

# Dimensions Math

## Pre-Kindergarten Letter Home #1

Chapter 1 Matching, Sorting, Classifying

Dimensions Math  
Letters Home

### Math is Fun!

This year we'll learn math in a fun, hands-on way. At the beginning of each chapter, I'll send home a newsletter telling you what your child will be doing in class, and how you can help at home.

We're living in a very exciting time in education. Brain science is providing evidence of what works (and what doesn't) in preparing children for ongoing math success. We've learned that younger children are ready for more math than previously assumed. Researchers from Northwestern University reported that math skills demonstrated in kindergarten predicted ongoing academic achievement in reading to a greater extent than did reading skills demonstrated in kindergarten.<sup>1</sup>

Dimensions Math, the math textbook series we're using, introduces math topics in the speech bubbles of children. Dimensions Math contains five children characters: Emma, Dion, Sofia, Alex, and Mei. Each character has favorite colors and activities. Be sure to ask your child if they learned anything new about one of the characters each week.

During the first few days of this chapter, your child will be reviewing the colors red, blue, yellow and green. Next, your child will be exploring and describing textures. We'll focus on objects that are soft, hard, rough, bumpy, sticky, and grainy. Following that, your child will be feeling and looking at objects and pictures in order to describe what is the same and what is different about them, including size.

Throughout the chapter your child will be matching, sorting, and classifying.

### What can we do at home?

- Remember that children learn best through play, and that math is fun.
- Have your child show you objects and pictures of different shades of red, blue, yellow, and green.
- Ask your child to sort laundry, then tell you the reason for their sort.
- Read *Sorting at the Market (Math Around Us)* by Tracey Steffora to your child. When you take your child to the grocery store, talk about the book and how the produce is sorted in the store.

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<sup>1</sup>Duncan, Greg J., et al. "School Readiness and Later Achievement." *Developmental Psychology*, vol. 43, no. 6, 2007, pp. 1428-1446.

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## Vocabulary & Mathematical Terms

- Same
- Alike
- Not the same
- Different
- Red
- Blue
- Yellow
- Green
- Orange
- Sort
- Match
- Smooth
- Rough
- Bumpy
- Sticky
- Grainy
- Big
- Little
- Small
- Large
- Size

## Math is Fun!

Brain science tells us that the long-held belief that humans are either born with or without a “magic math gene” is simply a myth. All the evidence indicates that any of us are capable of learning math. What’s far more important than genetics is work ethic. Perseverance is the key. Praise your child working to learn!

Building on sorting by size in Chapter 1, your child will be comparing objects in this chapter. Using toys and other child-friendly objects in the classroom, then similar pictures in the text, your child will compare up to five objects by size and weight.

## What can we do at home?

- Talk, talk, talk! With the math standards in our country catching up to international math standards, all of us must encourage children to discuss math on a regular basis.
- Have your child help you with any measurement you do. In Pre-Kindergarten, Kindergarten, and Grade 1 in Dimensions Math, children do not use standard units (inches, pounds, cups, meters, etc.) when measuring. In fact, in Pre-Kindergarten, children will not even be measuring with non-standard units (paper clips, ribbons, etc.). However, if you are measuring objects, ask your child questions such as, “Which \_\_\_\_\_ is longer/heavier/ heavier/lighter than this one?” “Which \_\_\_\_\_ is the smallest/longest/shortest/heaviest?”
- If you have balance scales at home, allow your child to compare the weights of small objects and discuss their findings with you.
- Read *Is It Larger? Is It Smaller?* by Tana Hoban to your child.

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## Vocabulary & Mathematical Terms

- Compare
- Smaller
- Smaller than
- Smallest
- Larger
- Larger than
- Largest
- Shorter
- Shorter than
- Shortest
- Longer
- Longer than
- Longest
- Height
- Tall
- Taller
- Taller than
- Tallest
- Weight
- Heavy
- Heavier
- Heavier than
- Heaviest
- Light
- Lighter
- Lighter than
- Lightest
- Balance scales

## **Math is Fun!**

Patterns are everywhere. We see patterns in nature, our daily routines, music, etc. Recognizing, extending, and creating patterns is stressed in Pre-Kindergarten because it is a skill needed for ongoing math success. Addition, subtraction, multiplication, and division become simple operations when patterns are recognized. Children who don't see patterns become frustrated in math. Every computation is a brand new problem. By focusing on patterns in Pre-K, your child will gain confidence and flexible thinking skills.

A repeating pattern is only a pattern if it is repeated at least twice. Your child will first recognize and extend patterns using only two colors or variables, such as tall, short, tall, short, etc. Eventually all children will be given the opportunity to use three colors or variables in their creation of patterns.

At the beginning of this chapter, your child will study patterns in movement. Of the Dimensions Math characters, Sofia and Emma like gymnastics and Mei and Alex like to dance. If your child is involved in one of these activities, be sure to ask him or her to show you a movement pattern.

