



INTERNATIONAL COLLEGE



Preschool Math Curriculum



VISION

The vision of International College (IC) is to empower learners of today to be global citizen leaders of tomorrow.

MISSION

The mission of International College is to empower learners to take initiative, think critically, and serve as role models in a global society. The curriculum aims for excellence at all levels and embraces the education of the whole person. Graduates of IC will have developed self-confidence, problem-solving and decision-making abilities as well as self-discipline, social and environmental responsibility, and an awareness of and respect for the connected nature of our global community.

VISION

La vision de L'International College (IC) est de permettre aux apprenants d'aujourd'hui de devenir des leaders et des citoyens du monde de demain.

MISSION

La mission de L'International College est de permettre aux apprenants de prendre des initiatives, de réfléchir de manière critique et de servir de modèles dans une société mondiale. Le programme vise l'excellence à tous les niveaux et inclut l'éducation de toute la personne. Les diplômés de L'IC auront développé des capacités de confiance en soi, de résolution de problèmes et de prise de décision, ainsi que l'autodiscipline, la responsabilité sociale et environnementale, la conscience et le respect de la nature connectée de notre communauté mondiale.

الرؤيا

تسعى مدرسة الانترنتاشونال كولج (الأي سي) إلى تمكين متعلمي اليوم ليكونوا مواطنين قياديين في المجتمع العالمي مستقبلاً

الرسالة

تطمح مدرسة الانترنتاشونال كولج إلى تمكين متعلميها من الأخذ بزمام المبادرة والتحلّي بتفكير نقدي كي يصبحوا نماذج يحتذى بها في مجتمع عالمي. يهدف منهج المدرسة إلى التفوّق على جميع الأصعدة ويشجّع على بناء الشخصية المتكاملة للمتعلّمين. يكتسب خريجو المدرسة الثقة بأنفسهم ويطوّرون قدراتهم لحلّ المشاكل واتخاذ القرارات، بالإضافة إلى الانضباط الذاتي والمسؤولية تجاه المجتمع والبيئة، كما يكتسبون الوعي لفهم طبيعة الترابط المتشعب في مجتمعاتنا العالمي واحترامها.



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DATA HANDLING

Conceptual Understanding

By the end of preschool students will understand that:

- We collect information to make sense of the world around us.
- We pose questions to help us collect information.
- We can collect and organize data in different ways and for different purposes.
- We can represent data in different ways (graphs, charts, sets, tables, and other tools) to help us answer questions and make sense of the data collected.
- We can solve problems, make predictions, and draw conclusions based on data we have collected and graphed.

Nursery	KG1	KG2
<p>DH.Nr-1. With guidance collect data through observations and experimentation</p> <p>DH.Nr-2. Describe real objects and people by <u>attributes</u></p> <p>DH.Nr-3. Identify similarities and differences between real objects and people</p> <p>DH.Nr-4. <u>Sort</u> objects and people into categories (<u>sets</u>) by one <u>attribute</u></p> <p>DH.Nr-5. Label categories (<u>sets</u>) according to a specific criterion.</p> <p>DH.Nr-6. With support, use <u>sets</u> to interpret organized data by comparing quantities using mathematical language (few, a lot, more, less, same).</p>	<p>DH.KI-1. Collect data through observations, experimentation, and interviews</p> <p>DH.KI-2. Organize and label data about people and objects into categories by <u>sorting</u> (shape, color, size, materials, action...) according to one <u>attribute</u></p> <p>DH.KI-3. Record data using symbols and <u>tally marks</u></p> <p>DH.KI-4. Represent data in <u>concrete graphs</u> and <u>pictographs</u></p> <p>DH.KI-5. Read and interpret <u>concrete graphs</u> and <u>pictographs</u> by comparing quantities (more than, less than, equal to, most, least, less, more).</p>	<p>DH.KII-1. Ask questions that can be answered through data collection (observations, experiments, and interviews)</p> <p>DH.KII-2. Organize data about people or objects by <u>sorting</u> according to one or more <u>attributes</u>, and describe by labeling the criteria</p> <p>DH.KII-3. Record data using methods of their choice (Yes/No, checkmarks, <u>tally marks</u>)</p> <p>DH.KII-4. Represent data by creating <u>concrete graphs</u>, <u>pictographs</u>, and simple <u>bar graphs</u></p> <p>DH.KII-5. With support and guidance and provided that they have a bar or pictograph, kids infer the labels (main idea -title and supporting ideas -categories).</p> <p>DH.KII-6. Read and interpret data presented in various ways, including <u>tally tables</u>, <u>concrete graphs</u>, and <u>pictographs</u> by</p>

		asking and answering questions and drawing conclusions DH.KII-7. Use <u>Venn diagrams</u> (two circles) to explore relationships between data.
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DATA HANDLING GLOSSARY

