



THE STATE EDUCATION DEPARTMENT / THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234

Curriculum, Instruction, and Instructional Technology Team - Room 320 EB

www.emsc.nysed.gov/ciaj

email: emscnysmath@mail.nysed.gov

Prekindergarten

Sample Tasks for PreK-8, developed by New York State teachers, are clarifications, further explaining the language and intent of the associated Performance Indicators. These tasks are not test items, nor are they meant for students' use.

Strands	
Process	Content
Problem Solving	Number Sense and Operations
Reasoning and Proof	Algebra
Communication	Geometry
Connections	Measurement
Representation	Statistics and Probability

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.1a

Tell the class that they are going to have a teddy bear picnic. Have the students sit with their teddy bears around a blanket. Have students take turns distributing plates, cups, and napkins. Count aloud as each item is given to the students and bears.

PK.PS.1b

As a class, prepare cards with symbols to represent the weather. Have students place the appropriate card on a graph that is marked with each day of the week. Discuss the weather graph with the class.

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

PK.PS.2a

Create a chart with activity choices displayed. Have the students count the number of activities. Then have each student choose an activity. Discuss how there are too many students for each of the activities, by counting (e.g., 10 children want to paint, but the classroom has three easels). Encourage students to find 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.3a

Read and act out counting rhymes such as those found in *Five Speckled Frogs and Other Counting Rhymes* by Steve Augarde.

PK.PS.3b

Read *Ten Little Rabbits* by Virginia Grossman and Sylvia Long, and other books that involve counting.

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)

PK.PS.4a

Have students paint or draw pictures of a family from a storybook (people or animals). When completed, ask each student to count the number of people or animals in the family. On chart paper, the teacher should record the data from each student that tells how many people or animals are in each family.

PK.PS.4b

Use symbols to indicate if it is a sunny, cloudy, rainy, or snowy day. On Thursdays, develop addition and subtraction problems from the data for Monday through Thursday (i.e., 2 sunny days + 2 cloudy days = 4 days).

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.5a

Divide the class into groups of five. Have marshmallows, toothpicks, and black markers available on a tray for making snowmen. Count aloud as the items are distributed. Let students take turns giving each student at their table a marshmallow until each student has three. Repeat giving each student two toothpicks for arms and then a marker to draw eyes and a mouth. Assemble the snowman, using glue to keep the marshmallows together or run an additional toothpick through all three marshmallows. Have students put a toothpick on either side of the middle marshmallow. Finish by drawing eyes and a mouth on the top marshmallow.

PK.PS.5b

Use sponge shapes and paint to make pictures which represent the number that is rolled with a 0 - 5 number cube.

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

PK.PS.6a

During informal play with building blocks, encourage stacking different blocks, posing questions about the size and weight of the blocks, which can lead to stronger and taller structures.

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

PK.PS.7a

Label one chart *day* and the other chart *night*. Discuss the different activities people do and draw illustrations on either the *day* or *night* chart.

PK.PS.7b

Have a wide variety of objects to be sorted (e.g., plastic fruits and vegetables, small cars, feathers, colored pipe cleaners, etc.). Place sheets of colored construction paper on tables and ask students to sort the objects by color, size, shape, and other attributes. Have students explain why they placed the different objects on specific pieces of colored paper.

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

PK.PS.8a

Read aloud nursery rhymes such as *Baa, Baa, Black Sheep*. Provide three bags to represent the bags of wool. Have students act out the rhyme.

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

PK.PS.9a

Sing *The Farmer in the Dell*. Have different students make drawings of the action in each stanza. Have students display their work and identify which picture should be first and which should be last. Do the same for *Head and Shoulders, Knees and Toes, This Old Man* and other songs that have first and last items.

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

PK.PS.10a

Use attribute blocks to set up a row of three different shapes of the same size on the floor. Give individual students duplicate shapes. Have the students match the shapes on the floor and explain their matches. Use different size attribute blocks placed in different orientations.

