



## Support for Parent and Family Engagement in Student Learning

## Mathematics in Kindergarten

### What Do Students Learn in Kindergarten Mathematics?

In kindergarten, teaching and learning Math is primarily focused on three important areas:

- 1 Learning numbers and what numbers represent.
- 2 Addition and subtraction.
- 3 Identify and work with shapes.



The New Jersey Department of Education Division of Early Childhood Education (DECE) is committed to providing families and educators with resources and activities to help children learn both inside and outside of the classroom. This is true during the summer months, extended holiday breaks and other school closures.

This resource, *Young MATH MASTERMINDS*, serves as one creative example for teachers and families to communicate about student learning in kindergarten.

When schools are closed for the summer, or for other reasons, educators can support continued learning by sharing guiding information and resources with students *and* their families. This document can serve as one way to help families facilitate learning from assignments sent home as remote learning, homework, technology-based projects, or learning packets. It is a place for teachers to explain how families can be a “learning facilitator” when their child may not be in the classroom.

Teachers use instructional strategies to teach students new skills and they can provide families with complimentary instructional support strategies that reinforce their child’s new knowledge and skills.

**Parents can be most helpful to their child’s learning process when teachers help them understand 1) what their child is learning, 2) why they are learning it, and 3) the role they can play in helping their child apply new knowledge and skills to life outside of the classroom. In addition, if a teacher also 4) provides families with “look-fors,” and 5) ways to observe active learning, and 6) an opportunity to communicate their observations back to their child’s teacher, students receive strong, wrap-around support for learning.**

Strong learning partnerships built with tools like *Young MATH MASTERMINDS* can limit learning loss when a child is not in school. Once home/school learning partnerships are built, documents like this one can become a long-term communication strategy to help children learn anytime and anywhere.

In kindergarten, students can use a variety of things to understand math.

## What are some important mathematic skills in Kindergarten?

- ⇒ Counting how many objects are in a group and comparing the quantities of two groups of objects
- ⇒ Comparing two numbers to identify which is greater or less than the other
- ⇒ Understanding addition as putting together and subtraction as taking away from
- ⇒ Adding and subtracting very small numbers quickly and accurately
- ⇒ Breaking up numbers less than or equal to 10 in more than one way for example,  $9=6+3$ ,  $9=5+4$
- ⇒ For any number from 1 to 9, finding the missing quantity that is needed to reach 10
- ⇒ Representing addition and subtraction word problems using objects or by drawing pictures
- ⇒ Solving addition and subtraction word problems involving numbers that add up to 10 or less or by subtracting from a number 10 or less



### MATH WORD PROBLEMS

Here are a few examples of the skills and strategies students will develop as they solve word problems in kindergarten math. Your child needs to build on these skills to learn math in first grade.

Base-level kindergarten skills	Preparing for skills in first grade
<ul style="list-style-type: none"> <li>• Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (such as claps), acting out situations, verbal explanations, expressions, and equations.</li> <li>• Solve word problems by adding or subtracting numbers up through 10 using objects and drawings.</li> </ul>	<ul style="list-style-type: none"> <li>• Solve simple word problems by adding or subtracting numbers up through 20.</li> <li>• Solve more challenging one- and two-step word problems by adding or subtracting numbers up through 100.</li> <li>• Solve addition and subtraction problems for different unknown numbers such as:               <ul style="list-style-type: none"> <li>• <math>20 - \text{what number} = 15</math>?</li> <li>• <math>9 + 4 = \text{what number?}</math></li> </ul> </li> </ul>



### SAMPLE PROBLEM - KINDERGARTEN WORD PROBLEMS

 <b>Addition</b>	<p>Two red apples and two green apples are on the table. How many apples are on the table?</p>
 <b>Subtraction</b>	<p>Aisha has ten apples. She gives one to Timothy. How many apples are left?</p>





## PLACE VALUES

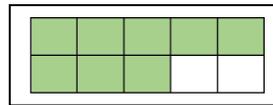
Here are a few examples of how students will work with numbers and learn to think of ten as one unit.

Base-level kindergarten skills	Preparing for skills in first grade
<ul style="list-style-type: none"> <li>Count to 100 by ones and tens</li> <li>Understand that 10 can be thought of as a bundle of ten ones—called a “ten”</li> <li>Understand that numbers from 11 to 19 contain a ten and some leftover ones (for example, <math>14 = 10 + 4</math>)</li> </ul>	<ul style="list-style-type: none"> <li>Understand that 100 can be thought of as a bundle of ten tens—called a “hundred”</li> <li>Understand that the two digits of a two-digit number represent amounts of tens and ones -called a “place value”</li> <li>Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones (place value)</li> <li>Add and subtract numbers through 100 using what students have learned about place value</li> </ul>



### SAMPLE PROBLEM – KINDERGARTEN UNITS OF TEN

Students learn to find the “partners” that make ten for any number (5 squares and 5 partner squares make a total of 10 squares) This drawing also shows that if you have 8 squares, it takes 2 more to make 10 squares. Students can use groups of 10 to count/add each group of 10.

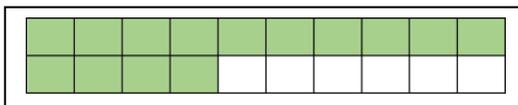


$$5 + 5 \text{ squares} = 10 \text{ squares}$$

$$8 + 2 \text{ squares} = 10 \text{ squares}$$

$$10 \text{ squares together} = 1 \text{ unit}$$

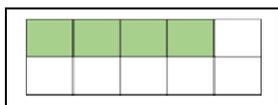
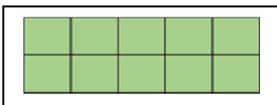
14 squares



10

+

4



Once students understand that a group of 10 squares can represent one unit, then they can add smaller amounts of squares until they get 2 units, or 20 squares. To subtract, students can break large groups apart to show the group of ten and some leftover squares.

Teachers are the best resource for teaching and learning mathematics at home.

Parents and families benefit from very specific information from teachers so that they can understand how to best help their child use worksheets and online learning. They should ask teachers questions about the “what and why” of teaching math and they should ask about “look-fors.” (“Look-fors” are a child’s behaviors or comments that families can observe in order to know if their child understands and can perform the new skill). It is important for parents to share their observations with their child’s teacher and for teachers to tell families how to communicate that information to the best of their ability.

The Division of Early Childhood Education acknowledges the term “parent” to indicate any adult who plays a legal and significant role in a student’s life. This includes parents, stepparents, parents’ significant others, foster parents, siblings, grandparents, aunts, uncles, and extended family, caretakers, and others who regularly contribute in important ways to a child’s education and development. The term “parent” may be used interchangeably with the word “family” or the phrase “parent and family” in reference to those who share responsibility for the well-being of a child.