Attribute: A characteristic related to the physical appearance of an object, person, or occurrence. [ATTRIBUTE](#)

Bar graph: A bar graph is a graph that presents categorical data with rectangular bars with heights or lengths proportional to the values that they represent. The bars can be plotted vertically or horizontally. [BAR GRAPH](#)

Concrete graph: A graph on which objects are used to represent pieces of information; for example, stacking blocks could be used to represent cars, and paper squares could be used to represent animals. [CONCRETE GRAPH](#)

Pictograph: A graph that uses pictures or symbols to represent one or more data values. [PICTOGRAPH](#)

Set: A collection of objects (elements). [SET](#)

Sort: to arrange in groups; separate according to criteria. [SORT](#)

Tally mark: A visual representation of groups of 5. One vertical line is made for each of the first four numbers; the fifth number is represented by a diagonal line across the previous four. [TALLY MARK](#)

Tally table: A table that uses tally marks to count data and record frequencies. [TALLY TABLE](#)

Venn diagram: A diagram that consists of two or more sets that often overlap in the middle. A criterion is set for each set and objects or numbers are sorted and placed into sets according to the criteria. [VENN DIAGRAM](#)



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MEASUREMENT

Conceptual Understanding

By the end of preschool students will understand that:

- We use measurement in our daily lives to describe, compare and communicate our thinking.
- Objects and shapes have measurable attributes that can be compared and communicated in different ways.
- We use different tools to measure different things.
- The attribute we are measuring determines the tool we will use and therefore the unit of measurement.
- Measurement attributes can be communicated by using comparative and descriptive language.

Nursery	KG1	KG2
<p>M.Nr-1. Describe objects and shapes by measurable <u>attributes</u> (size, length, weight: big, tall, long, big, small, heavy).</p> <p>M.Nr-2. Compare and <u>order</u> two objects according to their measurable attribute length, height, size, weight, (longer, taller, bigger, heavier,...).</p> <p>M.Nr-3. Describe and <u>sequence</u> up to three events in their daily routine using words and phrases relating to chronology and time, for example, before, after, bedtime, storytime, first, next, then, last..</p> <p>M.Nr-4. With support, begin to read the date on a calendar.</p>	<p>M.KI-1. Select an <u>attribute</u> to measure (height, length, mass) and determine a <u>non-standard unit</u> of measure.</p> <p>M.KI-2. <u>Estimate</u> the measurable attributes of an object, space, and materials.</p> <p>M.KI-3. Measure and record the measurable attributes of objects, space, materials using <u>non-standard units</u>.</p> <p>M.KI-4. Compare and <u>order</u> three or more objects, spaces, materials according to a measurable attribute (e.g., determine which of two other containers holds the most water).</p> <p>M.KI-5. Describe and <u>sequence</u> up to five events in their daily routine using words and phrases relating to chronology and time, for example, before, after, bedtime, story time, and ordinal numbers (first, second..) then, last</p> <p>M.KI-6. Read the date on a calendar, and use a calendar to identify days, weeks, months, holidays, and seasons.</p>	<p>M.KII-1. Select an <u>attribute</u> to measure (height, length, mass) and justify the appropriateness of the <u>non-standard unit</u> of measure.</p> <p>M.KII-2. <u>Estimate</u> the measurable attributes of an object, space, materials.</p> <p>M.KII-3. Measure and record the measurable attributes of objects, space, and materials using <u>non-standard units</u>.</p> <p>M.KII-4. Compare and <u>order</u> four or more objects, spaces, materials according to a measurable attribute using concrete material (e.g., determine which of three other containers holds the most water).</p> <p>M.KII-5. Describe and <u>sequence</u> up to seven events in their daily routine using words and phrases relating to chronology and time (e.g., before, after, bedtime, story time, ordinal numbers: first, second..).</p> <p>M.KII-6. Use the calendar/schedule, to measure passage of time (after three day we have a holiday, the easter break is 12 days long, my</p>



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		birthday is on the 17th of august so it is 10 days from now).
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MEASUREMENT GLOSSARY

Attribute: Attribute: A characteristic related to the physical appearance of an object, person, or occurrence. [ATTRIBUTE](#)

Estimate: To roughly calculate, or make a reasonable guess.