[Back to top](#)

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

PK.RP.1a

Show two dominoes - one with a configuration of four dots and zero dots and the other with three dots and one dot. Make the statement that the two dominoes do not represent the same number. Provide manipulatives for the students to determine if the statement is true or false.

PK.RP.1b

Make the following statement:

Three of the same object is longer than two of the same object.

Have students demonstrate with manipulatives whether the statement is 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.2a

Create a guessing jar. Fill the jar with 1 - 10 objects (e.g., ping pong balls, teddy bear counters, large beads, etc.). Have students guess how many objects are in the jar before taking them out. Count aloud as the objects are removed from the jar. Count them again as you place them back into the jar.

PK.RP.2b

Using a guessing jar, present objects to the students that would fill the jar, using 1 - 10 objects (e.g., linking cubes, large jacks, glue sticks etc.). Have students guess how many objects can fit into the jar.

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

PK.RP.3a

Provide objects such as a broom, snow shovel, wooden spoon, and pointer. Use various manipulatives (linking cubes, wooden cubes, craft sticks, toothpicks, etc.) to measure the length of the objects. Count together how many linking cubes or craft sticks represent the length of the object. Have students guess how many toothpicks or wooden cubes would represent the length of each object.

PK.RP.3b

Have students count aloud as you set up a series of 10 bags. Then have students count as you place five red wooden cubes and five blue wooden cubes in each bag. Pass out recording strips with 10 squares on the strip. Have the students work in pairs: one student chooses a cube and the other student records the result (red or blue) on the recording strip. Have the students reverse roles.

Students will develop and evaluate mathematical arguments and proofs.

PK.RP.4 Listen to claims other students make

Divide the class into small groups. Have each student roll a 0 - 5 number cube. Have various objects available (plastic milk tops, keys, shells, pieces of colored straws, etc.). Have each student create a group of objects that represents the numeral rolled. Then have them draw the representation and related numeral.

[Back to top](#)

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

PK.CM.1a

Tell a short story about children going to a playground together. Three of the children play on the swings while one is on the slide. Ask the following question:

How many children are at the playground?

Guide the students through the steps of adding $3 + 1$ using manipulatives. Vary the story within sums up to four.

PK.CM.1b

Tell a story about children enjoying a wintry day at a park. Three of the children are sledding when one of them has to go home. Ask the following question:

How many children are left sledding?

Guide the students through the steps of subtracting $3 - 1$ using manipulatives. Vary the story involving, two, three, or four numbers.

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

PK.CM.2a

Provide students with musical instruments (e.g., triangle, tambourine, bells, drum, sand block, wood block, rhythm stick, maracas). Allow students to choose a number card from 0 - 5, identify the numeral, and play

their chosen instrument with the appropriate number of beats indicated on the number card. Have students make a drawing of their instrument with strike marks to show how many beats they played.

PK.CM.2b

Label containers by color (red, blue, yellow, green). Divide the class into pairs. Have students sort colored buttons (red, blue, yellow, green) by taking turns spinning a 4-color spinner. Students should name the color the spinner lands on and place the correct color button in the correctly labeled container.

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

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

PK.CM.3a

Provide students with paper geometric shapes. Have students make a pattern by gluing the shapes on a strip of paper. Then have them pass their papers to a partner who duplicates the pattern on another sheet of paper.

PK.CM.3b

Discuss the different activities that students do at school (painting, singing, etc.). Guide the students into making a graph that uses representations of favorite activities. Help students make a pictograph. Discuss what the graphs show.

PK.CM.3c Divide the class into small groups. Provide each group with a box of objects of different colors (e.g., marbles, discs, crayons, ribbons). Ask each group to sort the objects by color. Then ask each group to count and compare the boxes and discuss the following questions:

How many red objects do you have?

How many blue objects do you have?

Which group had the highest number of red objects?

