



## Suggested List of Mathematical Language

### Prekindergarten

#### Problem Solving

act out  
compare  
explain  
explore  
problem

#### Reasoning and Proof

about  
almost  
guess

#### Communication

draw  
explain  
idea  
organize  
question  
share

#### Connections

above  
after  
all  
before  
below  
numeral

#### Representation

design  
show

#### Number Sense and Operations

add  
count  
equal  
first

group  
how many  
last  
more/most  
plus  
some  
together

#### Algebra

next  
pattern

#### Geometry

alike  
circle  
inside  
match  
same  
shape  
size  
square  
triangle

#### Measurement

big/bigger/biggest  
calendar  
day  
large/larger/largest  
long/longer/longest  
match  
measure  
night  
small/smaller/smallest  
tall/taller/tallest

#### Statistics and Probability

attribute  
chart

color (as an attribute)  
different  
graph  
pictograph  
sort

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Number Sense and Operations</b>
<b>Essential Questions: What do numbers mean?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.N.1 PK.N.2 PK.N.3 PK.N.4 PK.N.5 PK.N.6 PK.N.7 PK.N.8 PK.N.9	How do I count? How do I draw to show how many? What are numbers? How do I know what is first? How do I know what is last? How can I show more? How can I show less?	Count the items in a collection and know the last counting word tells how many items are in the collection. Count out a collection of a specified size (1-10). Verbally count by 1's to 10 Explore the different representations of a group of objects. Draw picture or other informal symbols to represent a spoken number up to 5. Draw pictures or other informal symbols to represent how many in a collection up to 5. Recognize numerals 0-5. Use and understand the terms first and last. Develop addition and subtraction readiness with sums up to 4 and subtraction involving 1-4 items using manipulatives.	Drawing sets Creating sets Using manipulatives to represent numbers Counting calendar Counting songs Counting games Counting centers Creating numerals with various mediums Daily routine (line, schedule)	Teacher observation Student portfolio

<b>Connections to Text (Resources)</b>	<b>5 Little Monkeys, 5 Green and Speckled Frogs</b>
<b>Time: On-going</b>	
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary: Act out, zero, one, two, three, four, five, add, plus, more, first, last, number, calendar, chart</b>	

**Process Strands: Problem Solving, Reasoning & Proof, Communication, Connection, Representation**

**Topic: Problem Solving**

**Essential Questions: How Do I Solve Problems?**

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.PS.1 PK.PS.2 PK.PS.3 PK.PS.4 PK.PS.5 PK.PS.6 PK.PS.7 PK.PS.8 PK.PS.9 PK.PS.10	How do I explore a problem? How do I act out a problem? How can I count to solve a problem? How do I use manipulatives to explain a problem? How can I draw a picture to design a problem?	Explore, examine, and make observations about a social problem or mathematical situation. Interpret information correctly, identify the problem, and generate possible solutions. Act out or model with manipulatives, activities involving mathematical content from literature and/or story telling Formulate problems and solutions from everyday situations Use informal counting strategies to find solutions Experience teacher-directed questioning process to understand problems Compare and discuss ideas for solving a problem with teacher and/or students to justify their thinking Use manipulatives to model action and problems Use drawings/pictures to model the action in problems Explain to others how a problem was solved giving strategies	Drawing sets Creating sets Using manipulatives to represent numbers and problems Counting games Counting centers Daily routine (line, schedule) Teacher directed discussion	Teacher observation Student portfolio

**Connections to Text (Resources)** Various trade books

**Time: On-going**

**Connections to Technology:** Computer Lab, various websites

**Key Vocabulary:** Act out, explain, organize, explore, problem, design, show

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Reasoning and Proof</b>
<b>Essential Questions: How do I solve problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.RP.1 PK.RP.2 PK.RP.3 PK.RP.4	How do I tell if something is true or false? What is a guess? How do I guess? How do I listen to others?	Understand that mathematical statements can be true or false Investigate the use of knowledgeable guessing as a mathematical tool Explore guesses using a variety of objects and manipulatives Listen to claims other students make	Using manipulatives to show something is true or false Calendar Songs Games Centers Daily routine	Teacher observation Student portfolio