Non-standard unit: A unit or object that is used for measurement but isn't adopted as a measurement standard. [NON STANDARD UNIT](#)

Order: Arrange according to length, height, mass, capacity. [ORDER](#)

Sequence: To arrange in a chronological order.



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SHAPE AND SPACE

Conceptual Understanding

By the end of preschool students will understand that:

- Our world is composed of shapes and figures that are put together in particular ways for particular purposes.
- Shapes and figures have different properties and attributes.
- We can understand and describe our world by looking at how shapes and figures work together.
- We can use positional language to describe an object's location.
- Many of the properties in two-dimensional shapes can also be found in three-dimensional figures.
- The strategy of decomposing and recomposing is useful when thinking about shapes and space.

Nursery	KG1	KG2
<p>SS.Nr-1. Identify the <u>relative locations</u> of objects using <u>positional language</u> for example: inside, outside, above, below, next to, behind, in front of, up, down.</p> <p>SS.Nr-2. Identify <u>shapes</u> in the environment</p> <p>SS.Nr-3. Describe <u>2D shapes</u> (<u>squares, circles, triangles, rectangles</u>) using informal and mathematical language: sides, corners; straight, flat, round</p>	<p>SS.KI-1. Identify <u>relative positions</u> of objects in space using <u>positional language</u> (e.g., besides, inside, next to, close to, above, below, apart).</p> <p>SS.KI-2. Identify and describe various <u>2D shapes</u> (<u>squares, circles, triangles, rectangles</u>) according to their <u>geometric properties</u>.</p> <p>SS.KI-3. Compare <u>2D shapes</u> according to <u>attributes</u> (length, color, texture, ability to roll) and <u>geometric properties</u> (Number of sides, vertices).</p> <p>SS.KI-4. <u>Compose</u> figures using 2D shapes</p> <p>SS.KI-5. Create and represent <u>three-dimensional shapes</u> (ball/sphere, square box/cube, tube/cylinder) using various manipulative materials (such as sticks, blocks, pipe cleaners, pattern blocks).</p> <p>SS.KI-6. With guidance, construct models in the world by building shapes from components.</p>	<p>SS.KII-1. Describe the <u>relative positions</u> of these objects using <u>positional language</u> (e.g., above, below, beside, in front of, behind, and next to).</p> <p>SS.KII-2. Identify <u>geometric shapes</u> as <u>two-dimensional</u> (lying in a plane, “flat”) or <u>three-dimensional</u> (“solid”).</p> <p>SS.KII-3. Identify and describe <u>2D</u> and <u>3D</u> shapes (<u>squares, circles, triangles, rectangles,</u>) according to their <u>geometric properties</u> (regardless of their orientation or overall size).</p> <p>SS.KII-4. Sort <u>2D</u> and <u>3D</u> shapes according to <u>attributes</u> (length, color, texture, ability to roll) and <u>geometric properties</u> (Number of sides, vertices, faces).</p> <p>SS.KII-5. Compare <u>2D</u> and <u>3D</u> shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides, vertices/corners, number of faces,</p>



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		<p>edges) and other attributes (e.g., having sides of equal length).</p> <p>SS.K12-6. Construct models in the world by building shapes from components.</p> <p>SS.K12-7. <u>Compose</u> simple shapes to form larger shapes. For example, “Can you join these two triangles with full sides touching to make a rectangle?”</p>
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SHAPE AND SPACE GLOSSARY

Attribute: A characteristic or feature of an object or shape (e.g., length, area, colour, texture, ability to roll). [ATTRIBUTE](#)

Compose: Order or arrange parts to form a whole. In geometry, two dimensional shapes and three dimensional objects can compose larger shapes and objects.