After movement patterns, your child will look at patterns in sound. Research regarding music shows that there is a link between music and math from a very early age. One study showed that preschool children who studied piano once a week greatly outscored other children on spatial-temporal reasoning skills.<sup>1</sup>

Your child will add the colors black and white to those already studied, and will use those colors, among others, to create patterns of linking cubes and beads. Coloring patterns created will help your child gain a deeper understanding of patterning.

Creativity is greatly encouraged in Pre-Kindergarten. Your child will be given many opportunities to create patterns and to have others extend those patterns.

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<sup>1</sup>Burack, Jodi. "Uniting Mind and Music." *American Music Teacher*, vol. 55, issue 1, 2005, p. 84.

## What can we do at home?

- Recognize and point out patterns wherever you see or hear them. Look at clothes, tiles on the floor, wallpaper and other décor. Take your child to a garden and ask him or her to find a pattern in the flowers or other plants growing.
- Look at works of art, including jewelry, and point out patterns. Ask your child what color, shape, etc. comes next in the pattern.
- Create patterns as you move, and have your child name the pattern, for example, small step, big step, small step, big step, and move in the same pattern. Then have your child create a movement pattern, name it, and move in their pattern.
- Read *Town Mouse*, *Country Mouse* by Jan Brett to your child and discuss all of the repeating patterns in the book.
- If you can, provide music lessons to your child. A keyboard, drum, or even a xylophone would allow you to create sound patterns with your child and have your child create sound patterns as well.

## Vocabulary & Mathematical Terms

- Pattern
- Repeating
- Black
- White

# Dimensions Math

## Pre-Kindergarten Letter Home #4

Chapter 4 Numbers to 5

Dimensions Math  
Letters Home

### Math is Fun!

We're counting now! You may think that your child has known how to count for a long time. In Pre-Kindergarten we'll focus on rote counting first. Rote counting is the ability to say the number words in the correct order. If your child is already adept at rote counting, don't worry. We'll move from rote counting in both ascending and descending order to counting with one-to-one correspondence. A set of objects (up to 5) will be given to your child and he or she will have to count the objects. Your child will then practice counting out a specific number of objects (up to 5) from a larger set.

After counting with one-to-one correspondence, we will move on to cardinal counting. Cardinality means that a child counting has an understanding that when counting a set of objects, the last number he or she says is the number of objects in the set.

Your child will be encouraged to name the unit of the objects being counted. For example, if your child is counting blocks and is asked how many blocks there are, your child will be encouraged to answer, "There are \_\_\_\_ blocks."

Your child will not be learning to identify numbers until Chapter 5.

When using fingers for counting, your child will first be counting his or her left pinkie and saying "One," all the way to his or her left thumb and saying, "Five." This is intentional. Number paths and number lines are read from left to right.

The colors pink and brown will be added to the colors we have learned already.

## What can we do at home?

- Be sure your child knows the number sequence from 1 to 5. Rote count up and down with your child. You can turn it into a game by counting 5 steps forward, stopping, then counting backward from 5 to 1 as you walk backward.
- Count small sets of objects (up to 5) with your child.
- When counting using fingers please start with your left pinkie as “one.”
- Help your child develop visualization skills by telling stories with small sets of objects (up to 5) and having your child close his or her eyes to picture the objects.
- Read *One Fish, Two Fish, Three, Four, Five Fish*, based on Dr. Seuss’s classic, *One Fish, Two Fish, Red Fish, Blue Fish* to your child.
- Send your empty egg cartons to class with your child.

## Vocabulary & Mathematical Terms

- One
- Two
- Three
- Four
- Five
- Pair
- Purple
- Five-frame card
- Pink
- Brown



# Dimensions Math

## Pre-Kindergarten Letter Home #5

Chapter 5 Numbers to 5 – Part 2

Dimensions Math  
Letters Home

### Math is Fun!

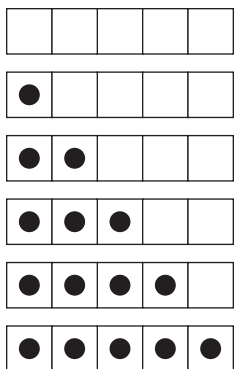
In this chapter, your child will be learning to recognize numbers 1 to 5. Of course, we will continue to review rote counting and counting with one-to-one correspondence.

Building on the counting done in Chapter 4, your child will be working on recognizing that when he or she counts a small set of objects, the last number said when counting is the number of objects in the set. For example, if your child counts the toes on one foot, after counting to 5 when you ask, “So how many toes do you have on that foot?” your child can say, “Five toes,” without having to count them again.

We will not be teaching how to write numbers in Pre-K. Instead, basic and advanced counting competencies are emphasized.

In addition, your child will not be using a traditional number line in Pre-K. A number path is different from a number line in that each number is separated from the others. Most young children do not know that there is an infinite number of numbers between two whole numbers or that there are numbers less than zero. These are critically important concepts that will be introduced in later years.

In addition to number paths, your child will be using five-frame cards. Here is a picture of a set of five-frame cards showing 0 to 5.



