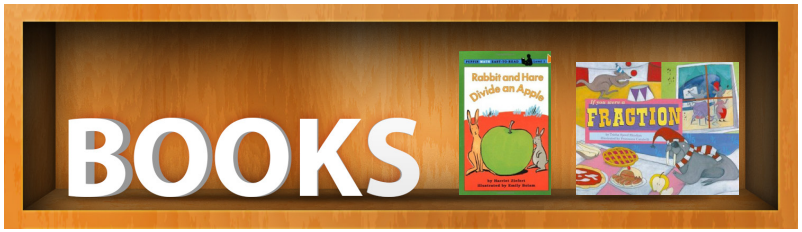
Use color to identify how shapes are divided into equal or unequal parts.

Block Fractions:

Record the different ways to create hexagons using pattern blocks, coloring equal and unequal sized pieces.

Pie Fractions:

Make a pie with playdoh and then cut it into two three, or four equal parts to create halves, thirds, or fourths.



Rabbit and Hare Divide an Apple
by Harriet Ziefert

If You Were a Fraction
by Trisha Speed Shaskan

COMPUTATION:

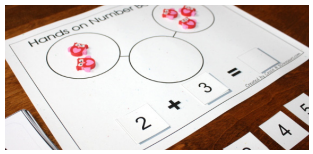
Combine given quantities by using counting strategies.

1. Add within 10.
2. Understand that addition makes a larger quantity.
3. Read and write addition equations.

Combine, Put Together, Add, +, Total, Sum, Plus

Ladybug Addition:

Use paint to make dots on each side of the ladybug to match the numbers in the equation. Count how many dots there are in all, and write the sum.



Number Bond Addition:

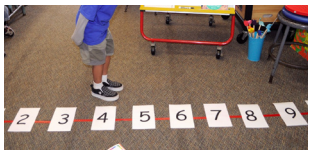
Place given numbers of counters in each of the top circles. Combine them in the lower circle. Write the resulting addition equation.

Domino Addition:

Pick a domino. Use the dots on the left as the first addend. Use the dots on the left for the second addend. Count all the dots to find the total.

Add 'Em Up Song:

Sing along to the song and practice adding with fingers.



Number Line Addition:

Use a giant number line to practice adding. While standing on a number, hop forward two times. What number are you on now? That's the sum.

Decompose given quantities by using counting strategies.

1. Subtract within 10.
2. Understand that subtraction makes a smaller quantity.
3. Read and write subtraction equations.

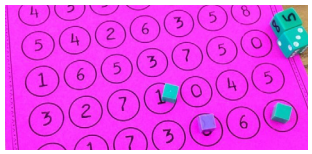
Take Away, Subtract, -, Minus, Difference

Bond Subtraction:

Count objects to match the number in the top circle. Use those objects to put matching amounts in the bottom left space. Place the remaining objects in the bottom right space. Write the resulting subtraction equation.

Subtraction Bowling:

Set up bowling pins. Roll a ball to knock down as many as you can. Write the subtraction equal that matches your roll.



Connect Four:

Roll dice and subtract the numbers to find the difference. Mark the matching dot on your board. First player to get four in a row, wins!

Plus, Minus Game:

Roll a die with +1, +2, +3, 0, -1, and -2 on it. Move counters along the track according to what is rolled. The first to get across the finish line wins.

One Penny Less Blues:

Sing and act out the movements of the song using pennies.

The Mission of Addition
by Brian Cleary

If You Were a Plus Sign
by Trisha Speed Shaskan

Arithmechicks Add Up
by Anne Marie Stephens

Subtraction Action
by Loreen Leedy

Monster Musical Chairs
by Stuart J. Murphy

Shark Swimathon
by Stuart J. Murphy

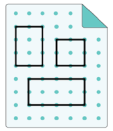
GEOMETRY:

The world around us is made up of a mixture of geometric shapes and space. At a very young age students begin to develop their understanding about the space around them. Through analysis, creation, and composition of shapes, students build their spatial awareness.

A student with spatial awareness understands where objects are in relation to others and knows how to respond when objects change position.

In Math Music Motion, students will work with the following geometry components.

1

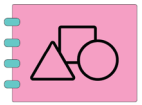


Shape Identification: The ability to recognize different shapes regardless of its size or orientation.

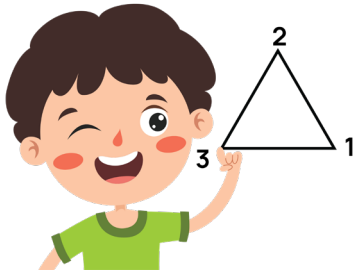
Student are typically ready to learn to identify shapes around 2 years of age. This will take place when students start to notice the shapes around them in everyday life.

MM: Square and circle → CC: Square, circle, triangle, rectangle → AA: Trapezoid, octagon, hexagon, rhombus

2



Shape Attributes: The ability to identify the attributes (corners, sides) of different shapes.



Students can start working with shape attributes when they have a clear understanding of what a corner and side are. Students should also be able to count before being introduced to shape attributes.

MM: Sides and corners of squares and circles → CC: Sides and corners of squares, circles, triangles, and rectangles → AA: Sides and corners of hexagons, octagons, trapezoids, and rhombi

3

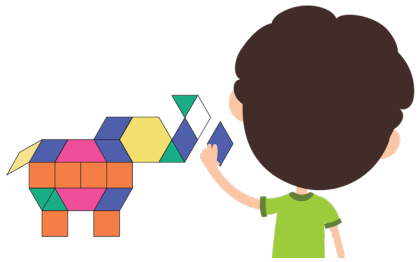
Shape Construction: The ability to trace, draw, and construct different shapes.

Students can start tracing and drawing shapes when they have developed their fine-motor skills of holding a writing implement. Students can construct shapes using a variety of materials when they are able to recognize the difference amongst shapes and know what each shape looks like.

MM: Construct squares and circles → CC: Construct squares, circles, triangles, and rectangles → AA: Construct hexagons, octagons, trapezoids, and rhombi

4

Space: The ability to understand the position of items.



Students can begin working with space and spatial awareness as soon as they are able to see the position of different items (the puzzle piece can fit here). The level of complexity when working with space increases overtime, as students demonstrate their ability to flip, turn, and rotate shapes.

MM: Color coded puzzles → CC: Black and white puzzles → AA: Outlined puzzles

SHAPES:

Identify and compare basic geometric shapes, regardless of orientation or size.

1. Identify basic shapes (circle, square).
2. Identify real-life representations of circles and squares.
3. Identify features of circles and squares (sides and corners).

Circle, Square, Same, Different, Side, Corner

Shape Sort:

Sort objects by shape (circle and square), placing them in matching shape areas created on the floor with tape.

Shape Jump:

Jump to a new shape that matches what the teacher calls out (circles and squares).

Sensory Box:

Place hands into the sensory box and feel the shape. Identify if its a circle or square without being able to see it.

Pass the Circle:

Play the song by Kimbo Children's Music and pass the circle following the lyrics in the song.

Real-Life Shape Sort:

Sort items or pictures of objects from real-life into two categories, circles or squares.

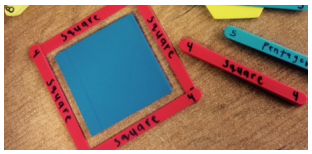
Construct basic geometric shapes.

1. Construct basic shapes (circles and squares).
2. Draw shapes using sensory items.

Circle, Square

Cereal Circle:

Place circular cereal on a circle outline made of glue.

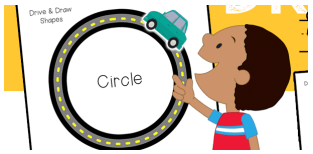


Popsicle Stick Square:

Use popsicle sticks to make a square.

