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

NY State 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 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.
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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.

<table>
<thead>
<tr>
<th>Flower Plants in Umberto’s Garden</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Color</strong></td>
</tr>
<tr>
<td>Stem Length</td>
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</tbody>
</table>

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.
3. Write a division story for 24 divided by 8 = ? Tell how to use repeated subtraction to solve.

4. Umberto plants the red and pink long-stemmed flowers evenly in four rows. How many flowers are in each row? Write to explain how you found the answer.

5. Write a fact family for the number of rows of short-stemmed flowers there should be if Umberto put 8 plants in each row.

6. Write your own problem using the data in the table above.
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 payer. 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

Score for Round

Round 1 _____+_____ =______  _____

Round 1 _____+_____ =______  _____

Round 1 _____+_____ =______  _____

Round 1 _____+_____ =______  _____
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 payer. 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

<table>
<thead>
<tr>
<th>Round 1</th>
<th>Score for Round</th>
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<td><strong><strong><strong>+</strong>_____=</strong></strong>___</td>
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</table>

**Final score=______**
Close to 1000 Score Sheet

Round 1  ______+_______=_______  ______

Round 1  ______+_______=_______  ______

Round 1  ______+_______=_______  ______

Round 1  ______+_______=_______  ______

Round 1  ______+_______=_______  ______

Final score=______
Activity

Geometric Pictures of One Half
From 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 $1/4$ 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:
Activity

Markers in Boxes
From 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.

http://tasks.illustrativemathematics.org/content-standards/3/OA/A/2/tasks/1540
Activity G

Gifts from Grandma
From 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.
Gifts from Grandma

1. Juanita spent $9 on each of her 6 grandchildren at the fair. How much money did she spend?

2. Nita bought some games for her grandchildren for $8 each. If she spent a total of $48, how many games did Nita buy?

3. Helen spent an equal amount of money on each of her 7 grandchildren at the fair. If she spent a total of $42, how much did each grandchild get?

http://tasks.illustrativemathematics.org/content-standards/3/OA/A/3/tasks/262
Activity

Are They Equal?
From 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

**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.
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, 1/ , is the quantity formed by 1 part when a whole is partitioned into b equal parts. Understand a fraction a/b as the quantity formed by a parts of size 1 .
NY-3.NF.3b
Recognize and generate equivalent fractions. E.g., ½ = 2/4, 4/6=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 ¼ 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.

<table>
<thead>
<tr>
<th>Flags</th>
<th>Fraction Observations</th>
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</thead>
</table>
| ![Flag of Poland](image) | • There are 2 equal parts  
• The flag is cut in halves  
• \( \frac{1}{2} \) of the flag is red  
• \( \frac{1}{2} \) of the flag is white |
<p>| <img src="image" alt="Flag of Italy" /> | |
| <img src="image" alt="Flag of Sierra Leone" /> | |
| <img src="image" alt="Flag of Nigeria" /> | |</p>
<table>
<thead>
<tr>
<th>Country</th>
<th>Flag Image</th>
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<tbody>
<tr>
<td>Madagascar</td>
<td><img src="image" alt="Madagascar Flag" /></td>
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<td>Mauritius</td>
<td><img src="image" alt="Mauritius Flag" /></td>
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<tr>
<td>Colombia</td>
<td><img src="image" alt="Colombia Flag" /></td>
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<tr>
<td>Czech Republic</td>
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