<b>Connections to Text (Resource)</b>	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary: Guess, explain, question, share, idea, show</b>	

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Communication</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.CM.1 PK.CM.2 PK.CM.3 PK.CM.4 PK.CM.5	How do I share my ideas? How do I show my ideas? How can I listen?	Understand how to organize their thought processes with teacher guidance Share mathematical ideas through the manipulation of objects, drawings, pictures and verbal explanations Listen to solutions shared by other students Formulate mathematically relevant questions with teacher guidance Use appropriate mathematical terms, vocabulary, and language	Using manipulatives Counting calendar Counting songs Counting games Counting centers Daily routine Large group time Story telling	Teacher observation

<b>Connections to Text (Resources)</b>	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary: Explore, explain, organize, show, question, share</b>	

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Connections</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.CN.1 PK.CN.2 PK.CN.3	How can I use math?	Recognize the presence of mathematics in their daily lives Use counting strategies to solve problems in their daily lives Recognize and apply mathematics to objects and pictures	Drawing sets Creating sets Using manipulatives to represent numbers Calendar Songs Games Centers Creating numerals with various mediums Daily routine	Teacher observation Student portfolio

<b>Connections to Text (Resources)</b>	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary: Explain, compare, explore, show, about, ideas, question, share, group</b>	

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Representation</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.R.1 PK.R.2 PK.R.3 PK.R.4 PK.R.5	How do I act out a problem? How do I draw a problem? How do I show a problem?	Use multiple representation including verbal language, acting out or modeling a situation, and drawing pictures as representations Use standard and non-standard representations Use objects to show and understand physical phenomena Use objects to show and understand social phenomena Use objects to show and understand phenomena	Drawing sets Creating sets Dividing sets Using manipulatives to represent numbers Calendar Games Math centers Creating numerals with various mediums Daily routine	Teacher observation Student portfolio

<b>Connections to Text (Resources)</b>	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary: Draw, design, show, organize, share, explain, explore, act out, graph, sort, color</b>	



<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Algebra</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.A.1	How do I show patterns?	Duplicate simple patterns using concrete objects	Drawing patterns Copying patterns Using manipulatives to represent numbers Calendar Games Centers	Teacher observation Student portfolio

<b>Connections to Text (Resources)</b>	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary: Next, pattern</b>	

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Geometry</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.G.1 PK.G.2	How are shapes the same? How are shapes different? How do I play with shapes?	Match shapes, first with same size and orientation, then with different sizes and orientation Informally play with solids	Manipulatives Block Center Lego building Shape Journals Shape games (Hokey Pokey) Patterning Activities Shape Safari (I Spy) Shape Skill Packets Lacing Cards Matching Games File Folder Games Shape Building (parquetry, pattern blocks) Finger Painting Easel Painting Stencils	Teacher observation Student portfolio

<b>Connections to Text (Resources)</b> Shape Big Books; Bean Bag Songs	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary:</b> alike, circle, same, inside, match, shape, size, square, triangle	

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Measurement</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.M.1 PK.M.2	How is something bigger? How is something longer? How is something taller? How can I tell day from night?	Develop language such as bigger, longer, and taller to discuss length Relate specific times such as day and night	Weather Chart Block Measurement Center Literacy: Books Three Bear Counters Sorting Activities Sequencing Cards File Folder Games Comparing objects – What is bigger? Longer? Taller? Growth Chart Growth Chart Journal Calendar	Teacher observation Student portfolio

<b>Connections to Text (Resources)</b> Zach’s Alligator; Stلالuna; Kissing Hand;	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary:</b> big, bigger, biggest, calendar, day, large, larger. Largest, long, longer, longest, match, measure, night, small, smaller, smallest, tall, taller, tallest	

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Statistics and Probability</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.S.1 PK.S.2 PK.S.3 PK.S.4	How do I sort? How are things the same color? How are things the same shape? How are things the same size? How do I graph? How do I know if a group has more or less?	Sort and organize objects by one attribute Use physical objects to make graphs Count and compare groups formed Describe the attributes of objects	Weather Chart File Folders Graphing Activities Sorting Trays Manipulative Sorting Color UNO Student Sorting (Letters in Name, ex.) Calendar Snack Sorting Show and Tell Sorting Shape Builders Kitchen Center Perfection CandyLand	Teacher observation Student portfolio