Ball Roll:

Roll a ball along the curved and straight lines of a shape (circles and squares).



Road Shapes:

Drive a toy car along a road that makes the outline of a shape (circles and squares).

The Shape Song:

Play the first two verses of the song by the Kiboomers and draw the shape in the air.

- Brown Rabbit's Shape Book *by Alan Baker*
- Touch and Feel Shapes *by Dorling Kindersley*
- Which One Doesn't Belong *by Christopher Danielson*
- Shapes are Everywhere *by Charles Ghigna*
- Circles, Triangles, and Squares *by Tana Hoban*

SPACE:

Visualize spatial relationships between shapes and space.

1. Complete color-coded pattern block puzzles.
2. Flip, slide, and turn pieces, with some assistance, to fit into puzzle spaces.

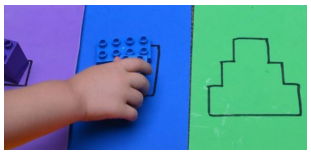
Pattern Block, Puzzle, Flip, Slide, Turn, Match

Shape Sorter Cube:

Flip, slide, and turn block shapes to fit into cut outs.

Wooden Puzzles:

Flip, slide, and turn pieces to fit in the correct spaces and solve the puzzle.

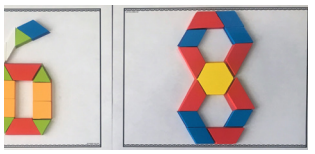


Lego Puzzles:

Fit Lego pieces into defined spaces matching color, size, and shape.

Pattern Block Puzzles:

Copy the picture on the card to make an identical object using pattern blocks.



Number Puzzles:

Copy the picture on the card to make an identical object using pattern blocks.

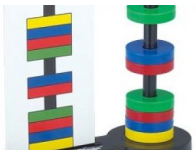
Construct three-dimensional structures based on two-dimensional diagrams.

1. Use a two-dimensional diagram as a guide to build something three-dimensional (with some assistance).

Two-Dimensional, Three-Dimensional

Copy Cat:

Use blocks to build a structure. Then, switch with a classmate and build a structure that matches theirs.



Identical Stacks:

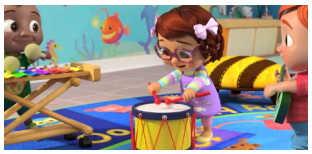
Stack the rings to match the column that is already complete.

Block Arrangements:

Use 5 blocks or less to create the structure in the picture.

Stacks:

Stack objects to match the picture.



The More We Get Together:

Sing and copy the movements in the song.

COINS:

Identify U.S. currency coins.

1. Identify the penny.

Penny

Penny Sorting:

Sort coins into two piles, pennies and not pennies.

Penny Rubbing:

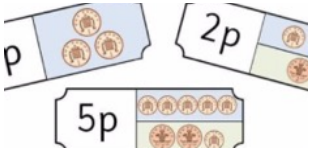
Use a crayon to make an impression of the front and back faces of a penny.

Penny Musical Chairs:

Walk in a circle while music is playing. When the music stops, stand on penny.

Heads or Tails:

Place 5 pennies in a cup and toss them in the air. When they land, count how many show heads (and tails).



Penny Store:

Purchase items from a play store by matching the quantity of pennies shown on the price tag.

SHAPES:

Identify and compare basic geometric shapes, regardless of orientation or size.

1. Identify basic shapes (circle, square, triangle, and rectangle).
2. Identify real-life representations of circles, squares, triangles, and rectangles.
3. Identify features of circles, squares, triangles, and rectangles (sides and corners).

Circle, Square, Triangle, Rectangle, Side, Corner

Shape Match:

Place shapes in the compartment that matches.

Picture Sort:

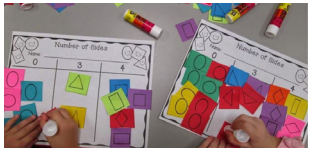
Sort pictures of real-life objects according to their shape.

Tape Shapes:

Perform different locomotor movements called out while moving along a shape's outline.

Shape Everywhere:

Play the song by Patty Shukla and hold up an object that matches the song lyrics.



Real-Life Shape Sort:

Sort items or pictures of objects from real-life by number of sides.

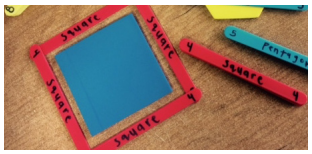
Construct basic geometric shapes.

1. Construct basic shapes (circles, squares, triangles, and rectangles).
2. Trace basic shapes with finger.

Circle, Square, Triangle, Rectangle

Shape Picture:

Cut out shapes and arrange them to create a picture.

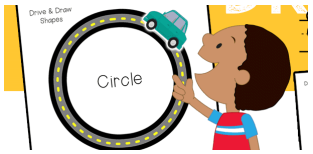


Object Trace:

Lay objects end to end to trace the outline (sides) of shapes.

Straws & Stars:

Use straws and stars to create circles, squares, triangles, and rectangles.



Sand Shapes:

Draw shapes in the sand with finger.

Do You Know What I Am:

Play song by the Singing Walrus and draw the shape in the air. Name the shape described.

Shape by Shape
by Susie MacDonald

Color Zoo
by Lois Ehlert

Round is a Mooncake
by Roseanne Thong

I Spy Shapes in Art
by Lucy Micklethwait

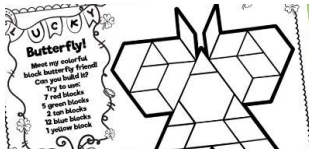
Friendshape
by Amy Krouse Rosenthal & Tom Lichtenheld

SPACE:

Visualize spatial relationships between shapes and space.

1. Complete black-and-white pattern block or tangram puzzles that show how pieces fit together.
2. Flip, slide, and turn pieces to fit into puzzle spaces.
3. Create own pictures and shapes using pattern blocks.

Pattern Block, Tangram, Puzzle, Flip, Slide, Turn

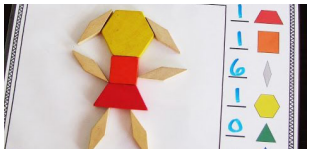


Pattern Block Puzzles:

Match the shape and fit each piece into the lines of their defined spaces to create a picture.

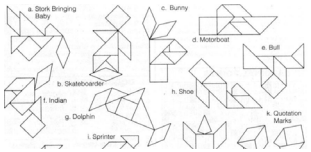
Block Creations:

Use pattern blocks to create their own version of the object in the picture.



Block Creatures:

Use pattern blocks to create a creature, draw it, and record how many of each shape was used.



Tangram Puzzles:

Use marked lines and defined spaces to complete a tangram puzzle.

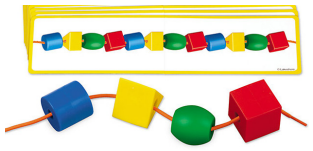
Tangram Square:

Use the 7 tangram pieces to create a square.

Construct three-dimensional structures based on two-dimensional diagrams.

1. Use a two-dimensional diagram as a guide to build something three-dimensional.

Two-Dimensional, Three-Dimensional



Bead Designs:

Use beads to recreate a design or pattern from a picture.

Cube Picture:

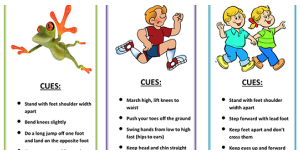
Use cubes to recreate a design from a picture.

Cube Animals:

Use connecting cubes to recreate an animal from a picture.

Shape Structures:

Build structures using three-dimensional shapes to match a picture.