PK.CM.3d

Provide small individual containers with a few objects (e.g., small plastic toy animals, round wooden beads, crayons, feathers). While taking turns, have students describe the attributes of the objects in their containers to a small group of students.

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

PK.CM.4a

Have students take turns choosing a familiar object from a box to be the *mystery object*. With guidance from the teacher, the class should ask questions about the *mystery object* until they have correctly guessed the mystery object.

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

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

PK.CM.5a

Read *A Pair Of Socks* by Stuart Murphy. Provide students with a wide variety of socks to sort. Students should use the words *sort* and *attribute* as they explain their choices.

[Back to top](#)

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.1a

Make paper magnifying glasses for each student. In small groups, tour the school. Search for a specified numeral throughout the school.

PK.CN.1b

Send home worksheets which have a circle, triangle, or square as the center. Have students find objects in their homes that match the circle, triangle, or square and draw a picture of the object.

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

PK.CN.2a

Offer various snacks (i.e., carrot sticks, apple pieces, raisins etc.). Have students raise their hands for their snack choice. Count out loud together as the designated snack is given to the students with their hands up.

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

PK.CN.3a Distribute various amounts, from 1 - 10, of themed paper plates to the class. Display a particular plate and ask students with the displayed plate to stand in front of the class. Have a student count the number of plates held by those students. Repeat for each different design.

PK.CN.3b

Display the paintings *I and the Village* by Chagall, *Dream City* by Klee, and *Girl With A Boat* by Picasso. Have students locate geometric shapes of the circle, square, and triangle in the paintings. Encourage students to create their own 'Cubism' paintings.

[Back to top](#)

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.1a

Create a simple pattern for students to duplicate with linking cubes or other manipulatives. Have students talk about the pattern as they duplicate the model. Have the students draw a picture of the pattern.

PK.R.1b

Have students make a building using blocks. Have other students gather around to hear the builder tell a story of what was made and then make a drawing or painting of the structure.

PK.R.2 Use standard and nonstandard representations

PK.R.2a

Place a variety of objects and cut outs representing numbers from 1 to 10 (e.g., playing cards, dominoes, cut outs from newspapers, magazines, boxes, a blank number cube with one side marked, miniature race car, etc.) in one large container. Have students sort the objects based on similarities. Then count the number of items in each group.

PK.R.2b

Create a class collage book for the numbers 0 - 5. Have students make drawings, glue objects, paint numbers, trace their hands, etc. to represent each number. Glue the representations for each number on separate pieces of oak tag. Make a cover and use yarn to put the pages together into a book.

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.3a

Distribute one craft stick to each student. Have students explore the classroom to find objects that are *longer* and *taller* or *bigger* than the craft stick.

PK.R.3b

Use adding machine tape to measure each student's height. Compare the tapes to bookshelves, blackboards, chalk, desks, etc. to see if the tapes are *bigger*, *longer*, or *taller*.

PK.R.4 Use objects to show and understand social phenomena (e.g., count and represent sharing cookies between friends)

PK.R.4a

Divide the class into groups of five. Give each group twenty-five 1-inch color tiles or cubes. Have the group distribute the tiles/cubes so that each student has the same amount of tiles/cubes. Have students determine how many tiles/cubes each student received.

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)

PK.R.5a

Have students trace their hands. Cut out each drawing. Glue each drawing on a 10-inch square of construction paper. Label the fingers 1-5. Glue the squares on a large piece of paper to make a class quilt.

PK.R.5b

Place various cards around the classroom with pictures of different size and orientations of geometric shapes (squares, circle, triangle). Give students plastic attribute shapes to use as they match the shape with the cards.

PK.R.5c

Have a large cutout of a Sun to represent day and a cutout of a moon to represent night. Ask the students to raise their hands if day or night is their favorite part of a whole day and explain their answers. Cut the Sun and moon into puzzle parts to match the choices so that each student gets a piece of *night* or *day*.