Geometric property: An attribute that remains the same for a class of objects or shapes. For example, all triangles have three sides.

[TWO DIMENSIONAL PROPERTIES](#) [THREE DIMENSIONAL PROPERTIES](#)

Geometric shapes: Shapes that are in two dimensions (pictures or drawings) and in three dimensions (objects). [GEOMETRIC SHAPES](#)

Positional language: Language that is used to describe the relative locations of objects and people. [POSITIONAL LANGUAGE](#)

Relative location: The position of something, such as a place, an object, or a point in comparison to something else.

Three dimensional shape (3D): An object that has the dimensions of length, width, and depth/height. [THREE DIMENSIONAL 1](#) [THREE DIMENSIONAL 2](#)

Two dimensional shape (2D): A shape that has the dimensions of length and width. [TWO DIMENSIONAL 1](#) [TWO DIMENSIONAL 2](#)



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PATTERN AND FUNCTION

Conceptual Understanding

By the end of preschool students will understand that:

- Patterns are predictable.
- There are specific ways we can describe patterns.
- Patterns always have an element of repetition.
- The core of a pattern helps us to predict what comes next.
- Changing something to the front of a pattern affects what we do in other parts.

Nursery	KG1	KG2
<p>PF.Nr-1. Identify and describe <u>repeating patterns</u> in everyday contexts (ex: <u>patterns</u> in nature such as morning-night, the four seasons, patterns on animals, the pattern on a piece of clothing; the pattern on the floor tiles)</p> <p>PF.Nr-2. Identify the smallest unit, <u>the core</u>, of simple repeating patterns (AB-AAB-ABB)</p> <p>PF.Nr-3. Extend simple repeating patterns including filling in missing <u>elements</u> of a repeated pattern</p> <p>PF.Nr-4. Notice and correct an error in simple repeating patterns.</p> <p>PF.Nr-5. Create simple repeating patterns</p>	<p>PF.KI-1. Identify and describe <u>repeating patterns</u> in everyday contexts (ex: the <u>pattern</u> in a calendar or in a schedule, life cycles..)</p> <p>PF.KI-2. Determine the unit, <u>the core</u>, and use it to extend repeated patterns (ABC, AABB, ABCD, etc)</p> <p>PF.KI-3. Use the unit, the core, to make and justify predictions and identify missing <u>elements</u> in repeated patterns</p> <p>PF.KI-4. Create repeating patterns</p> <p>PF.KI-5. <u>Represent</u> repeating patterns using movements, sounds, objects, shapes, and letters</p>	<p>PF.KII-1. Identify and describe the <u>pattern rule</u> in a variety of patterns (<u>linear growing patterns</u>, <u>numeric patterns</u>, <u>linear shrinking pattern</u>), including patterns in everyday contexts</p> <p>PF.KII-2. Identify the pattern of the counting system</p> <p>PF.KII-3. Determine <u>pattern rules</u> and use them to extend a variety of patterns</p> <p>PF.KII-4. Use <u>pattern rules</u> to make and justify predictions and identify missing elements in variety of patterns</p> <p>PF.KII-5. Describe and represent patterns within numbers up to 20</p> <p>PF.KII-6. Create and <u>represent</u> a variety of patterns using movements, sounds, objects, shapes, letters, and numbers</p>

PATTERN AND FUNCTION GLOSSARY

Element: A specific item (e.g., object, shape, number) in a pattern. The elements in the following pattern are a circle and a heart.



Growing pattern: A pattern that involves an increase from term to term (e.g., AB, AAB, AAAB). A growing pattern that has a constant increase from term to term, such as 3, 7, 11, 15,..., is an example of a linear growing pattern. A growing pattern that does not have a constant increase from term to term, such as 3, 6, 12, 2, ..., is an example of a non-linear pattern. [GROWING PATTERN](#)

Numeric pattern: A pattern composed of numbers (e.g., 5, 10, 15, 20). [NUMERIC PATTERNS](#)

Pattern: An arrangement of elements that can be defined by a rule. See [repeated patterns](#), [growing patterns](#), [numeric patterns](#), [shrinking patterns](#). [PATTERN 1](#) - [PATTERN 2](#)

Pattern core: A basic string of elements that repeats in a pattern. In an ABB, ABB, ABB pattern, the core is ABB. See also [element](#). [PATTERN CORE](#)

Pattern rule: A description of how a pattern repeats, grows or shrinks. For example, the pattern rule for the growing pattern 3, 7, 11, 15,... is “begins at 3, and repeatedly adds 4”.

