

## Prekindergarten

The following curriculum focal points and related connections are the recommended content emphases for mathematics in prekindergarten. It is essential that these focal points be addressed in contexts that promote problem solving, reasoning, communication, making connections, and designing and analyzing representations.

### Prekindergarten Curriculum Focal Points

#### **Number and Operations: Developing an understanding of whole numbers, including concepts of correspondence, counting, cardinality, and comparison.**

Children develop an understanding of the meanings of whole numbers and recognize the number of objects in small groups without counting and by counting—the first and most basic mathematical algorithm. They understand that number words refer to quantity. They use one-to-one correspondence to solve problems by matching sets and comparing number amounts and in counting objects to 10 and beyond. They understand that the last word that they state in counting tells “how many,” they count to determine number amounts and compare quantities (using language such as “more than” and “less than”), and they order sets by the number of objects in them.

#### **Geometry: Identifying shapes and describing spatial relationships.**

Children develop spatial reasoning by working from two perspectives on space as they examine the shapes of objects and inspect their relative positions. They find shapes in their environments and describe them in their own words. They build pictures and designs by combining two- and three dimensional shapes, and they solve such problems as deciding which piece will fit into a space in a puzzle. They discuss the relative positions of objects with vocabulary such as “above,” “below,” and “next to.”

#### **Measurement: Identifying measurable attributes and comparing objects by using these attributes.**

Children identify objects as “the same” or “different,” and then “more” or “less,” on the basis of attributes that they can measure. They identify measurable attributes such as length and weight and solve problems by making direct comparisons of objects on the basis of those attributes.

### Connections to the Focal Points

**Data Analysis:** Children learn the foundations of data analysis by using objects’ attributes that they have identified in relation to geometry and measurement (e.g., size, quantity, orientation, number of sides or vertices, color) for various purposes, such as describing, sorting, or comparing. For example, children sort geometric figures by shape, compare objects by weight (“heavier,” “lighter”), or describe sets of objects by the number of objects in each set.

**Number and Operations:** Children use meanings of numbers to create strategies for solving problems and responding to practical situations, such as getting just enough napkins for a group, or mathematical situations, such as determining that any shape is a triangle if it has exactly three straight sides and is closed.

**Algebra:** Children recognize and duplicate simple sequential patterns (e.g., square, circle, square, circle, square, circle,...).

## **Related Expectations from Principles and Standards for School Mathematics Content Standards: Prekindergarten**

The following content expectations are linked to the [Prekindergarten focal points](#) or connections.

### **Number and Operations**

- Count with understanding and recognize “how many” in sets of objects

### **Algebra**

- Sort, classify, and order objects by size, number, and other properties
- Recognize, describe, and extend patterns such as sequences of sounds and shapes or simple numeric patterns and translate from one representation to another
- Analyze how both repeating and growing patterns are generated
- Describe qualitative change, such as a student’s growing taller

### **Geometry**

- Recognize, name, build, draw, compare, and sort two- and three-dimensional shapes (naming of three-dimensional shapes occurs in Grade 5 Curriculum Focal Points)
- Describe attributes and parts of two- and three-dimensional shapes
- Describe, name, and interpret relative positions in space and apply ideas about relative position
- Describe, name, and interpret direction and distance in navigating space and apply ideas about direction and distance
- Find and name locations with simple relationships such as “near to” and in coordinate systems such as maps (this use of coordinate systems is not identified as a focal point or connection)

- Create mental images of geometric shapes using spatial memory and spatial visualization
- Recognize geometric shapes and structures in the environment and specify their location

### Measurement

- Recognize the attributes of length, volume, weight, area, and time (time is not identified as a focal point or connection)
- Compare and order objects according to these attributes

### Data Analysis and Probability

- Sort and classify objects according to their attributes and organize data about the objects

