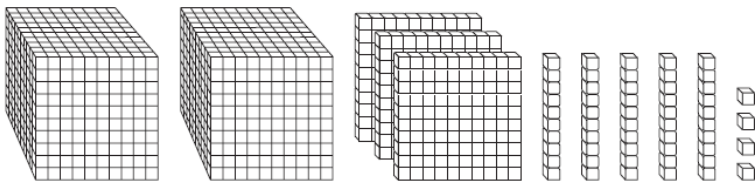# Let's Get Ready for Grade 4 – Parent Guide

***Lesson 1:*** Read and Write Numbers to Ten Thousand

**Objective:** To read and write numbers to the ten thousands.

**Description:** The children write numbers in standard form, expanded form and word form. Examples of the three forms are below:



| Thousands | Hundreds | Tens | Ones |
|-----------|----------|------|------|
| 2, | 3 | 5 | 4 |

**Standard form** is a way to write numbers using digits.

       **Ex:**   **2,354**

**Expanded form** is a way to write the number by showing the **value** (see below) of each digit.

       2 thousands  3 hundreds   5 tens 4 ones

       2,000        300            50         4

    **Ex:**   **2,000 +**    **300**       **+**    **50**   **+**   **4**

**Word form** is a way to write the number using words.

      **Ex: two thousand, three hundred fifty-four**

**Value:** In the number 2,345… the 3 is in the hundreds column, but the **value** of the 3 is 300.

**Lesson 2: Relative Size on a Number Line**

**Objective:** To find the value of points on a number line.

**Description:** In this lesson the children find the value of points on a number line. The children will use three different number lines. They are familiar with "skip counting" to help them fill in the missing numbers on the number line. "Skip counting" basically means "counting by…"

Ex:  Skip counting by 10s means… 10, 20, 30, 40, etc.
Skip counting by 100s means…. 100, 200, 300, etc…
Skip counting by 1,000s, means… 1000, 2000, 3000, etc…

**Lesson 3: Compare 3- and 4-digit numbers**

**Objective:** To use >, <, or = to compare 3- and 4-digit numbers.

**Description:** In this lesson the children compare numbers using the following symbols.

| Symbol | Meaning |
|---|---|
| > | is greater than |
| < | is less than |
| = | is equal to |

For example:        5,341 > 5,241

Both numbers have 5 thousands, but 5,341 has 3 hundreds while 5,241 only has two hundreds. Since 300 > 200, that means that 5,341 > 5,241.

## Lesson 4: Multi-digit addition and subtraction

**Objective:** To use the standard algorithm to add and subtract multi-digit numbers.

**Description:** Prior to third grade, the children become familiar with the meaning of addition and subtraction. They use models and drawings to show these operations. In third grade they familiarize themselves with the standard algorithm that most of us learned when we were children. The standard algorithm for addition and subtraction is pictured below:

Add: 765 + 158

| Hundreds | Tens | Ones |
|---|---|---|
| 1 | 1 | |
| 7 | 6 | 5 |
| + 1 | 5 | 8 |
| 9 | 2 | 3 |

Subtract: 622 - 315

| Hundreds | Tens | Ones |
|---|---|---|
| | 1 | 12 |
| 6 | 2 | 2 |
| - 3 | 1 | 5 |
| 3 | 0 | 7 |

## Lesson 5: Multiplication facts

**Objective:** To quickly recall multiplication facts up to 10 x 10.

**Description:** Early in grade 3 the children recognize multiplication as repeated addition. For example, when finding the value of "3 x 5," the children recognize this as "3 groups of 5." They often start by using objects and counting "3 groups of 5."

$$5 \quad + \quad 5 \quad + \quad 5 \quad = \quad 15$$

Eventually this leads to "skip counting"… 5, 10, 15. By the end of 3rd grade, we want all of the children to quickly recall their multiplication facts up to 10 x 10 without skip counting or repeated addition. (The children like knowing up to 12 x 12 because it is often the last one that they see in the multiplication tables.)