Locomotor Moves:

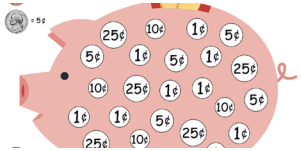
Follow directions and pictures to practice locomotor movements (i.e., galloping).

COINS:

Identify U.S. currency coins.

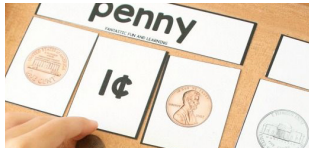
1. Identify the penny and dime.

Penny, Dime



Coin Matching:

Place pennies and dimes on matching pictures (places) in the piggy bank.



Money Puzzle:

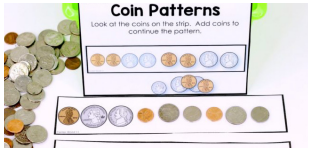
Match the front and back faces of a penny and dime to its name.

Penny Maze:

Color only the pennies to find the path from the top to the bottom of the maze.

Coin Roll:

Roll a coin die, find the matching coin rolled, and cover a corresponding space on the paper.



Coin Patterns:

Use pennies and dimes to create repeating patterns.

SHAPES:

Identify and compare basic geometric shapes, regardless of orientation or size.

1. Identify basic shapes (trapezoid, octagon, hexagon, rhombus) in a variety of colors, sizes, and orientations.
2. Identify features of hexagons, octagons, trapezoids, and rhombi(sides and corners).
3. Compare shapes with 4 sides and 4 corners (rectangle, square, rhombus, trapezoid).
4. Identify three-dimensional shapes (cone, cube, cylinder).
5. Explore faces, edges, and vertices.
6. Identify real-life representations of two- and three-dimensional shapes.

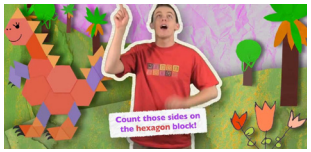
Trapezoid, Parallelogram, Hexagon, Rhombus, Side, Corner, Two-Dimensional, Three-Dimensional, Face, Edge, Vertex

Shape Race:

Roll a die and move through the game board. Name the shapes as you land on them.

Shape Roll and Cover:

Roll a die and cover the picture of the real-life object that matches the shape rolled.



Hexagon Song:

Sing song by Heidi Songs and count the sides of a hexagon.

Real-Life Shape Sort:

Sort pictures of real-life objects according to their three-dimensional shape.

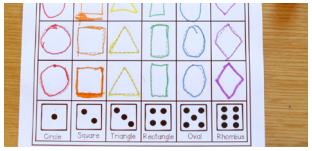
Building:

Build a structure using cubes, cones, and cylinders. Count how many of each three-dimensional shapes was used to build the structure.

Construct basic geometric shapes.

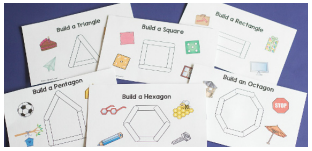
1. Construct basic shapes (trapezoids, octagons, hexagons, rhombi).
2. Construct three-dimensional shapes (cubes, cones, cylinders).
3. Trace basic shapes with finger or writing implement.

Trapezoid, Hexagon, Octagon, Rhombus, Cube, Cone, Cylinder



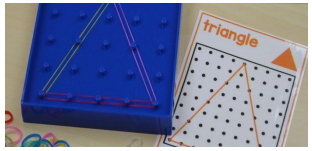
Roll, Trace, & Draw:

Roll a die and draw the shape that matches the number rolled.



Popsicle Stick Shapes:

Use popsicle sticks to create two-dimensional shapes.



Geoboard Shapes:

Create rhombi, hexagons, octagons, and trapezoids using rubber bands on geoboards.

Build a Shape:

Connect toothpicks with playdoh to create two- and three-dimensional shapes.

Paper Shapes:

Cut out a geometric net. Fold and tape it to change it into a three-dimensional shape.

Skippyjon Jones Shape Up
by Judy Schachner

Triangle
by Mac Barnett

If You Were a Polygon
by Marcie Aboff

Circle Dogs
by Kevin Henkes

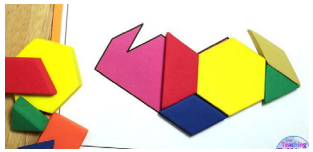
Windows, Rings, & Grapes - a Look at Different Shapes
by Brian Cleary & Brian Gable

SPACE:

Visualize spatial relationships between shapes and space.

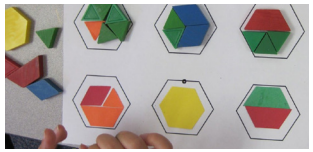
1. Complete pattern block or tangram puzzles that only show an outline of the picture.
2. Flip, slide, and turn pieces to fit into puzzle spaces.
3. Create pictures and shapes using pattern blocks or tangrams.

Pattern Block, Tangram, Puzzle, Flip, Slide, Turn



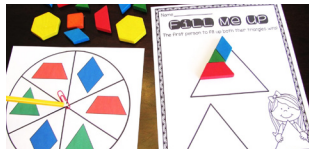
Pattern Block Puzzles:

Manipulate pattern block pieces to fit together, completely filling in the outline of the picture.



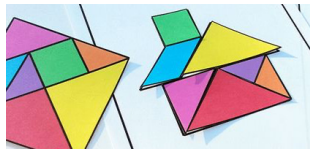
Block Hexagons:

Create hexagons using as many different combinations of pattern block pieces as possible.



Fill Me Up:

Spin the shape spinner and place that pattern block inside the shape. Continue until outline is completely filled.



Tangram Creations:

Create different pictures using tangram pieces.

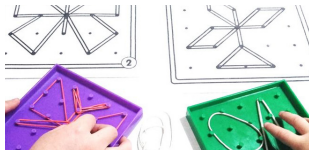
Tangram Puzzle:

Recreate the picture using the seven tangram pieces.

Construct three-dimensional structures based on two-dimensional diagrams.

1. Use a two-dimensional diagram as a guide to build something three-dimensional.
2. Use directional language to help describe how a three-dimensional structure is the same as a two-dimensional diagram.

Two-Dimensional, Three-Dimensional, Left, Right, Top, Bottom, Next To



Geoboards:

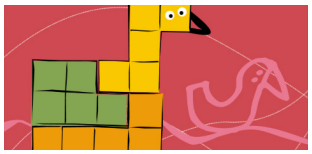
Use rubber bands to recreate a design on a geoboard.

Lacing Boards:

Weave laces into a board to copy a design.

Cube Towers:

Use cubes to recreate a structure.



Pentomino Pictures:

Use pentominoes to recreate a design.

Hand Bells:

Use hand bells to play games and follow the musical sheet to see what comes next.

COINS:

Identify U.S. currency coins.

1. Identify the penny, nickel, dime, and quarter.

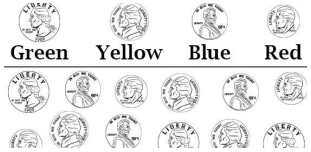
Penny, Dime, Nickel, Quarter

Coin Music:

Assign a coin and a musical instrument to each student. Class is shown a coin sequence (penny, penny, nickel). When the coin assigned to a student is named in the pattern, they play their instrument.

Coin Bingo:

Teacher calls out a coin chosen at random. On your bingo card, cover a space with the coin the teacher called. First to get four spaces covered in a row, wins!



Coin Key:

Color each coin according to the color key.

Coin Sorting:

Sort coins into groups of pennies, nickels, dimes, and quarters.

Collecting Coins:

Start with 5 of each coin. Roll a die and move along the game board. When landing on a space with a coin, add on of those coins to your pile. When landing on colored spaces, take a card and follow the directions. Person with the most coins wins!

