

## **Learn at Home Resource Packet – General Overview**

### **Grade 3**

This New York State Next Generation Mathematics Learning Standards aligned packet of resources is designed for students and their caregivers who wish to support in-school learning with activities that can be done independently and/or with a partner outside of school. The packet includes five activities that support the major mathematical work of the grade with a particular focus on building grade level numeracy. In grade 3, students' ability to fluently add/subtract within 1000 and multiply/divide within 100 is required as it supports their ability to engage conceptually with important content of the year. These activities should each take 40-60 minutes (although many can be extended) and may be completed in any order.

**How to use this guide** - For most activities, you will find:

- information about the standards both content and practice that the activity supports;
- a description and/or instructions for the activity;
- materials required;
- one or more focus or discussion questions that will help deepen the learning of the activity;
- and suggestions for extending or adjusting the activity.

## Activity

# How Close to 100

From [www.Youcubed.org](http://www.Youcubed.org)

## ***NYS Next Generation Math Learning Standard(s)***

### **Represent and Solve Problems Involving Multiplication and Division**

NY-3.OA.3

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.

NY-3.OA.4

Determine the unknown number in a multiplication or division equation relating 3 whole numbers.

### ***Multiply and Divide within 100***

NY-3.OA.7a

Fluently solve single-digit multiplication and related division, using strategies such as the relationship between multiplication and division or properties of operations.

### ***Mathematical Practice(s)***

MP1: Make sense of problem and persevere in solving them

MP4: Model with Mathematics

### ***Description:***

This game is played in partners. Two children share a blank 100 grid. The first partner rolls two number dice. The numbers that come up are the numbers the child uses to make an array on the 100 grid. They can put the array anywhere on the grid, but the goal is to fill up the grid to get it as full as possible. After the player draws the array on the grid, she writes in the number sentence that describes the grid. The second player then rolls the dice, draws the number grid and records their number sentence. The game ends when both players have rolled the dice and cannot put any more arrays on the grid. How close to 100 can you get? Each child can have their own number grid. Play moves forward to see who can get closest to 100.

### ***Materials:***

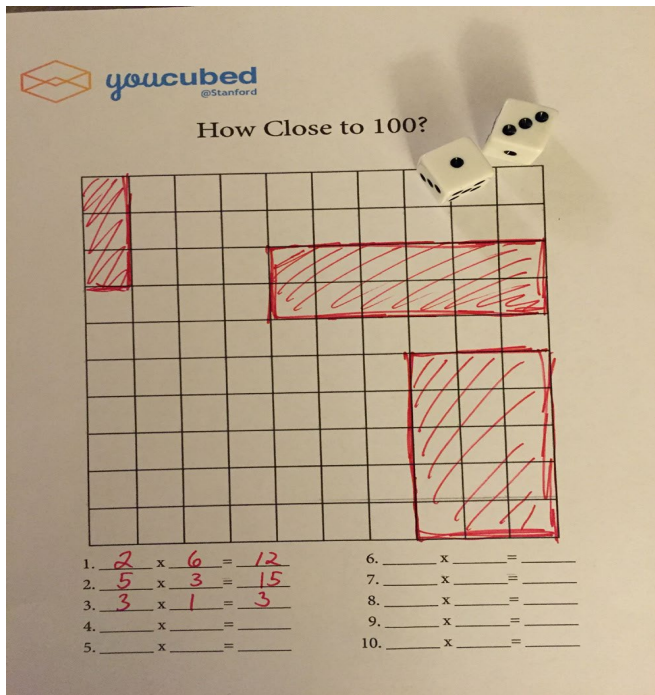
- two players
- two dice or 1-6 cards (included)
- recording sheet (included)
- 2 colors of crayons or markers

### ***Questions for parents to ask while playing:***

- How did you figure out the product? Did you just know it?
- What did you learn about multiplying?
- How can arrays be used to help you with multiplication?

**Extension**

This game is one that can be played over and over with a variety of partners, each time it will be different and will give your child many opportunities to practice their multiplication facts in a fun way. Additionally, your child will practice drawing arrays to represent the multiples.



1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6



### How Close to 100—Game Sheet


1. \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_

6. \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_

2. \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_

7. \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_

3. \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_

8. \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_

4. \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_

9. \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_

5. \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_

10. \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_

**Activity**

## Flower Planting

From *enVisionmath2.0*, Pearson Publishing.