**Lesson 6: Relating Multiplication and Division**

**Objective:** To write related multiplication and division equations.

**Description:** In grades 1 and 2 the students become familiar with addition and subtraction "fact families." Addition and subtraction "fact families" are numbers that are related using addition and subtraction. For example: 3, 7, and 10 are fact families because…

$$3 + 7 = 10 \qquad 7 + 3 = 10 \qquad 10 - 3 = 7 \qquad 10 - 7 = 3$$

By the end of 3rd grade the children become familiar with multiplication and division "fact families." They should know their multiplication facts up to 10 x 10. This was reviewed in the previous lesson. In this lesson, the children write the division equations that related to these. For example…

Multiplication:  3 x 5 = 15

Related division equation:  15 ÷ 5 = 3

or:  15 ÷ 3 = 5

**Lesson 7: Use Multiplication Patterns**

**Objective:** To recognize patterns to multiply by 10, 100, 1000.

**Description:** The children know that when they multiply 1 x (any number), the product is that number. In this lesson the children recognize patterns to find the product when they multiply by 10, 100, 1000.

For example:   5 x 1 = 5

5 x 1**0** = 5**0**

5 x 1**00** = 5**00**

5 x 1**000** = 5**000**

## Lesson 8: Use Models to Multiply Tens and Ones.

**Objective:** To use the area model and distributive property to multiply one digit numbers by numbers between 10 and 20.

**Description:** Many of us were introduced to the distributive property in middle school. It probably looked like… a * (b + c) = (a * b) + (b * c). By introducing it to us then, many of us never made the connection as to when we actually use the distributive property. We want the children to see that we use the distributive property every time we multiply two digit numbers. As a result, the students were introduced to the distributive property in 3rd grade with numbers… not variable! using area.

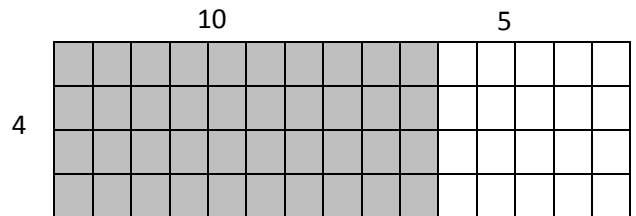In 3rd grade the students learn that to find the area of a rectangle, we multiply… A = l x w.

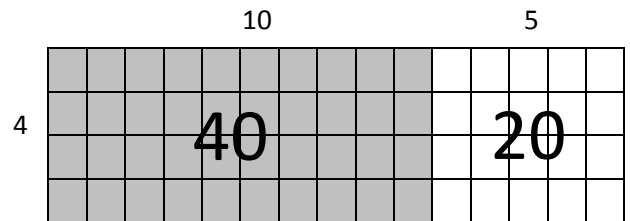So, let's think about… 4 x 15 and draw the related rectangle:

15
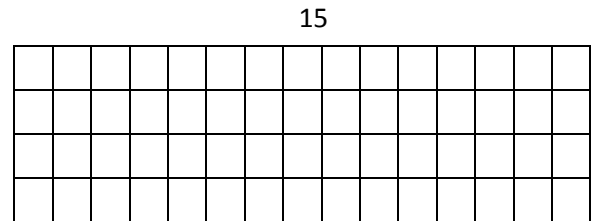
The children know that 15 = 10 + 5

So, we can separate the rectangle into two parts, one rectangle that is 4 by 10 and the other that is 4 by 5.

10          5

4

The children know that 4 x 10 = 40
            (the rectangle on the left).

The children also know that 4 x 5 = 20
            (the rectangle on the right).

10          5

4          40          20

To find the area of the *whole* rectangle, they can add

40 + 20 = 60

**Lesson 9: Model Division with Remainders.**

**Objective:** To use objects to show division with remainders.

**Description:** To complete this lesson, some children may need some countable objects like pennies, blocks, candies, etc. Using the objects, their goal is to show the amount in each group and the amount left over after dividing (sharing) the objects equally among the groups.