MEASUREMENT:

Measurement begins with the simple comparison of items. Children start to compare things such as their toys at a very early age when they are able to identify which toy is bigger or smaller than the other. This then develops to children's ability to order objects by size and then into using informal measurements to measure various items.

In Math Music Motion, students will work with the following measurement components.

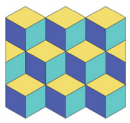
1

Comparison: The ability to accurately compare objects based on length, weight, or capacity.

Student are ready to work with comparison when they are able to identify the differences between bigger/smaller, taller/shorter, heavier/lighter, and empty/full.

MM: Compare length, weight, capacity → CC: Order objects by length, weight, capacity → AA: Measure using non-standard units

2



Tiling: The ability to stack units end to end, without gaps or overlaps, to measure. This skill is also called iteration.

Student are ready to work with tiling to measure when they are able to line objects in a straight line. Students need to understand what it means to leave no gaps in between the objects as well as not to overlap the objects.

MM: NA → CC: NA → AA: Measure using non-standard units

3

Measurable Attributes: The characteristics of objects that can be measured (length, weight, and capacity).

Student are ready to work with measurable attributes (particularly in terms of fairness) when they explore different ways of comparing objects. They can observe how long an object is (length), how heavy an object is (weight), or how much a container can hold (capacity).

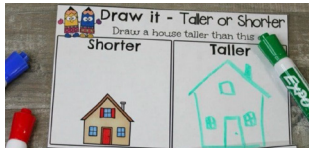
MM: Explore length, weight, and capacity in terms of their opposites (full or empty) → CC: Explore length, weight, and capacity in varying degrees (empty, a little bit, half-way full, full) → AA: Measure length, weight, and capacity using non-standard units

COMPARISON:

Visually distinguish between items based on measurable criteria.

1. Describe single objects using measurable attributes.
2. Compare size (big/small), length (short/tall), weight (heavy light) and capacity (empty/full).

Size, Length, Weight, Capacity, Small, Medium, Big, Short, Long, Tall, Light, Heavy, Empty, Full



Candle Sort:

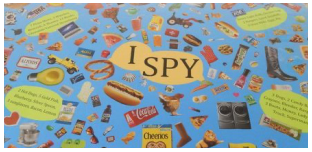
Sort different length candles between short, medium, and tall.

Drawing It:

Draw something that is either shorter or taller than the given image.

Attribute Stretches:

Perform stretches to demonstrate a given attribute (i.e., make yourself as small as you can).



I Spy:

Play a game of iSpy using measurement attributes (i.e., iSpy something that is as big as a pencil).

Playdoh Measurement:

Create objects with playdoh that are longer or shorter than the given object.

Elephant and Mouse:

Model heavy stomping and light walking.

Blow Me Over:

Blow on different objects to see if they are heavy or light.

Weight Sort:

Sort objects by lifting them to determine if they are heavy or light.

Mystery Boxes:

Lift boxes to determine if they are light or heavy.

Instrument Sort:

Sort instruments into two groups, heavy and light.

Orbeez Capacity:

Fill container that have Orbeez at the bottom with water to full capacity without overflowing.

Empty or Full Sort:

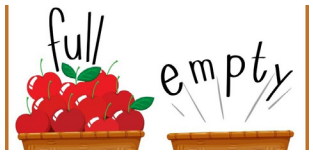
Sort containers into two groups, empty and full.

Filling Colors:

Using translucent containers, pour colored water up to the fill line.

Filling Pompoms:

Using translucent containers, insert colored pompoms up to the fill line.



Empty or Full:

Clip a clothespin on the picture or word that best describes how full the object is.

Big Dog...Little Dog
by P.D. Eastman

COMPARISON:

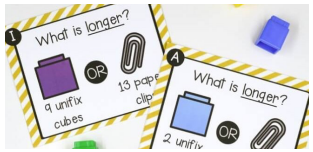
Visually distinguish between items based on measurable criteria.

1. Compare two objects to see which has "more or less" of an attribute.
2. Order objects based on measurable criteria (i.e., smallest to biggest.

Size, Length, Weight, Capacity, Smaller/est, Bigger/est, shorter/est, Longer/est, Taller/est, Lighter/est, Heavier/est, Empty, Full, Equal Balance

Shorter or Longer:

Sort strips of paper into two categories: shorter or longer.



Which is Longer:

Determine which object is longer by directly comparing them.

Pan Pipe Flute:

Order straws from shortest to longest and tape them together to create a flute.

Our Heights:

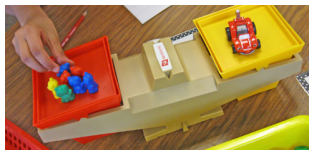
Arrange the class by height, shortest to tallest.

Playdoh Snakes:

Make three snakes and arrange them from shortest to tallest.

Hefting Objects:

Hold two objects to identify which is heavier and lighter.



Primary Balance:

Place objects in a balance to identify which is heavier.

Weight Predictions:

Move body like a balance to predict which object is heavier.

Mystery Weights:

Lift boxes to determine if they are light or heavy, and put them in order.

Instrument Sort:

Order instruments from lightest to heaviest.

Holds More or Less:

Use colored water and different containers to compare which can hold more and which holds less.

Capacity Drawing:

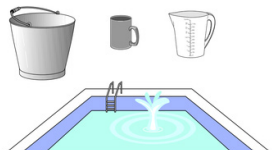
Color a container to represent full, half full, and empty.

Empty to Full:

Using identical containers filled with varied levels of liquid, order the containers from full to empty.

Capacity Order:

Order different sized containers from the smallest to the greatest capacity.



Who Holds More:

Name something with a very small capacity. Next person, name slightly larger in capacity. Continue taking turns until something with a greater capacity cannot be thought of.

The Best Bug Parade
by Stuart J. Murphy

COMPARISON:

Visually distinguish between items based on measurable criteria.

1. Use non-standard units to measure items.
2. Compare items using measurements taken with non-standard units.

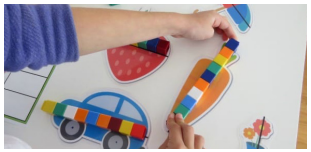
Size, Length, Weight, Capacity, Smaller/est, Bigger/est, shorter/est, Longer/est, Taller/est, Lighter/est, Heavier/est, Empty, Full, Equal, Balance, Non-Standard, Unit, Measure

Measure a Friend:

Use non-standard units to measure how tall a friend is.

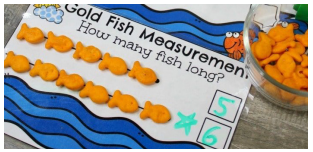
Stick People Units:

Use stick people cutouts to measure the length of different objects.



Measure with Cubes:

Use cubes to measure how long or tall a picture of an object is.

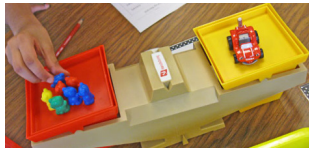


Goldfish Measures:

Use goldfish to measure how long each line is and compare them.

Frog Jumps:

Jump as far as you can. Use non-standard units to measure how far the jump was.



Balanced:

Balance the weight of an object and counters.

Weight Comparisons:

Use a balance and counters to weight and compare objects.

Weight Hunt:

Measure the weight of different classroom objects with counters.

Estimate & Measure:

Guess how many cubes each object weighs. Use a balance to check.

Instrument Measure:

Measure how heavy a musical instrument is in cubes and marbles.

Pompom Capacity:

Use spoons to scoop up pompom and fill different sized containers to their full capacity. Count and compare the different amounts of pompoms each container can hold.

Capacity Cubes:

Measure the capacity of different boxes using cubes (making sure that the cubes fit tightly).

Cap, Ladle, & Bottle:

Use cups, ladles, and bottles to quantify how much water a large jar can hold.