Repeated pattern: A pattern in which a core unit repeats continuously (e.g., AB, AB, AB). See also [pattern core](#).

Represent: In patterning, to represent is to transform one representation of a pattern into another representation. For example, the pattern “red, blue, red blue, red, blue” could be translated to “clap, jump, clap, jump, clap, jump”; both patterns show an AB structure.

Shrinking pattern: A pattern that involves a regression (e.g., a decrease in the number of elements) from term to term (e.g., AAAABBB, AAABB, AAB, A).

NUMBER

Conceptual Understanding

By the end of preschool students will understand that:

- We use numbers in our lives to communicate/represent value.
- We can use objects, pictures, symbols, and/or words to represent number and quantity.
- There are many ways to count and each way to count has a proper sequence.
- Quantity can be represented in many ways.
- Numbers can be taken apart (decomposed) and put together (recomposed).
- Composing and decomposing numbers can help us solve problems.

Nursery	KG1	KG2
<p>A-Number Sense</p> <p>I. Counting</p> <p>N.AI. Nr-1. <u>Rote count</u> beyond 10 by ones</p> <p>N.AI. Nr-2. <u>Count</u> forward by 1s beginning from a given number within the known sequence 0-10 (instead of having to begin at one).</p> <p>N.AI. Nr-3. Count using <u>one-to-one correspondence</u> to tell the number of objects (5 things arranged in a line, a rectangular array, or as many as 3 things in a scattered configuration)</p> <p>N.AI. Nr-4. Given a number from 1–5, count out that many objects.</p> <p>II. Identifying, Reading, Representing, and Estimating Numbers</p> <p>N.AII.Nr-1. Identify and <u>read the whole number</u> up to and including 5 (<u>standard form</u>)</p> <p>N.AII.Nr-2. Write numbers from 0 to 5 (<u>standard form</u>)</p>	<p>A-Number Sense</p> <p>I. Counting</p> <p>N.AI.KI-1. <u>Rote count</u> beyond 20 by ones</p> <p>N.AI.KI-2. <u>Count</u> forward by 1s beginning from a given number within the known sequence 0-20 (instead of having to begin at one).</p> <p>N.AI.KI-3. Count using <u>one-to-one correspondence</u> to tell the number of objects (10 things arranged in a line, a rectangular array, or a circle, or as many as 7 things in a scattered configuration)</p> <p>N.AI.KI-4. Given a number from 1–10, count out that many objects.</p> <p>II. Identifying, Reading, Representing, and Estimating Numbers</p> <p>N.AII.KI-1. Identify and <u>read the whole number</u> up to and including 10 (<u>standard form</u> and <u>word form</u>)</p>	<p>A-Number Sense</p> <p>I. Counting</p> <p>N.AI.KII-1. <u>Rote count</u> to 100 by ones and tens</p> <p>N.AI.KII-2. Count forward by 1s beginning from a given number within the known sequence 0-100 (instead of having to begin at one)</p> <p>N.AI.KII-3. Count by 2s, 5s (<u>skip counting</u>)</p> <p>N.AI.KII-4. Count using <u>one-to-one correspondence</u> to tell the number of objects (20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration)</p> <p>N.AI.KII-5. Given a number from 1–20, count out that many objects.</p> <p>II. Identifying, Reading, Representing, and Estimating Numbers</p> <p>N.AII.KII-1. Identify and <u>read the whole number</u> up to and including 20 (<u>standard form</u> and <u>word form</u>)</p>