***NYS Next Generation Math Learning Standard(s)***

***Multiply and Divide within 100***

NY-3.0A.7a

Fluently solve single-digit multiplication and related division, using strategies such as the relationship between multiplication and division or properties of operations.

***Mathematical Practice(s)***

MP1: Make sense of problem and persevere in solving them

**Activity**

Flowers have a variety of color and colors and smells. Flowers inherit these traits through genes. Just like flowers, the color of your eyes comes through genes. Use the table below to answer the questions below.

Flower Plants in Umberto's Garden				
		Color		
		Red	Pink	White
Stem Length	Long	12	24	12
	Short	4	8	4

1. Can Umberto share his long-stemmed white flower plants evenly among 3 flower beds? Draw a picture to show why or why not.

2. Umberto arranged the long-stemmed pink flower plants evenly into 4 beds. How many plants are in each bed? Draw a diagram and write an equation to show how to solve.





**Activity**

**Close to 100 Close to 1000**

*Adapted for and developed by the New York City Department of Education*

***NYS Next Generation Math Learning Standard(s)***

**Use place value understanding and properties of operations to perform multi-digit arithmetic**

NY-3.NBT.2

Fluently add and subtract within 1000, using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

***Mathematical Practice(s)***

MP1: Make sense of problem and persevere in solving them

MP7: Look for and make use of structure

***Activity Description***

Close to 100 and Close to 1000 are games to be played in pairs. It gives your child strategic practice with adding sums for both 100 and 1000.

***Materials***

- Deck of playing cards
- Game recording sheets

***Extension***

If your child needs additional practice with combinations for 100, “Close to 100” is a good game to play. If your child wants to work on combinations of 1000 “Close to 1000” is appropriate.

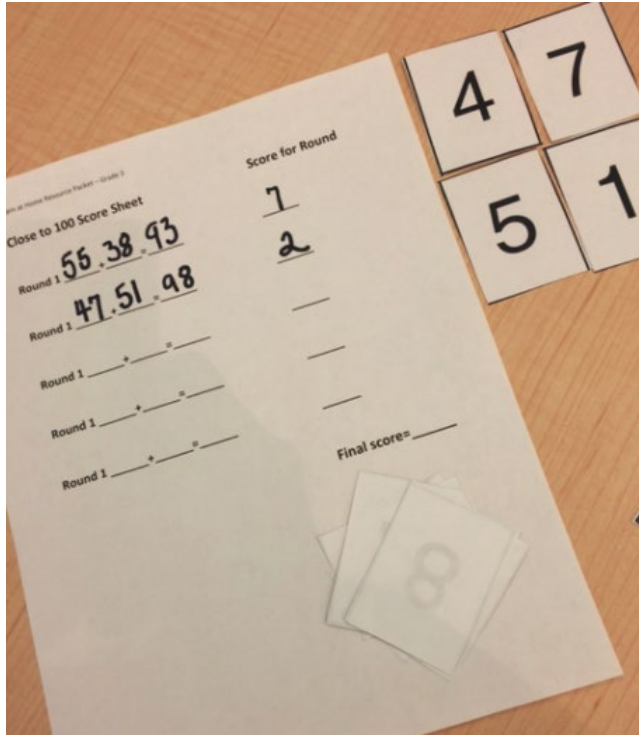
## **Game Directions: Close to 100**

“Close to 100” is played with a deck of 44 cards—four cards each of the digits 0-9, plus four wild cards. Each pair of players needs one deck; each player needs a score sheet.

The object of the game is to create two 2-digit numbers that sum as close to 100 as possible. Each game has 5 rounds.

For round 1, deal six cards to each player. Players then choose any four of their six cards to make two 2-digit numbers that, when added, come as close to 100 as possible. Wild cards can be assigned any value. Players record their numbers and total on their sheets. The player’s score for each round is the difference between the total and 100. (102 and 98 are both scored as 2.) The used cards are discarded and four new cards are dealt to each player. Each player will have six cards at the beginning of a round: two that are left from the previous round, and four new cards.

At the end of five rounds the player with the lowest total score wins.