Non-Standard Units:

Measure the capacity of different sized cups using cubes, pompoms, and pasta. Then, compare which cup had the greatest and least capacity.

Estimate & Measure:

Choose a non-standard unit to measure the capacity of containers. First, estimate the capacity and then measure.

Inch by Inch
by Leo Lionni

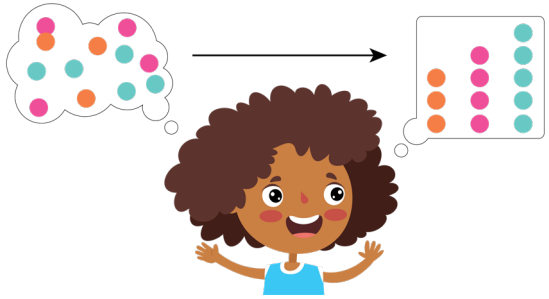
DATA:

Data collection is an innate ability that takes place at a very young age. Children are taking in data about the world around them and are making sense of it on a regular basis. Knowing what objects are safe to touch or how a certain object works are examples of information that children are collecting around them daily. Working with data in the classroom can be supported by ensuring students go through the process of collecting, representing, and then interpreting the data they are collecting.

In Math Music Motion, students will work with the following data components.

1

Organizing Data: The ability to sort items based on different categories (color, shape, size).



Student are ready to begin sorting when they can identify the differences in attributes of objects. Can they point out the different colors? Do they notice the different shapes? Are all the objects the same size?

MM: Sort 5 objects → CC: Sort up to 10 objects → AA: Sort up up to 20 objects

2

Representing Data: The ability to arrange objects into simple graphical representations.

Students can start working with representing data into graphs when they are able to sort objects into categories and count objects accurately.

MM: NA → CC: Arrange objects into picture graph → AA: Arrange objects into bar graph

3

Interpreting Data: The ability to answer questions about graphical representations of data.

Students can practice answering "how many" questions about the objects they are sorting once they are able to successfully sort object and accurately count.

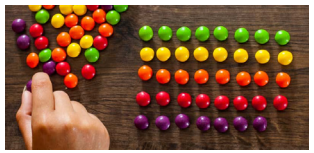
MM: Answer questions about how many and which is more, less, or equal → CC: Answer questions about how many and which is more, less, or equal, and how many more one set has then another (limited to a difference of 3) → AA: Answer questions about how many and which is more, less, or equal, and how many more one set has then another (limited to a difference of 5)

GATHERING INFORMATION:

Pose questions, gather, and represent information using concrete objects, pictures, and graphs.

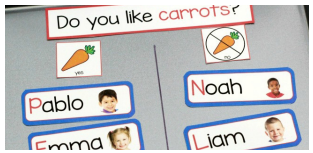
1. Sort 5 objects into categories.
2. Answer questions about how many there are, and which is more, less, or equal.

Sort, More, Less, Equal, Data



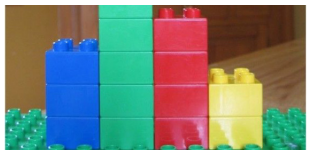
Sorting Objects:

Sort 5 objects according to categories (e.g., color, shape, size, etc.).



Question of the Day:

Use magnets or post-its to record student answers to a daily yes or no question.



Lego Graph:

Connect same colored Lego to create towers. Place the towers next to each other to compare which has the most, least, or equal number of Lego.

Apple Graph:

Use apples (or other objects) to create a simple picture graph as a class. Then, answer questions about which has more, less, or are equal.

Line Up:

Ask a yes or no question. Students stand in either the yes or no line to answer and compare which line is longer.

Tally O'Malley
by Stuart Murphy & Cynthia Jabar

GATHERING INFORMATION:

Pose questions, gather, and represent information using concrete objects, pictures, and graphs.

1. Sort 10 objects into categories.
2. Arrange objects into a simple picture graph.
3. Answer questions about how many, which is more, less, or equal, and how many more one set has than another (limited to a difference of 3).

Sort, More, Less, Equal, Picture Graph, Data

Candy Sort:

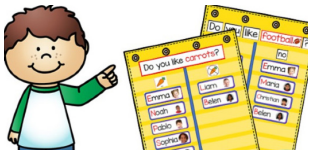
Sort candy bars into columns.

Cereal Graphing:

Sort 10 pieces of colored cereal and arrange them into matching columns.

Coin Graphing:

Sort pennies and dimes into columns. Answer questions about which has more, less, or are they equal.



Post-It Graphs:

Use post-it notes to graph individual student answers to a question. Compare to find out which answer was the most popular.

Roll and Graph:

Roll a die with images on it. Place the matching object rolled into columns on the graph. Count to compare which object was rolled the most.

The Best Vacation Every
by Stuart J. Murphy

GATHERING INFORMATION:

Pose questions, gather, and represent information using concrete objects, pictures, and graphs.

1. Sort 20 objects into categories.
2. Arrange objects into a simple picture graph.
3. Represent data in a simple bar graph.
3. Answer questions about how many, which is more, less, or equal, and how many more one set has than another (limited to a difference of 5).

Sort, More, Less, Equal, Picture Graph, Bar Graph, Data

Graphing Cubes:

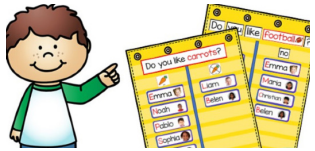
Grab a handful of cubes. Sort them by color and connect them. Place each color rod in a column on the graph.

Teddy Colors:

Grad a handful of counters and sort them by color. Color the graph to match the number of each group of colored bears. Answer data questions.

Bar Graphs:

Color each kind of insect a different color. Count the amount of each insect and color the bar graph to match. Answer data questions.



Roll and Graph:

Roll a die and record what is rolled on the graph. Stop when one column reaches the top. Answer data questions.

Instrument Graph:

Listen to instruments being played, identify the instrument, and color that space on the graph. Answer data questions.

The Great Graph Contest
by Loreen Leedy

REASONING:

Reasoning is the process of thinking outside the box to problem-solve, draw conclusions, and make sense of things. The ability to reason is essential in decision making and children as young as two are capable of thinking both logically and spatially when they start questioning "why" things are the way they are.

Logical reasoning is built on observation and requires an understanding of attributes, relationships, and sequence. Experience facilitates the growth of logical reasoning. It includes abilities like comparison, analysis, synthesis, and understanding cause-effect relationships.

Spatial reasoning is one of the most important aspects of a young child's mathematical development. It enables them to understand and describe the relationships between objects, others, and themselves. It includes abilities like imagining how an object looks when rotated, perspective, how parts fit together, how the positions of objects relate to one another, and manipulating objects.

In Math Music Motion, students will work with the following reasoning components.

1

Pattern Recognition: The ability to recognize order in seaming chaos.

Students can begin working with repeating patterns once they are able to independently identify the element that is changing in a pattern (changing colors, changing shapes, changing sizes, changing objects).

MM: Create an AB pattern → CC: Create an AAB, ABB, and AABB pattern → AA: Create an ABC and ABCD pattern

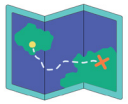
2

Sorting: The ability to group different objects using one or more attribute.

Students are ready to work with sorting when they have had success in matching activities. When a student puts two objects together according to a particular feature, they are matching. When they group a number of objects together, they are sorting.

MM: Sort objects in one way → CC: Sort objects in two different ways → AA: Sort objects in three or more different ways

3

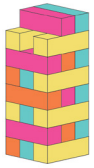


Directionality: The ability to describe where an object is located in relation to other things.