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<p>N.AII.Nr-3. <u>Represent a number</u> of objects 0-5 (with 0 representing a count of no objects) with a written <u>numeral</u> and <u>number finger count</u></p> <p>N.AII.Nr-4. Recognizing small <u>quantities</u> (0-3) without counting (<u>subitizing</u>)</p> <p>III. Ordering and Comparing</p> <p>N.AIII.Nr-1. Identify the numbers that are before and after a given number (0-5), demonstrating the understanding of 'one more than/one less than' relationship between <u>consecutive numbers</u>.</p> <p>N.AIII.Nr-2. <u>Order numbers</u> in an increasing and decreasing order (0-5)</p> <p>N.AIII.Nr-3. Identify whether the number of objects in one group is more than, less than, or the same as the number of objects in another group (groups up to 5)</p> <p>B-Operational Sense</p> <p>N.B.Nr-1. <u>Compose</u> and <u>decompose</u> whole numbers up to and including 5 using some tools and strategies (<u>concrete objects</u>, <u>five frames</u>, <u>numicons</u>)</p> <p>N.B.Nr-2. Use <u>concrete objects</u> to model real-world <u>addition</u> (putting together) and <u>subtraction</u> (taking away) problems up to and including 5</p>	<p>N.AII.KI-2. Write numbers from 0 to 10 (<u>standard form</u>).</p> <p>N.AII.KI-3. Recognize and name numbers from 0-10 in word form.</p> <p>N.AII.KI-4. <u>Represent a number</u> of objects 0–10 (with 0 representing a count of no objects) in a variety of ways (<u>tallies</u>, <u>numerals</u>, <u>five frames</u>, <u>number finger count</u>, symbols, <u>ten frames</u>, <u>numicon</u>)</p> <p>N.AII.KI-5. Recognizing <u>quantities</u> (0-5) without counting (<u>subitizing</u>)</p> <p>N.AII.KI-6. Identify and use <u>ordinal numbers</u> first through fifth</p> <p>III. Ordering and Comparing</p> <p>N.AIII.KI-1. Identify the numbers that are before and after a given number (0-10), demonstrating the understanding of the 'one more than/one less than' relationship between <u>consecutive numbers</u>.</p> <p>N.AIII.KI-2. <u>Order numbers</u> in an increasing and decreasing order (0-10)</p> <p>N.AIII.KI-3. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (groups up to 10)</p> <p>B-Operational Sense</p> <p>N.B.KI-1. <u>Compose</u> and <u>decompose</u> whole numbers up to an including 10 using a variety of tools and strategies (<u>concrete objects</u>, <u>number bonds</u>, <u>numicons</u>)</p> <p>N.B.KI-2. Use <u>concrete objects</u> to model real-world <u>addition</u> (putting together)</p>	<p>N.AII.KII-2. Write numbers from 0 to 20 (standard form) and from 0-10 in word form.</p> <p>N.AII.KII-3. <u>Represent a number</u> of objects 0–20 (with 0 representing a count of no objects) using a variety of ways (<u>tallies</u>, <u>numerals</u>, <u>five frames</u>, <u>number finger count</u>, symbols, <u>ten frames</u>, <u>numicon</u>, position on a <u>number line</u>)</p> <p>N.AII.KII-4. Recognizing small <u>quantities</u> (0-10) without counting (<u>subitizing</u>)</p> <p>N.AII.KII-5. Identify and use <u>ordinal numbers</u> first through tenth</p> <p>N.AII.KII-6. Write <u>ordinal numbers</u> first through tenth</p> <p>III. Ordering and Comparing</p> <p>N.AIII.KII-1. Identify the numbers that are before and after a given number (0-20), demonstrating the understanding of the 'one more than/one less than' relationship between <u>consecutive numbers</u>.</p> <p>N.AIII.KII-2. <u>Order numbers</u> in an increasing and decreasing order (0-20)</p> <p>N.AIII.KII-3. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (groups up to 20)</p> <p>B-Operational Sense</p> <p>N.B.KII-1. <u>Decompose</u> numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or <u>equation</u> (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).</p>
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	and <u>subtraction</u> (taking away) problems up to an including 10	<p>N.B.KII-2. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or <u>equation</u> (<u>Compose numbers</u>)</p> <p>N.B.KII-3. <u>Compose</u> and <u>decompose</u> numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or <u>equation</u> (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.</p> <p>N.B.KII-4. Represent <u>addition</u> and <u>subtraction</u> with objects, fingers, mental images, drawings, verbal explanations, or <u>equations</u></p> <p>N.B.KII-5. Solve addition and subtraction word problems, and add and subtract within 20, e.g., by using objects or drawings to represent the problem</p>
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NUMBER GLOSSARY