Ex: Cara had 14 pennies and divided them into 3 equal groups.
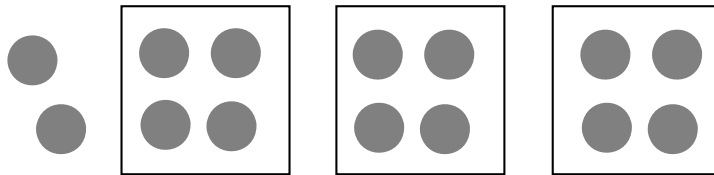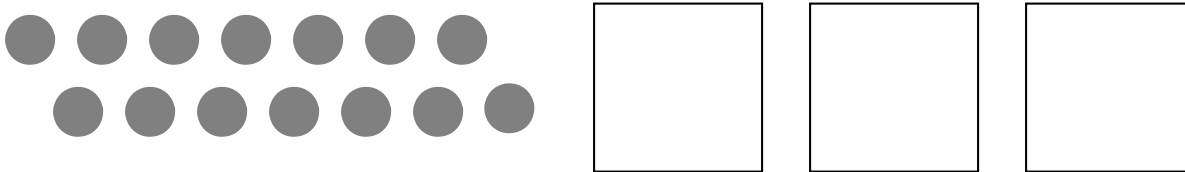
She can place _____4_____ pennies in each group. There will be ___2___ pennies left over.

**Lesson 10: Checkpoint**

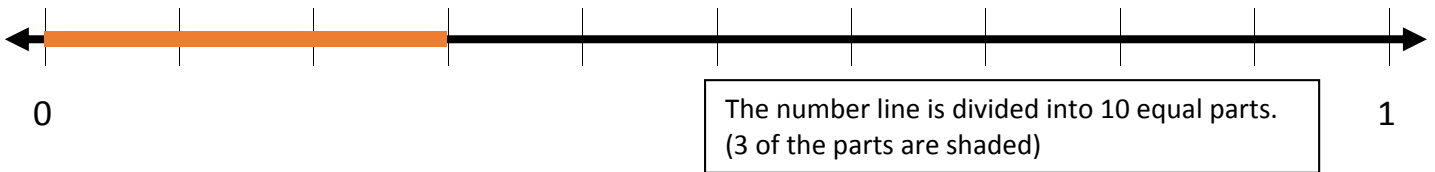**Objective:** To review all of the topics from lesson 1 - 9.

## Lesson 11: Model tenths and hundredths.

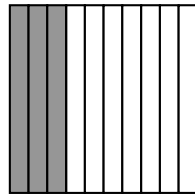**Objective:** To represent tenths and hundreds on a number line or in a drawing.

**Description:** In third grade the children are introduced to the meaning and notation of a fraction. They recognize the parts of a fraction:

$\frac{3}{10}$ ← numerator   ← amount that are shaded
← denominator   ← amount of equal parts that the whole is divided into

Model 1: A number line

0                                                                          1

The number line is divided into 10 equal parts.
(3 of the parts are shaded)

Model 2: A square

The square is divided into 10 equal parts.
(3 of the parts are shaded)

## Lesson 12: Model Fractions Greater than One.

**Objective:** To represent a fraction greater than 1 in different ways.

**Description:** A fraction greater than 1 has a numerator that is greater than its denominator. A **mixed number** has a whole-number and a fraction. The example shows $\frac{7}{4}$.
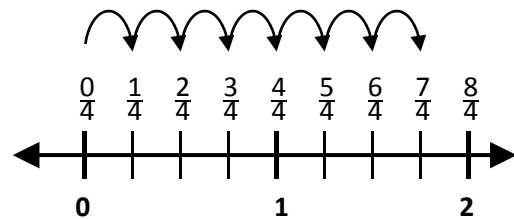
## Method 1: Using a drawing.