<b>Connections to Text (Resources)</b> Goldilocks and the Three Bears, Brown Bear, Brown Bear, Shape Big Books <b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>
<b>Key Vocabulary: attribute, chart, color, different, graph, sort</b>

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Representation</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.R.1 PK.R.2 PK.R.3 PK.R.4 PK.R.5	How do I act out a problem? How do I draw a problem? How do I show a problem?	Use multiple representation including verbal language, acting out or modeling a situation, and drawing pictures as representations Use standard and non-standard representations Use objects to show and understand physical phenomena Use objects to show and understand social phenomena Use objects to show and understand phenomena	Drawing sets Creating sets Dividing sets Using manipulatives to represent numbers Calendar Games Math centers Creating numerals with various mediums Daily routine	Teacher observation Student portfolio

<b>Connections to Text (Resources)</b>	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary: Draw, design, show, organize, share, explain, explore, act out, graph, sort, color</b>	

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Algebra</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.A.1	How do I show patterns?	Duplicate simple patterns using concrete objects	Drawing patterns Copying patterns Using manipulatives to represent numbers Calendar Games Centers	Teacher observation Student portfolio

<b>Connections to Text (Resources)</b>	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary: Next, pattern</b>	

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Communication</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.CM.1 PK.CM.2 PK.CM.3 PK.CM.4 PK.CM.5	How do I share my ideas? How do I show my ideas? How can I listen?	Understand how to organize their thought processes with teacher guidance Share mathematical ideas through the manipulation of objects, drawings, pictures and verbal explanations Listen to solutions shared by other students Formulate mathematically relevant questions with teacher guidance Use appropriate mathematical terms, vocabulary, and language	Using manipulatives Counting calendar Counting songs Counting games Counting centers Daily routine Large group time Story telling	Teacher observation

<b>Connections to Text (Resources)</b>	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary: Explore, explain, organize, show, question, share</b>	

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Geometry</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.G.1 PK.G.2	How are shapes the same? How are shapes different? How do I play with shapes?	Match shapes, first with same size and orientation, then with different sizes and orientation Informally play with solids	Manipulatives Block Center Lego building Shape Journals Shape games (Hokey Pokey) Patterning Activities Shape Safari (I Spy) Shape Skill Packets Lacing Cards Matching Games File Folder Games Shape Building (parquetry, pattern blocks) Finger Painting Easel Painting Stencils	Teacher observation Student portfolio

<b>Connections to Text (Resources)</b> Shape Big Books; Bean Bag Songs	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary:</b> alike, circle, same, inside, match, shape, size, square, triangle	



<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Measurement</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.M.1 PK.M.2	How is something bigger? How is something longer? How is something taller? How can I tell day from night?	Develop language such as bigger, longer, and taller to discuss length Relate specific times such as day and night	Weather Chart Block Measurement Center Literacy: Books Three Bear Counters Sorting Activities Sequencing Cards File Folder Games Comparing objects – What is bigger? Longer? Taller? Growth Chart Growth Chart Journal Calendar	Teacher observation Student portfolio

<b>Connections to Text (Resources)</b> Zach’s Alligator; Stellanuna; Kissing Hand;	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary:</b> big, bigger, biggest, calendar, day, large, larger. Largest, long, longer, longest, match, measure, night, small, smaller, smallest, tall, taller, tallest	