Students should begin working with directional and positional words using real objects in the environment. Starting with activities that explore directional and positional words in relation to the child's own body and slowly progress toward objects in relation to each other will support the child's natural egocentric mindset.

MM: Use directional words to describe 5 objects → CC: Use directional words to describe 10 objects → AA: Use directional words to describe 20 objects

4



Modeling: The ability to construct a specific model from an example or a picture.

Students can begin working with modeling when they have developed a grip that would allow them to manipulate pieces appropriately during construction. The types of structures they build should progress is complexity from stacking to building complex repeating units (stairs).

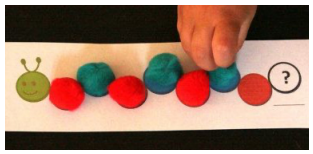
MM: Build with assistance → CC: Build structures from diagrams → AA: Use directional words to describe how a structures is like a diagram

PATTERNS:

Identify and complete a repeating pattern.

1. Copy AB patterns.
2. Work with patterns that have a single variable (one change).
3. Work with patterns that have multiple variables.

Pattern, Repeat, AB, Variable, Color, Shape, Copy

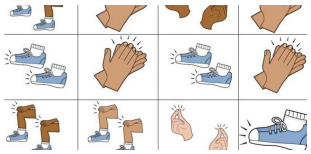


Caterpillar Pompoms:

Place pompoms on a caterpillar to match the AB color pattern.

Block Patterns:

Place patterns bocks on the mat to match the color and shape pattern.

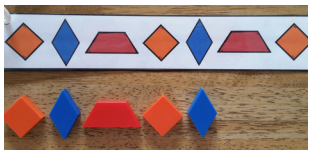


Physical & Auditory Patterns:

Copy a simple repeating pattern with movement and sound (clap, snap).

Movement Pattern:

Stand in line and copy a movement pattern (i.e., pass the ball over and under).



Foam Shapes:

Use two different shapes of the same color to copy the teacher's pattern.

Create simple patterns.

1. Create an AB pattern using different shapes and colors.
2. Create patterns that have a single variable (one change).
3. Create patterns that have multiple variables (two changes).

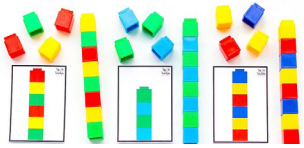
Pattern, Repeat, AB, Variable, Color, Shape

Movement Patterns:

Create an AB pattern using body movements.

Bell Patterns:

Create an AB pattern with different toned bells.



Patterns with Cubes:

Use linking cubes to create an AB pattern.

Ice Tray Patterns:

Organize buttons or other small objects into an AB pattern using an ice tray.

Sticker Patterns:

Use different shaped and colored stickers to create AB pattern headbands.

A Pair of Socks: Matching Book
by Stuart J. Murphy

Pattern Book
by Henry Pluck Rose

SORTING:

Sort objects into groups of things that belong together.

1. Sort objects in one way.
2. Sort objects by color.

Sort, Same, Color

Sorting Bears:

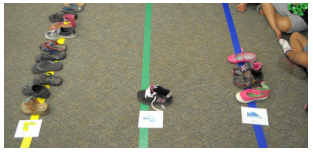
Sort bears into matching colored cups.

Sorting Pompoms:

Sort pompoms by into the colored tube.

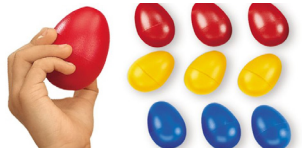
Sticker Sort:

Sort colored stickers onto matching paper.



Student Sort:

Sort the class by color of clothes, hair, or shoes.



Shaker Sort:

Sort shakers by color.

Opposites
by Nina Filipek

Animal Opposites
by Vit Hansen

Brown Bear, Brown Bear
by Eric Carle

Spot the Dot
by David Carter

Where is the Green Sheep?
by Mem Fox

Planting a Rainbow
by Lois Ehlert

Bear Sees Colors
by Karma Wilson

PUZZLES:

Use reasoning to solve logic puzzles.

1. Solve simple logic puzzles with objects.

Logic

Line Up:

Line up objects according to clues given about each object's position.

Matching Paths:

Sit across from someone with a barrier between so that blocks cannot be seen. One person builds a path and gives descriptions to help their partner create an identical path.

Hide & Seek:

Hide an object. The group asks yes or no question to help them find the object.

Sequencing Events:

Use prior knowledge to connect three puzzles pieces in the correct order that they occur.

Kid Line Up:

Stand in a line according to clues given about each person's position.

SPATIAL:

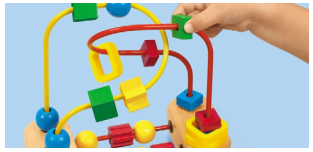
Follow a path.

1. Follow a given path.

Path

Footprint Paths:

Follow a path of footprints on the floor.



Bead Maze:

Push beads from one side to the other, following the twists and turn of the curved wire.

Follow the Leader:

Follow the path and copy the movements of the person in the front of the line.

Magnatile Maze:

Push a car through a simple Magnatile maze.

Bead Path:

Place beads on a path that the teacher creates out of glue.

Practice directionality and relative position.

1. Use directional and position words to help describe 5 objects.
2. Describe positions using one direction.

Above, Below, Up, Down, On, Under

Puppet Positions:

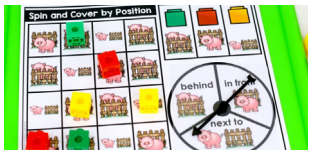
Use puppets to demonstrate positional words called out.

Cup Positions:

Use a bear to show different positions in relation to a cup.

Stretching:

Stretch (i.e., star reach) using the correct body position.



Spin and Show:

Use the spinner and demonstrate the positional word landed on.

One Little Finger:

Sing the song (by Super Simple Songs) and follow the directions.

Up, Down, and Around
by Katherine Ayres

Up & Down
by Britta Teckentrup

Yellow Ball
by Molly Bang

Hide-and-Seek
by R. D. Ornot

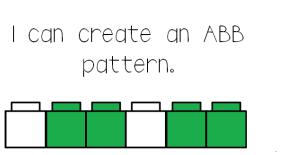
In! On! Up!
by Eve Heidi Bine-Stock

PATTERNS:

Identify and complete a repeating pattern.

1. Copy and extend AAB, ABB, and AABB patterns.
2. Work with patterns that have a single variable (one change).
3. Work with patterns that have multiple variables.
4. Identify the core of a repeating pattern.

Pattern, Repeat, AAB, ABB, AABB, Variable, Color, Shape, Core, Extend



Cube Patterns:

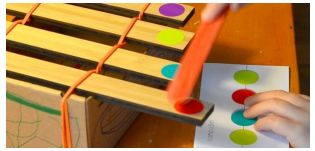
Place cubes to match the repeating color pattern.

Bear Patterns:

Place colored bears on the mat to match the repeating pattern.

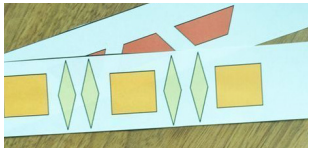
Clothespin Patterns:

Use clothespins to copy and extend the repeating pattern.



Xylophone Patterns:

Hear (and see) a pattern played on a xylophone. Repeat that pattern and continue it.



Foam Shapes:

Use two different shapes of the same color to copy the teacher's pattern.

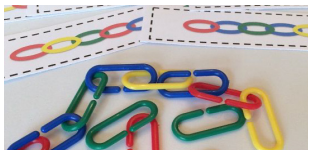
Create simple patterns.

1. Create AAB, ABB, and AABB patterns using different shapes and colors.
2. Create patterns that have a single variable (one change).
3. Create patterns that have multiple variables.