[Back to top](#)

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.1a

Create a chart with activity choices displayed. Have the students count the number of activities. Then have each student choose an activity. Discuss how there are too many students for each of the activities, by counting (e.g., 10 children want to paint, but the classroom has three easels). Encourage students to find possible solutions.

PK.N.1b

Have students paint or draw pictures of a family from a storybook (people or animals). When completed, ask each student to count the number of people or animals in the family. On chart paper, the teacher should record the data from each student that tells how many people or animals are in each family.

PK.N.1c

Create a guessing jar. Fill the jar with 1 - 10 objects (e.g., ping pong balls, teddy bear counters, large beads, etc.). Have students guess how many objects are in the jar before taking them out. Count aloud as the objects are removed from the jar. Count them again as you place them back into the jar.

PK.N.1d

Using a guessing jar, present objects to the students that would fill the jar, using 1 - 10 objects (e.g., linking cubes, large jacks, glue sticks etc.). Have students guess how many objects can fit into the jar.

PK.N.1e

Place a variety of objects and cut outs representing numbers from 1 to 10 (e.g., playing cards, dominoes, cut outs from newspapers, magazines, boxes, a blank number cube with one side marked, miniature race car, etc.) in one large container. Have students sort the objects based on similarities. Then count the number of items in each group.

PK.N.1f

Divide the class into groups of five. Give each group twenty-five 1-inch color tiles or cubes. Have the group distribute the tiles/cubes so that each student has the same amount of tiles/cubes. Have students determine how many tiles/cubes each student received.

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

PK.N.2a

Read and act out counting rhymes such as those found in *Five Speckled Frogs and Other Counting Rhymes* by Steve Augarde.

PK.N.2b

Read *Ten Little Rabbits* by Virginia Grossman and Sylvia Long, and other books that involve counting.

PK.N.2c

Read aloud nursery rhymes such as *Baa, Baa, Black Sheep*. Provide three bags to represent the bags of wool. Have students act out the rhyme.

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

PK.N.3a

Tell the class that they are going to have a teddy bear picnic. Have the students sit with their teddy bears around a blanket. Have students take turns distributing plates, cups, and napkins. Count aloud as each item is given to the students and bears.

PK.N.3b

Divide the class into groups of five. Have marshmallows, toothpicks, and black markers available on a tray for making snowmen. Count aloud as the items are distributed. Let students take turns giving each student at their table a marshmallow until each student has three. Repeat giving each student two toothpicks for arms and then a marker to draw eyes and a mouth. Assemble the snowman, using glue to keep the marshmallows together or run an additional toothpick through all three marshmallows. Have students put a toothpick on either side of the middle marshmallow. Finish by drawing eyes and a mouth on the top marshmallow.

PK.N.3c

Provide objects such as a broom, snow shovel, wooden spoon, and pointer. Use various manipulatives (linking cubes, wooden cubes, craft sticks, toothpicks, etc.) to measure the length of the objects. Count together how many linking cubes or craft sticks represent the length of the object. Have students guess how many toothpicks or wooden cubes would represent the length of each object.

PK.N.3d

Have students count aloud as you set up a series of 10 bags. Then have students count as you place five red wooden cubes and five blue wooden cubes in each bag. Pass out recording strips with 10 squares on the strip. Have the students work in pairs: one student chooses a cube and the other student records the result (red or blue) on the recording strip. Have the students reverse roles.

PK.N.3e

Offer various snacks (i.e., carrot sticks, apple pieces, raisins etc.). Have students raise their hands for their snack choice. Count out loud together as the designated snack is given to the students with their hands up.

PK.N.3f

Distribute various amounts, from 1 - 10, of themed paper plates to the class. Display a particular plate and ask students with the displayed plate to stand in front of the class. Have a student count the number of plates held by those students. Repeat for each different design.