### Close to 100 Score Sheet

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

### Score for Round

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Round 1** \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

**Final score=** \_\_\_\_\_

**Close to 100 Score Sheet**

**Score for Round**

**Round 1** \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

**Round 1** \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

**Round 1** \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

**Round 1** \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

**Round 1** \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

**Final score=** \_\_\_\_\_

## **Game Directions: Close to 1000**

“Close to 1000” is played with a deck of 44 cards—four cards each of the digits 0-9, plus four wild cards. Each pair of players needs one deck; each player needs a score sheet.

The object of the game is to create two 3-digit numbers that sum as close to 1000 as possible. Each game has 5 rounds.

For round 1, deal eight cards to each player. Players then choose any six of their eight cards to make two 3-digit numbers that, when added, come as close to 1000 as possible. Wild cards can be assigned any value. Players record their numbers and total on their sheets. The player’s score for each round is the difference between the total and 1000. (1002 and 980 are both scored as 2.) The used cards are discarded and four new cards are dealt to each player. Each player will have six cards at the beginning of a round: two that are left from the previous round, and four new cards.

At the end of five rounds the player with the lowest total score wins.

## Close to 1000 Score Sheet

## Score for Round

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_

Final score= \_\_\_\_\_

**Close to 1000 Score Sheet**

**Score for Round**

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_

Round 1 \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_

**Final score=** \_\_\_\_\_

**Activity**

**Geometric Pictures of One Half**

From [www.illustrativemathematics.org](http://www.illustrativemathematics.org)

***NYS Next Generation Math Learning Standard(s)***

**Represent and solve problems involving multiplication and division**

NY-3.G.2

Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as  $\frac{1}{4}$  of the area of the shape.

***Mathematical Practice(s)***

MP1: Make sense of problem and persevere in solving them

MP7: Look for and make use of structure

**Task**

For each of the pictures, explain how you can see that half of the square is shaded:



a.



b.



c.



**Activity**

## **Markers in Boxes**

From [www.illustrativemathematics.org](http://www.illustrativemathematics.org)

***NYS Next Generation Math Learning Standard(s)***

**Represent and solve problems involving multiplication and division**

NY-3.OA.2

Interpret whole-number quotients of whole numbers.

NY-3.OA.3

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.

***Mathematical Practice(s)***

MP1: Make sense of problem and persevere in solving them

MP7: Look for and make use of structure

***Description***

Markers in Boxes is an individual activity. Your child may record the solutions on a separate sheet of paper.

***Materials***

- Markers in Boxes task
- Pencil and paper

***Extension***

Your child may describe what they notice about the similarities and differences in the two problems after they solved the problems.

## Markers in Boxes



Presley has 18 markers. Her teacher gives her three boxes and asks her to put an equal number of markers in each box.



Anthony has 18 markers. His teacher wants him to put 3 markers in each box until he is out of markers.

a.

Before you figure out what the students should do, answer these questions:

*What is happening in these two situations? How are they similar? How are they different?*

b. Figure out how many markers Presley should put in each box. Show your work. Then figure out how many boxes Anthony should fill with markers. Show your work.

**Activity G**

**Gifts from Grandma**

From [illustrativemathematics.org](http://illustrativemathematics.org)

***NYS Next Generation Math Learning Standard(s)***

**Represent and solve problems involving multiplication and division**

NY-3.OA.3

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.

***Mathematical Practice(s)***

MP1: Make sense of problem and persevere in solving them

MP4: Model with mathematics

***Description***

Gifts from Grandma is an individual activity. Your child may record the solutions on a separate sheet of paper.

***Materials***

- Gifts from Grandma task
- Pencil and paper

***Extension***

Your child may write multiplication or division equations to represent the situations in each problem.





**Activity**

## **Are They Equal?**

From [illustrativemathematics.org](http://illustrativemathematics.org)

***NYS Next Generation Math Learning Standard(s)***

**Understand properties of multiplication and the relationship between multiplication and division.**

NY-3.OA.5

Apply properties of operations as strategies to multiply and divide.

***Mathematical Practice(s)***

MP3: Construct viable arguments and critique the reasoning of others.

***Description***

Are They Equal? is an individual activity. Your child may record the solutions on a separate sheet of paper.