- Draw squares divided into fourths.
- 7 of the $\frac{1}{4}$ are shaded.
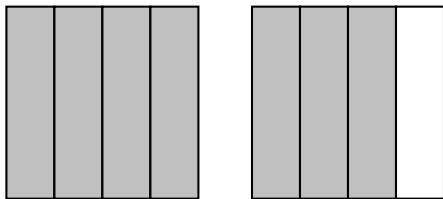
We shaded 1 whole and $\frac{3}{4}$ of the other whole. So the mixed number is $1\frac{3}{4}$

## Method 2: Using a number line.

- Start at 0 and make 7 jumps of $\frac{1}{4}$.

We jumped past the 1 and are $\frac{3}{4}$ of the way to the next whole number. So the mixed number is $1\frac{3}{4}$

The number $\frac{7}{4}$ is a fraction greater than 1. A fraction greater than 1 can be written as a **mixed number.** A mixed number has a whole number and a fraction. $\frac{7}{4} = 1\frac{3}{4}$

The video at: https://learnzillion.com/lessons/1438-represent-a-fraction-greater-than-one-using-area-models may be helpful.

## Lesson 13: Equivalent Fractions.

**Objective:** To represent equivalent fractions with drawings.

**Description:** Some videos that may help the children are:

https://learnzillion.com/lessons/531-use-area-models-to-generate-equivalent-fractions

https://learnzillion.com/lessons/616-recognize-equivalent-fractions-using-area-models

## Lesson 14: Equivalent Fractions from a multiplication table.

**Objective:** To generate equivalent fractions using a multiplication facts.

**Description:** By the end of 3<sup>rd</sup> grade the children are familiar with their multiplication facts. After they are able to represent and generate fractions with pictures, we want them to use their multiplication facts to generate equivalent fractions. In other words, we want them to multiply the numerator and denominator of a fraction by the same values to create equivalent fractions.

$$\frac{2}{5} \times \frac{2}{2} = \frac{4}{10} \qquad\qquad \frac{2}{5} \times \frac{3}{3} = \frac{6}{15} \qquad\qquad \frac{2}{5} \times \frac{4}{4} = \frac{8}{20}$$

A video can be found at: https://learnzillion.com/lessons/620-generate-equivalent-fractions-by-multiplying-or-dividing-by-1
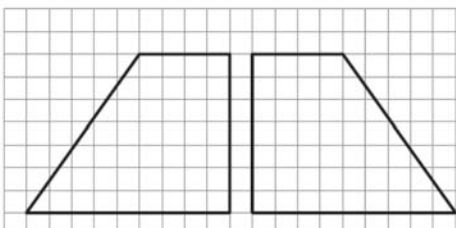
## Lesson 15: Checkpoint.

**Objective:** To review all of the topics from lesson 11 - 14.
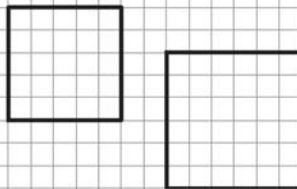
## Lesson 16: Same Size, Same Shape.

**Objective:** To recognize shapes that are the same shape and the same size.

**Description:** This lesson builds the foundation to similarity (shapes that are the same shape) and congruence (shapes that are the same size and shape).
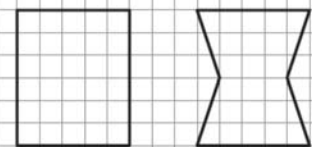
| Same shape and same size: | Same shape but not the same size: | Not the same shape: |
|---|---|---|

**Lesson 17: Change Customary Units of Length.**

**Objective:** To convert feet into inches.

**Description:** In this lesson the children convert feet to inches. They could multiply the number of feet by 12 to find the number of inches.

1 foot = 12 inches

___4___ feet = ___48___ inches

x 12

**Lesson 18: Change metric Units of Length.**

**Objective:** To convert feet into inches.

**Description:** In this lesson the children convert meters to centimeters. They could multiply the number of meters by 100 to find the number of centimeters.

1 meter = 100 centimeters

___4___ meters = ___400___ centimeters

x 100