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

PK.N.4a

Show two dominoes - one with a configuration of four dots and zero dots and the other with three dots and one dot. Make the statement that the two dominoes do not represent the same number. Provide manipulatives for the students to determine if the statement is true or false.

PK.N.4b

Create a class collage book for the numbers 0 - 5. Have students make drawings, glue objects, paint numbers, trace their hands, etc. to represent each number. Glue the representations for each number on separate pieces of oak tag. Make a cover and use yarn to put the pages together into a book.

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

PK.N.5a

Use sponge shapes and paint to make pictures which represent the number that is rolled with a 0 - 5 number cube.

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

PK.N.6a

Divide the class into small groups. Have each student roll a 0 - 5 number cube. Have various objects available (plastic milk tops, keys, shells, pieces of colored straws, etc.). Have each student create a group of objects that represents the numeral rolled. Then have them draw the representation and related numeral.

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

PK.N.7a

Provide students with musical instruments (e.g., triangle, tambourine, bells, drum, sand block, wood block, rhythm stick, maracas). Allow students to choose a number card from 0 - 5, identify the numeral, and play their chosen instrument with the appropriate number of beats indicated on the number card. Have students make a drawing of their instrument with strike marks to show how many beats they played.

PK.N.7b

Make paper magnifying glasses for each student. In small groups, tour the school. Search for a specified numeral throughout the school.

PK.N.7c

Have students trace their hands. Cut out each drawing. Glue each drawing on a 10-inch square of construction paper. Label the fingers 1-5. Glue the squares on a large piece of paper to make a class quilt.

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

PK.N.8a

Sing *The Farmer in the Dell*. Have different students make drawings of the action in each stanza. Have students display their work and identify which picture should be first and which should be last. Do the same for *Head and Shoulders*, *Knees and Toes*, *This Old Man* and other songs that have first and last items.

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

PK.N.9a

Use symbols to indicate if it is a sunny, cloudy, rainy, or snowy day. On Thursdays, develop addition and subtraction problems from the data for Monday through Thursday (i.e., 2 sunny days + 2 cloudy days = 4 days).

PK.N.9b

Tell a short story about children going to a playground together. Three of the children play on the swings while one is on the slide. Ask the following question:

How many children are at the playground?

Guide the students through the steps of adding $3 + 1$ using manipulatives. Vary the story within sums up to four.

PK.N.9c

Tell a story about children enjoying a wintry day at a park. Three of the children are sledding when one of them has to go home. Ask the following question:

How many children are left sledding?

Guide the students through the steps of subtracting $3 - 1$ using manipulatives. Vary the story involving numbers one, two, three, or four.

[Back to top](#)

Algebra Strand

Students will recognize, use, and represent algebraically patterns, relations, and functions.

Patterns, Relations, and Functions

PK.A.1 Duplicate simple patterns using concrete objects

PK.A.1a

Provide students with paper geometric shapes. Have students make a pattern by gluing the shapes on a strip of paper. Then have them pass their papers to a partner who duplicates the pattern on another sheet of paper.

PK.A.1b

Create a simple pattern for students to duplicate with linking cubes or other manipulatives. Have students talk about the pattern as they duplicate the model. Have the students draw a picture of the pattern.

[Back to top](#)

Geometry Strand

Students will use visualization and spatial reasoning to analyze characteristics and properties of geometric shapes.

Shapes

PK.G.1 Match shapes, first with same size and orientation, then with different sizes and orientation

PK.G.1a

Use attribute blocks to set up a row of three different shapes of the same size on the floor. Give individual students duplicate shapes. Have the students match the shapes on the floor and explain their matches. Use different size attribute blocks placed in different orientations.

PK.G.1b

Send home worksheets which have a circle, triangle, or square as the center. Have students find objects in their homes that match the circle, triangle, or square and draw a picture of the object.

PK.G.1c

Display the paintings *I and the Village* by Chagall, *Dream City* by Klee, and *Girl With A Boat* by Picasso. Have students locate geometric shapes of the circle, square, and triangle in the paintings. Encourage students to create their own 'Cubism' paintings.