Subitizing, the ability to instantly recognize a quantity without counting, is emphasized in this chapter. Research shows that there is a clear relationship between subitizing ability, numeracy, and general mathematics skills.

## What can we do at home?

- Point out the numbers 1, 2, 3, 4, and 5 whenever you see them and ask your child to identify the number. Eventually, your child will point out the numbers to you!
- Continue to count small sets of objects with your children, adding the question after counting, “So how many \_\_\_\_\_ are there?”
- Roll a die showing only numbers 1 – 5 (put a piece of tape over the side showing 6) and ask your child to tell you how many dots they see. The goal is to have your child recognize small quantities without counting. Another way to build subitizing skills is to use flashcards. Make flashcards with 1 to 5 dots or stickers on them in different arrangements. Play a game in which you flash a card and your child tells you, as quickly as possible, the quantity shown.

## Vocabulary & Mathematical Terms

- Number path
- Number card
- Number cube (die)
- Arrangement

# Dimensions Math

## Pre-Kindergarten Letter Home #6

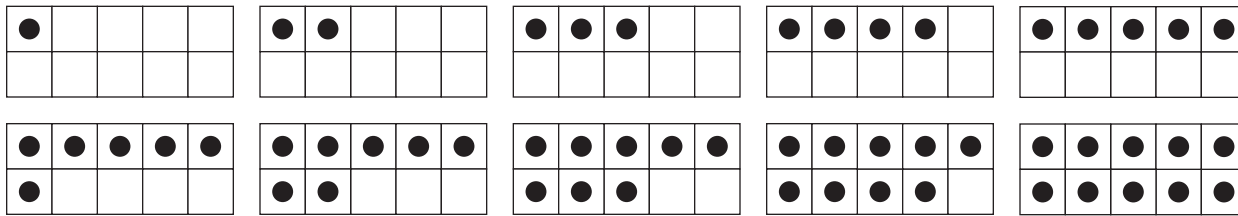
Chapter 6 Numbers to 10

Dimensions Math  
Letters Home

### Math is Fun!

In this and the next chapter, your child will build on the knowledge of numbers 1 – 5. We will learn about 0, then count to 10.

Ten-frame cards will be used extensively in Dimensions Math. Depending on the purpose of the activity, some of the ten-frame cards called for will already be representing quantities. At other times, children will represent quantities on a blank ten-frame card. Your child will be taught to hold and view ten-frame cards horizontally. Below is a set of ten-frame cards showing quantities 1 – 10.



Subitizing, the ability to instantly recognize a quantity without counting, is emphasized in this chapter. Research shows that there is a clear relationship between subitizing ability, numeracy, and general mathematics skills.

Ten-frame cards will be used for many purposes, one of which is subitizing.

We will begin learning the days of the week in this chapter when studying the number 7.

## What can we do at home?

- Rote count and count with one-to-one correspondence with your child from 1 to 10. Spend some time counting down from 10. In class, we will pretend to be rocket ships and blast off after our countdown. Ask your child to show you what that looks like.
- Have your child make a picture for you using 10 stickers. Play 10 notes on a keyboard or xylophone, singing the numbers in sequence, 1 – 10 as the notes get higher and 10 – 1 as the notes get lower.
- Work with your child on the days of the week. Focus on what your child does on each day. We will be singing a days of the week song to the tune of “Pop Goes the Weasel.” Ask your child to teach you the song.
- Read *Ten Terrible Dinosaurs* by Paul Strickland to your child.
- Send empty egg cartons to class.

## Vocabulary & Mathematical Terms

- Zero
- Six
- Seven
- Eight
- Nine
- Ten
- Ten-frame card
- Week
- Sunday
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- More than

# Dimensions Math

## Pre-Kindergarten Letter Home #7

Chapter 7 Numbers to 10 – Part 2

Dimensions Math  
Letters Home

### Math is Fun!

Similar to how Chapter 5 built on Chapter 4 with number recognition of numbers 1 to 5, this chapter builds on Chapter 6 with number recognition of 0 to 10.

Your child will be counting sets of objects, up to a set of 10, and matching the written number to the number of objects in the set. We will be working with objects arranged in various ways to help your child develop an understanding of the concept.

### What can we do at home?

- At the beginning of the chapter we will be singing “The Ants Go Marching” in class. Ask your child to teach you the song.
- Because we are a Pre-Kindergarten class, we try to integrate language arts and math whenever possible. We will be working with rhyming words in this chapter. Help your child find rhyming words for the number words we have learned so far. Here are a few examples:

One – bun, fun, sun

Two – boo, do, new

Three – bee, knee, see

Four – door, more, snore

Five – hive, jive, drive

Six – fix, sticks

Eight – gate, late, straight

Ten – hen, men, pen

- Math is all around us! Here are some ideas for you to use with your child:

**Driving** – Ask your child, “What numbers do you see on license plates?”

**Dining out** – Set out several packages of ketchup, salt, sugar, etc. and have your child count them and tell you how many there are.

**Shopping** – Have your child identify numbers they see on price tags.

- Read *Mouse Count* by Ellen Stoll Walsh to your child.