Addition: The process of putting together two or more numbers or quantities to get a total sum. [ADDITION](#)

Compose: Order or arrange parts to form a whole. In geometry, two dimensional shapes and three dimensional objects can compose larger shapes and objects. [COMPOSE NUMBERS](#)

Concrete objects : Hands on manipulatives as opposite to pictures, numbers or words. [CONCRETE OBJECTS](#)

Consecutive numbers: Numbers that follow an unbroken number sequence. [CONSECUTIVE NUMBERS](#)



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Count: Recite a sequence of numbers in the correct order without referring to objects or quantities. COUNT
Decompose: The taking apart of numbers into two or more parts. For example, 13 can be decomposed as 10 and 3 or 6 and 7, or 6 and 6 and 1, and so on. DECOMPOSE NUMBERS
Equation: A mathematical statement that contains an equal sign showing that two expressions are equal (e.g. $5+6=11$ or $5+5+1=11$) EQUATION
Five frame: A 1 by 5 array onto which counters or dots are placed, to help students relate a given number to 5 (e.g., 7 is 2 more than 5) and recognize the importance of 5 as an anchor in our number system. FIVE FRAME
Number bond: A visual representation that shows the pairs of numbers that make up a given number. Also referred to as “number pairs”. NUMBER BONDS
Number finger count: A visual representation of numbers using the hands. NUMBER FINGER COUNT
Number line: A line that represents a set of real numbers using a set of points. The increments on the number line reflect the scale. NUMBER LINE
Numeral: A symbol or name that stands for a number (e.g., 3, 49, and twelve are all numerals). NUMERAL
Numicon: A system of flat plastic shapes with holes in them. Each shape represents a number from one to 10. NUMICON 1 , NUMICON 2
One-to-one correspondence: The correspondence of one object to one symbol or picture. In counting, one-to-one correspondence is the idea that each object being counted must be given only one count. ONE-TO-ONE CORRESPONDENCE
Order numbers: Ordering numbers according to their “how muchness”. Numbers can be ordered in ascending order – from least to greatest – or can be ordered in descending order – from greatest to least. ORDER NUMBERS ORDER
Ordinal numbers: Numbers that talk about the position of objects. See Cardinal vs Ordinal . ORDINAL NUMBERS 1 ORDINAL NUMBERS 2
Reading numbers: A skill that involves interpreting numbers as a quantity when they are expressed in words or numerals, or represented using physical quantities or diagrams.
Representing numbers: Numbers can be represented in a variety of ways including the use of counts such as tallies, position/distance on a number line, in words, and using mathematical learning tools such as ten frames. REPRESENTING NUMBERS
Rote count: The ability to recite numbers in order from memory. ROTE COUNT
Skip count: Count forward or backward by multiples. SKIP COUNT



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Standard form: A way in which the concept of numbers can be written in decimal notation (e.g. 37) / It is different from the word form (e.g., thirteen) or expanded form (10 + 3). [STANDARD FORM US DEFINITION](#)

Subitizing: Being able to recognize the number of objects at a glance without having to count all the objects, such as recognizing the configuration of the five dots on a die representing 5. [SUBITIZING](#)

Subtraction: The process to take away one quantity from another. [SUBTRACTION](#)

Tallies/Tally mark: A visual representation of groups of 5. One vertical line is made for each of the first four numbers; the fifth number is represented by a diagonal line across the previous four. [TALLY MARK](#)

Ten frame: A 2 by 5 array onto which counters or dots are placed to help students relate a given number 10 10 (e.g. 7 is 3 less than 10) and recognize the importance of using 10 as an anchor when adding and subtracting. [TEN FRAMES](#)

Whole numbers: A positive number, including zero, that has no decimal or fractional parts; for example, 1 5, 7, 23,.... [WHOLE NUMBERS](#)

Word form: A way in which the concept of numbers can be written. It involves expressing numbers using words rather than a standard notation. [WORD FORM](#)

Quantity: The “how muchness” of a number. An understanding of quantity helps students estimate and reason with numbers and is an important prerequisite to understanding place value, the operations and fractions. [QUANTITY](#)



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