Pattern, Repeat, AAB, ABB, AABB, Variable, Color, Shape

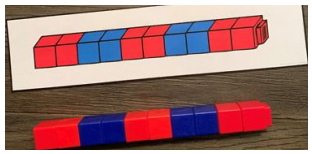
Instrument Patterns:

Create AAB, ABB, and AABB patterns using different musical instruments.



Link Patterns:

Create AAB, ABB and AABB patterns with different colored links.



Patterns with Cubes:

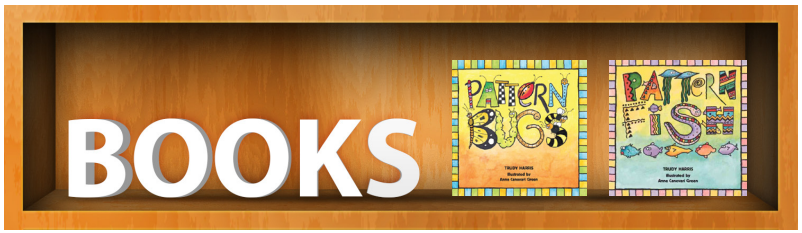
Create AAB, ABB and AABB patterns with different colored linking cubes.

Block Patterns:

Create AAB, ABB and AABB patterns with building blocks.

Mini Eraser Patterns:

Create AAB, ABB and AABB patterns with different mini erasers.



Pattern Bugs
by Trudy Harris

Pattern Fish
by Trudy Harris

SORTING:

Sort objects into groups of things that belong together.

1. Sort objects in two different ways.
2. Sort objects by color and shape.

Sort, Same, Color, Shape

Shape Sort:

Sort different objects by shape.

Hula Hoop Sorting:

Sort objects in groups using hula hoops.

In the Basket:

Sort shapes while singing song.

Tempo Sort:

Sort rhythms played as fast or slow.

Instrument Sort:

Sort instruments by shape or attribute.

The Opposite
by Tom MacRae & Elena Odriozola

My Book of Opposites
by Ronne Randall

Dog's Colorful Day
by Emma Dodd

Press Here
by Hervé Tullet

Mouse Paint
by Ellen Stoll Walsh

Color Dance
by Ann Jonas

Green is a Chile Pepper
by Roseanne Thong

PUZZLES:

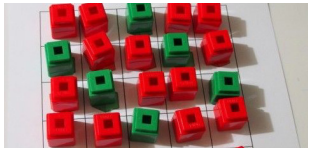
Use reasoning to solve logic puzzles.

1. Solve simple logic puzzles with objects and pictures.

Logic

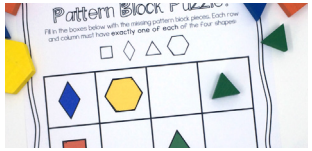
Coin Triangle:

Line up 10 coins to make a triangle (in a configuration like bowling pins). Moving only 3 coins, make an upside down triangle.



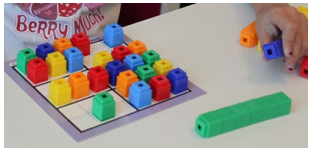
Cognitive Cubes:

Arrange cubes by following directions about their positions (i.e., arrange the blocks so that all green cubes are touching another green cube at only 2 corners).



Shape Sudoku:

Arrange 3 different pattern blocks in a 3x3 grid, so that there is only one of each shape in every column and row.



Array Sudoku:

Arrange 3 different colored blocks in a 3x3 array, so that there is only one of each color in every column and row.

Shape & Color Puzzle:

Move puzzle pieces one at a time until they match the positions on the puzzle card.

SPATIAL:

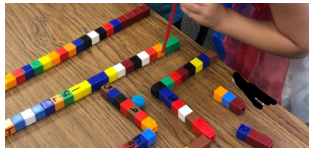
Follow a path.

1. Look ahead down a given path to identify obstacles and avoid going the wrong way.

Path, Maze, Obstacle

Lego Maze:

Tilt a Lego maze to move a marble from one end to the other.

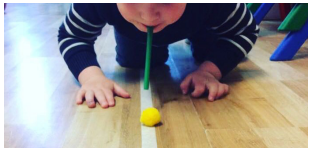


Cube Maze:

Create the walls of a maze using cubes and use a straw to blow a pompom through it.

Walk the Line:

Walking heel to toe, follow tape lines on the floor.



Pompom Path:

Use a straw to blow and move a pompom along a path.

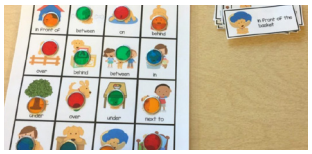
Gel Maze:

Push the gel to move the ball from one end to the other.

Practice directionality and relative position.

1. Use directional and position words to help describe 10 objects.
2. Describe positions using one direction.

Above, Below, Up, Down, On, Under, Inside, Outside, Front, Behind, Forward, Backward, Left, Right



Position Bingo:

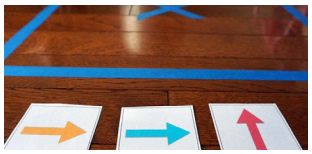
Mark pictures on bingo card that match word called by teacher.

Interactive Positions:

Place objects in pictures to demonstrate positional words.

Position Farm:

Move pictures of farm objects to match positional words.



Follow Directions:

Move through a grid by following verbal directions given.

Hokey Pokey:

Sing and follow the directions of the song.

We're Going on a Bear Hunt
by Michael Rosen

Cat Up, Cat Down
by Catherine Hnatov

The Greatest Gymnast of All
by Stuart J. Murphy

Rosie's Walk
by Pat Hutchins

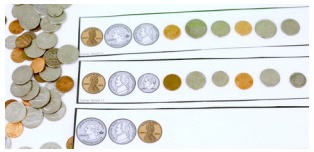
Around the House the Fox Chased the Mouse
by Rick Walton

PATTERNS:

Identify and complete a repeating pattern.

1. Copy and extend ABC and ABCD patterns.
2. Work with patterns that have a single variable (one change).
3. Work with patterns that have multiple variables.
4. Identify the core of a repeating pattern.

Pattern, Repeat, ABC, ABCD, Variable, Color, Shape, Size, Core, Extend



Coin Patterns:

Copy and complete patterns with different coins and their faces.

Pompom Pattern:

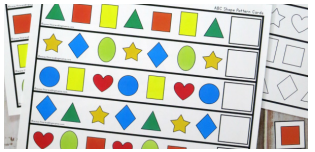
Use pompoms to copy and extend ABC and ABCD patterns.

Repeat This Pattern:

Use different colored and sized bears to copy and extend patterns.

Pattern Song:

Sing *Banana, Banana, Meatball* and copy the movements. Identify the core of the pattern.



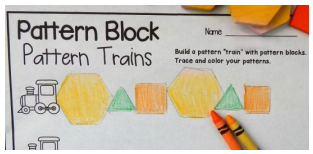
Foam Shapes:

Use three or more different shapes of the same color to copy the teacher's pattern.

Create simple patterns.

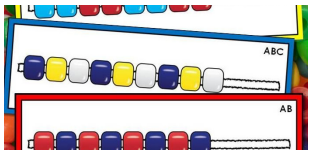
1. Create ABC and ABCD patterns using different shapes, colors, and sizes.
2. Create patterns that have a single variable (one change).
3. Create patterns that have multiple variables.
4. Explain the rule used to create a repeating pattern.

Pattern, Repeat, ABC, ABCD, Variable, Color, Shape, Size, Rule



Pattern Trains:

Build a ABC or ABCD pattern train using blocks.



Beaded Patterns:

String beads to create different patterns.

