

Problem Solving Strand

Students will build new mathematical knowledge through problem solving.

PK.PS.1 Explore, examine, and make observations about a social problem or mathematical situation

PK.PS.2 Interpret information correctly, identify the problem, and generate possible solutions

Students will solve problems that arise in mathematics and in other contexts.

PK.PS.3 Act out or model with manipulatives activities involving mathematical content from literature and/or story telling

PK.PS.4 Formulate problems and solutions from everyday situations (e.g., as counting the number of children in the class or using the calendar to teach counting)

Students will apply and adapt a variety of appropriate strategies to solve problems.

PK.PS.5 Use informal counting strategies to find solutions

PK.PS.6 Experience teacher-directed questioning process to understand problems

PK.PS.7 Compare and discuss ideas for solving a problem with teacher and/or students to justify their thinking

PK.PS.8 Use manipulatives (e.g., tiles, blocks) to model the action in problems

PK.PS.9 Use drawings/pictures to model the action in problems

Students will monitor and reflect on the process of mathematical problem solving.

PK.PS.10 Explain to others how a problem was solved, giving strategies

Reasoning and Proof Strand

Students will recognize reasoning and proof as fundamental aspects of mathematics.

PK.RP.1 Understand that mathematical statements can be true or false

Students will make and investigate mathematical conjectures.

PK.RP.2 Investigate the use of knowledgeable guessing as a mathematical tool

PK.RP.3 Explore guesses, using a variety of objects and manipulatives

Students will develop and evaluate mathematical arguments and proofs.

PK.RP.4 Listen to claims other students make

Communication Strand

Students will organize and consolidate their mathematical thinking through communication.

PK.CM.1 Understand how to organize their thought processes with teacher guidance

Students will communicate their mathematical thinking coherently and clearly to peers, teachers, and others.

PK.CM.2 Share mathematical ideas through the manipulation of objects, drawings, pictures, and verbal explanations

Students will analyze and evaluate the mathematical thinking and strategies of others.

PK.CM.3 Listen to solutions shared by other students

PK.CM.4 Formulate mathematically relevant questions with teacher guidance

Students will use the language of mathematics to express mathematical ideas precisely.

PK.CM.5 Use appropriate mathematical terms, vocabulary, and language

Connections Strand

Students will recognize and apply mathematics in contexts outside of mathematics.

PK.CN.1 Recognize the presence of mathematics in their daily lives

PK.CN.2 Use counting strategies to solve problems in their daily lives

PK.CN.3 Recognize and apply mathematics to objects and pictures

Representation Strand

Students will create and use representations to organize, record, and communicate mathematical ideas.

PK.R.1 Use multiple representations, including verbal language, acting out or modeling a situation, and drawing pictures as representations

PK.R.2 Use standard and nonstandard representations

Students will use representations to model and interpret physical, social, and mathematical phenomena.

PK.R.3 Use objects to show and understand physical phenomena (e.g., guess the number of cookies in a package)

PK.R.4 Use objects to show and understand social phenomena

(e.g., count and represent sharing cookies between friends)

PK.R.5 Use objects to show and understand mathematical phenomena
(e.g., draw pictures to show a story problem, show number
value using fingers on your hand)

Number Sense and Operations Strand

Students will understand numbers, multiple ways of representing numbers, relationships among numbers, and number systems.

Number Systems PK.N.1 Count the items in a collection and know the last counting word tells how many items are in the collection (1 to 10)

PK.N.2 Count out (produce) a collection of a specified size 1 to 10

PK.N.3 Verbally count by 1's to 10

PK.N.4 Explore the different representations of a group of objects

PK.N.5 Draw pictures or other informal symbols to represent a spoken number up to 5

PK.N.6 Draw pictures or other informal symbols to represent how many in a collection up to 5

PK.N.7 Recognize numerals (0-5)

PK.N.8 Use and understand the terms *first* and *last*

Students will understand meanings of operations and procedures, and how they relate to one another.

Operations PK.N.9 Develop addition and subtraction readiness with sums up to 4 and subtraction involving one to four items, using manipulatives

*Organization and
Display of Data*

PK.S.1 Sort and organize objects by one attribute (e.g., color, size, or shape)

PK.S.2 Use physical objects to make graphs

Analysis of Data

PK.S.3 Count and compare groups formed (quantify groups formed)

PK.S.4 Describe the attributes of objects