PK.G.1d

Place various cards around the classroom with pictures of different size and orientations of geometric shapes (squares, circle, triangle). Give students plastic attribute shapes to use as they match the shape with the cards.

PK.G.2 Informally play with solids (e.g., building blocks)

PK.G.2a

During informal play with building blocks, encourage stacking different blocks, posing questions about the size and weight of the blocks, which can lead to stronger and taller structures.

PK.G.2b

Have students make a building using blocks. Have other students gather around to hear the builder tell a story of what was made and then make a drawing or painting of the structure.

[Back to top](#)

Measurement Strand

Students will determine what can be measured and how, using appropriate methods and formulas.

Units of Measurement

PK.M.1 Develop language such as bigger, longer, and taller to discuss length

PK.M.1a

Make the following statement:

Three of the same object is longer than two of the same object.

Have students demonstrate with manipulatives whether the statement is true or false.

PK.M.1b

Distribute one craft stick to each student. Have students explore the classroom to find objects that are *longer* and *taller* or *bigger* than the craft stick.

PK.M.1c

Use adding machine tape to measure each student's height. Compare the tapes to bookshelves, blackboards, chalk, desks, etc. to see if the tapes are *bigger*, *longer*, or *taller*.

PK.M.2 Relate specific times such as day and night

PK.M.2a

Label one chart *day* and the other chart *night*. Discuss the different activities people do and draw illustrations on either the *day* or *night* chart

PK.M.2b

Have a large cutout of a Sun to represent day and a cutout of a moon to represent night. Ask the students to raise their hands if day or night is their favorite part of a whole day and explain their answers. Cut the Sun and moon into puzzle parts to match the choices so that each student gets a piece of *night* or *day*.

[Back to top](#)

Statistics and Probability Strand

Students will collect, organize, display, and analyze data.

Organization and Display of Data

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

PK.S.1a

Have a wide variety of objects to be sorted (e.g., plastic fruits and vegetables, small cars, feathers, colored pipe cleaners, etc.). Place sheets of colored construction paper on tables and ask students to sort the objects by color, size, shape, and other attributes. Have students explain why they placed the different objects on specific pieces of colored paper.

PK.S.1b

Label containers by color (red, blue, yellow, green). Divide the class into pairs. Have students sort colored buttons (red, blue, yellow, green) by taking turns spinning a 4-color spinner. Students should name the color the spinner lands on and place the correct color button in the correctly labeled container.

PK.S.1c

Read *A Pair Of Socks* by Stuart Murphy. Provide students with a wide variety of socks to sort. Students should use the words *sort* and *attribute* as they explain their choices.

PK.S.2 Use physical objects to make graphs

PK.S.2a

As a class, prepare cards with symbols to represent the weather. Have students place the appropriate card on a graph that is marked with each day of the week. Discuss the weather graph with the class.

PK.S.2b

Discuss the different activities that students do at school (painting, singing, etc.). Guide the students into making a graph that uses representations of favorite activities. Help students make a pictograph. Discuss what the graphs show.

Analysis of Data

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

PK.S.3a

Divide the class into small groups. Provide each group with a box of objects of different colors (e.g., marbles, discs, crayons, ribbons). Ask each group to sort the objects by color. Then ask each group to count and compare the boxes and discuss the following questions:

How many red objects do you have?

How many blue objects do you have?

Which group had the highest number of red objects?

PK.S.4 Describe the attributes of objects

PK.S.4a

Provide small individual containers with a few objects (e.g., small plastic toy animals, round wooden beads, crayons, feathers). While taking turns, have students describe the attributes of the objects in their containers to a small group of students.

PK.S.4b

Have students take turns choosing a familiar object from a box to be the *mystery object*. With guidance from the teacher, the class should ask questions about the *mystery object* until they have correctly guessed the mystery object.

[Back to top](#)