**Process Strands: Problem Solving, Reasoning & Proof, Communication, Connection, Representation**

**Topic: Number Sense and Operations**

**Essential Questions: What do numbers mean?**

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.N.1 PK.N.2 PK.N.3 PK.N.4 PK.N.5 PK.N.6 PK.N.7 PK.N.8 PK.N.9	How do I count? How do I draw to show how many? What are numbers? How do I know what is first? How do I know what is last? How can I show more? How can I show less?	Count the items in a collection and know the last counting word tells how many items are in the collection. Count out a collection of a specified size (1-10). Verbally count by 1's to 10 Explore the different representations of a group of objects. Draw picture or other informal symbols to represent a spoken number up to 5. Draw pictures or other informal symbols to represent how many in a collection up to 5. Recognize numerals 0-5. Use and understand the terms first and last. Develop addition and subtraction readiness with sums up to 4 and subtraction involving 1-4 items using manipulatives.	Drawing sets Creating sets Using manipulatives to represent numbers Counting calendar Counting songs Counting games Counting centers Creating numerals with various mediums Daily routine (line, schedule)	Teacher observation Student portfolio

**Connections to Text (Resources): 5 Little Monkeys, 5 Green and Speckled Frogs**

**Time: On-Going**

**Connections to Technology: Computer Lab, various websites**

**Key Vocabulary: Act out, zero, one, two, three, four, five, add, plus, more, first, last, number, calendar, chart**

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Problem Solving</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.PS.1 PK.PS.2 PK.PS.3 PK.PS.4 PK.PS.5 PK.PS.6 PK.PS.7 PK.PS.8 PK.PS.9 PK.PS.10	How do I explore a problem? How do I act out a problem? How can I count to solve a problem? How do I use manipulatives to explain a problem? How can I draw a picture to design a problem?	Explore, examine, and make observations about a social problem or mathematical situation. Interpret information correctly, identify the problem, and generate possible solutions. Act out or model with manipulatives, activities involving mathematical content from literature and/or story telling Formulate problems and solutions from everyday situations Use informal counting strategies to find solutions Experience teacher-directed questioning process to understand problems Compare and discuss ideas for solving a problem with teacher and/or students to justify their thinking Use manipulatives to model action and problems Use drawings/pictures to model the action in problems Explain to others how a problem was solved giving strategies	Drawing sets Creating sets Using manipulatives to represent numbers and problems Counting games Counting centers Daily routine (line, schedule) Teacher directed discussion	Teacher observation Student portfolio

<b>Connections to Text (Resources) Various trade books</b>	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary: Act out, explain, organize, explore, problem, design, show</b>	

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Reasoning and Proof</b>
<b>Essential Questions: How do I solve problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.RP.1 PK.RP.2 PK.RP.3 PK.RP.4	How do I tell if something is true or false? What is a guess? How do I guess? How do I listen to others?	Understand that mathematical statements can be true or false Investigate the use of knowledgeable guessing as a mathematical tool Explore guesses using a variety of objects and manipulatives Listen to claims other students make	Using manipulatives to show something is true or false Calendar Songs Games Centers Daily routine	Teacher observation Student portfolio

<b>Connections to Text (Resource)</b>	<b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>	
<b>Key Vocabulary: Guess, explain, question, share, idea, show</b>	

<b>Process Strands: Problem Solving, Reasoning &amp; Proof, Communication, Connection, Representation</b>
<b>Topic: Statistics and Probability</b>
<b>Essential Questions: How Do I Solve Problems?</b>

<b>Performance Indicators</b>	<b>Guided Questions</b>	<b>Essential Knowledge &amp; Skills</b>	<b>Classroom Ideas (Instructional Strategies)</b>	<b>Assessment Ideas (Evidence of Learning)</b>
PK.S.1 PK.S.2 PK.S.3 PK.S.4	How do I sort? How are things the same color? How are things the same shape? How are things the same size? How do I graph? How do I know if a group has more or less?	Sort and organize objects by one attribute Use physical objects to make graphs Count and compare groups formed Describe the attributes of objects	Weather Chart File Folders Graphing Activities Sorting Trays Manipulative Sorting Color UNO Student Sorting (Letters in Name, ex.) Calendar Snack Sorting Show and Tell Sorting Shape Builders Kitchen Center Perfection CandyLand	Teacher observation Student portfolio

<b>Connections to Text (Resources)</b> Goldilocks and the Three Bears, Brown Bear, Brown Bear, Shape Big Books <b>Time: On-going</b>
<b>Connections to Technology: Computer Lab, various websites</b>
<b>Key Vocabulary: attribute, chart, color, different, graph, sort</b>