***Materials***

- Are They Equal? task
- Pencil and paper
- Optional tools for counting: coins, paper clips, cereal, buttons, etc.

***Extension***

Your child may write additional multiplication or division equations that are true.

## Are They Equal?

Are the equations true or false? Explain your answer.

a.  $4 \times 5 = 20$

b.  $34 = 7 \times 5$

c.  $3 \times 6 = 9 \times 2$

d.  $5 \times 8 = 10 \times 4$

e.  $6 \times 9 = 5 \times 10$

f.  $2 \times (3 \times 4) = 8 \times 3$

g.  $8 \times 6 = 7 \times 6 + 6$

h.  $4 \times (10 + 2) = 40 + 2$

<http://tasks.illustrativemathematics.org/content-standards/3/OA/B/5/tasks/1821>



**Activity**

## **The Class Trip**

From [illustrativemathematics.org](http://illustrativemathematics.org)

***NYS Next Generation Math Learning Standard(s)***

**Solve problems involving the four operations, and identify and extend patterns in arithmetic.**

NY-3.OA.8

Solve two-step word problems posed with whole numbers and having whole-number answers using the four operations.

NY-3.OA.8a Represent these problems using equations or expressions with a letter standing for the unknown quantity.

***Mathematical Practice(s)***

MP1: Make sense of problem and persevere in solving them

MP2: Reason abstractly and quantitatively

MP4: Model with mathematics

***Description***

The Class Trip is an individual activity. Your child may record the solutions on a separate sheet of paper.

***Materials***

- The Class Trip task
- Pencil and paper

***Extension***

Your child may brainstorm and make a list of other possible ways they can raise the money needed to go on the field trip.

## The Class Trip

Mrs. Moore's third grade class wants to go on a field trip to the science museum.

- The cost of the trip is \$245.
- The class can earn money by running the school store for 6 weeks.
- The students can earn \$15 each week if they run the store.

- a) How much more money does the third grade class still need to earn to pay for their trip?
- b) Write an equation to represent this situation.

<https://tasks.illustrativemathematics.org/content-standards/tasks/1301>

## Activity

# Fraction Flags

Developed by the New York City Department of Education

### ***NYS Next Generation Math Learning Standard(s)***

#### **Develop understanding of fractions as numbers.**

NY-3.NF.1

Understand a unit fraction,  $\frac{1}{b}$ , is the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts. Understand a fraction  $\frac{a}{b}$  as the quantity formed by  $a$  parts of size  $\frac{1}{b}$ .

NY-3.NF.3b

Recognize and generate equivalent fractions. E.g.,  $\frac{1}{2} = \frac{2}{4}$ ,  $\frac{4}{6} = \frac{2}{3}$ . Explain why the fractions are equivalent. E.g., using a visual fraction model.

#### **Reason with shapes and their attributes.**

NY-3.G.2

Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. E.g., Partition a shape into 4 parts with equal area, and describe the area of each part as  $\frac{1}{4}$  of the area of the shape.

### ***Mathematical Practice(s)***

MP1: Make sense of problem and persevere in solving them

MP2: Reason abstractly and quantitatively

### ***Description***

Fraction Flags is an individual activity. Your child may cut the flags to support the exploration.

### ***Materials***





- Fraction Flags task
- Pencil
- Scissors

### ***Extension***

Your child may do online research to learn more about the countries whose flags were explored in this task; research additional information regarding the design and meaning of these and other flags.



**Fraction Flags** Examine the flags of countries from around the world in the table below. Record your fraction observations. An example of possible observations were provided for the flag of Poland.

Flags	Fraction Observations
 <p data-bbox="402 720 488 751">Poland</p>	<ul style="list-style-type: none"> <li>• There are 2 equal parts</li> <li>• The flag is cut in halves</li> <li>• <math>\frac{1}{2}</math> of the flag is red</li> <li>• <math>\frac{1}{2}</math> of the flag is white</li> </ul>
 <p data-bbox="418 1073 472 1104">Italy</p>	
 <p data-bbox="363 1428 527 1457">Sierra Leone</p>	
 <p data-bbox="402 1743 488 1772">Nigeria</p>	

	
<p>Madagascar</p>	
	
<p>Mauritius</p>	
	
<p>Colombia</p>	
	
<p>Czech Republic</p>	