Paperchain Patterns:

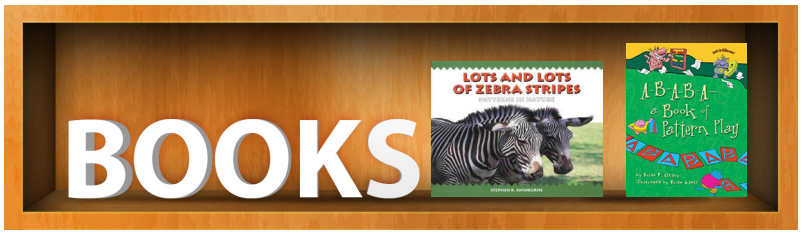
Create ABC and ABCD patterns with different colored strips of paper to create chains.

Bear Patterns:

Create ABC and ABCD patterns with different colored and sized bear counters.

Clapping Patterns:

Create patterns using claps of different dynamics, rhythms, or movements.



Lots and Lots of Zebra Stripes
by Stephen Swinburne

A-B-A-B-A
a Book of Pattern Play
by Brian Cleary

SORTING:

Sort objects into groups of things that belong together.

1. Sort objects in three or more different ways.
2. Sort objects by color, shape, and size.
3. Determine the property used for sorting.
4. Identify the commonality among a group of objects.

Sort, Same, Color, Size, Shape

Size Sort:

Sort different objects by size.

Button Sort:

Sort buttons in groups by size, color, etc.

Animal Sort:

Sort animal counters in groups and explain why.

Movement Sort:

Pick an animal and move like them. Sort the "class animals" by the way they move.

Pitch Sorting:

Sort bells into low and high pitch groups.

The Opposite Zoo
by Il Sung Na

Mix It Up!
by Hervé Tullet

The Day the Crayons Quit
by Drew Daywal

Every Color
by Erin Eitter Kono

Pete the Cat I love My White Shoes
by Drew Daywal

Red is a Dragon
by Roseanne Thong

PUZZLES:

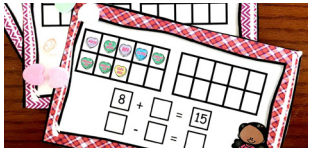
Use reasoning to solve logic puzzles.

1. Solve simple logic puzzles with objects, pictures, or writing.

Logic

Instrument Order:

Listen to clues to figure out the order of musical instruments.



Computation Puzzles:

Place given numbers into boxes missing numbers to make the equation true.

Story Logic:

Create a chart and use clues to narrow down which items match each person in the story.

Tower of Hanoi:

Start with all disc on one rod, ordered in size from the smallest at the top to the largest at the bottom. Move all the discs, stacked in the same order, to another rod. Only one disc can be moved at a time and a larger disc can never be on top of a smaller disc.

Rush Hour Jr.:

Move the cars back and forth on the board until the ice cream truck can get free.

SPATIAL:

Follow a path.

1. Look ahead down a given path to identify obstacles and avoid going the wrong way.
2. Use a writing implement to trace a path.

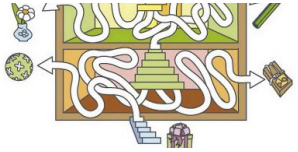
Path, Maze, Obstacle

Magnetic Maze:

Use magnetic pens to move the ball through the maze and get to the center.

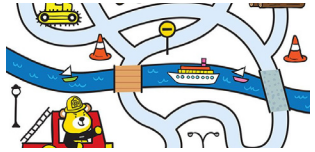
Street Maze:

Use a toy car to drive through the maze, trying different roads to find the way home.



Follow the Path:

Follow the twists and turns of the path to connect two matching pictures.



A-Mazing:

Complete simple mazes to get from the beginning to the end, avoiding obstacles.

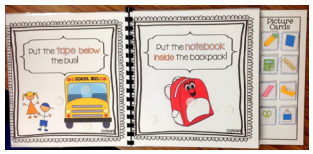
Maze Design:

Use straws to create a marble maze.

Practice directionality and relative position.

1. Use directional and position words to help describe 20 objects.
2. Describe positions with more than one direction.

Front, Behind, Forward, Backward, Left, Right, Over, Beside, Next to, Through, Between



Position Word Book:

Glue an object on each page to match the positional phrase.

I Spy:

Play I Spy by describing the position of an object as clues.

Mental Blox:

Work with a partner. One person builds a structure and describes the position of pieces to their partner. Partners build an identical structure based on descriptions given.

Map Positions:

Create a map. Describe where something is located on the map using positional words.

Bear Hunt:

Sing *We're Going on a Bear Hunt* and act out the different movements and positions in the song.

The Bouncing Ball
by Deborah Kelly

Infinity and Me
by Kate Hosford

Over, Under, By the Clover
by Brian Cleary

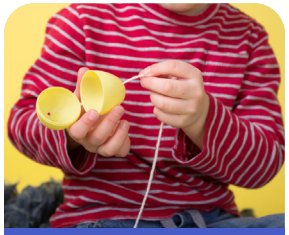
In-Between Things
by Prisceilla Tey

The Bear Went Over the Mountain
by Iza Trapani

MOTION

Math Music Motion focuses on building and using both fine and gross motor skills. Fine motor skills are the ability to control and coordinate the small muscles on the hand to perform precise movements (using tweezers). Gross motor skills are the ability to control and coordinate the large muscle of the body to perform movements (playing baseball).

Both of these groups of skills should be developed simultaneously, as many activities depend on the coordination of both groups. In order to develop fine and gross motor skills, focus on these areas:


BILATERAL INTEGRATION


AGILITY


BALANCE


COORDINATION


MOTOR PLANNING

BILATERAL INTEGRATION:

- This is the ability to smoothly perform actions using both sides of the body simultaneously. There is a part of the brain that connects the right and left hemispheres (corpus callosum). By practicing these skills, this connection becomes stronger and more integrated, allowing for quicker communication and high-levels of reasoning. There are four stages of bilateral integration:

  Symmetrical: Both sides of the body working together in unison and mirror image of one another.

  - Squeezing a bottle with both hands at the midline, snapping fingers on both hands at the same time, holding a book, double doodles, separating magnetic blocks, tearing tissue paper
  - Jumping rope, jumping jacks, catching a ball with two hands, using a rolling pin, pushing or pulling with both hands, clapping hands, playing the cymbals or rhythm sticks, popping bubbles with both hands, bunny hops, bounce a ball with both hands, playing an accordion, jumping with both feet together

Reciprocal: Moving both sides of the body at the same time in opposite or opposing motions.

- Mirror double doodles, rolling play dough to make a smooth ball
- Marching, walking, riding a bike, crawling, skipping, playing drums with alternating hand beats, hopping from one foot to another, wheelbarrow walks, shifting a slinky from hand to hand

Asymmetrical: Each side of the body acting in a different way to complete a single, specific task.

- Writing and holding the paper, cutting, tying laces, turning the page of a book, stabilizing an object to manipulate it with the other hand, gluing, stringing beads, threading, lacing, coloring, tracing around stencils, playing an instrument, hole punching, opening containers, folding paper, putting on a coat or backpack
- Throwing a ball, kicking a ball, catching one handed

Crossing the Midline: Reaching across the body (the imaginary line down the center of the body) to complete a task.

- Writing, scooping items, removing stickers from opposite arm, drawing a line or shape across a large piece of paper
- Sitting cross-legged, drawing a line with a ruler, arm scissors, windmills, passing the ball in a circle or a line, dancing, reaching for objects, sweeping, playing with cars on a large path, figure eights, twister

AGILITY:

- This is the ability to maintain and control the body's position while changing directions. Agility is strongly connected to strength, balance, and coordination. While agility is generally associated with gross motor movements (sports, obstacle courses, tag), it is also applicable to fine motor skills and is often referred to as dexterity (threading, mazes, using glue with precision).