Learn at Home Resource Packet – General Overview
Grade 5

This NYS Next Generation Mathematics Learning Standards aligned packet of resources is designed for students and their parents who wish to support in-school learning with activities that can be done independently and at home. 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 5, students' ability to add and subtract fractions, and multiply and divide multi-digit whole numbers 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 each activity, 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 A

Making S'Mores

NYS Next Generation Mathematics Learning Standard(s)
Understand the place value system.
NY-5.NF.1
Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

Mathematical Practice(s)
MP2 – Reason abstractly and quantitatively.
MP4 – Model with mathematics.

Description
This task challenges the student to add and subtract fractions to solve problems.

Materials
 - Making S'More's task
 - Pencil

Task from http://tasks.illustrativemathematics.org/content-standards/5/NF/A/1/tasks/861

Making S'Mores

Nick and Tasha are buying supplies for a camping trip. They need to buy chocolate bars to make s'mores, their favorite campfire dessert. Each of them has a different recipe for their perfect s'more. Nick likes to use 1/2 of a chocolate bar to make a s'more. Tasha will only eat a s'more that is made with exactly 2/5 of a chocolate bar.

1. What fraction of a chocolate bar will Nick and Tasha use in total if they each eat one s'more?

2. Nick wants to cut one chocolate bar into pieces of equal size so that he and Tasha can make their s'mores. How many pieces should he cut the chocolate bar into so that each person will get the right amount of chocolate to make their perfect s'more?

3. After Nick cuts the chocolate bar into pieces of equal size, how many pieces of the chocolate bar should he get? How many pieces of the chocolate bar should he give to Tasha?

Activity B

Kipton's Scale

NYS Next Generation Mathematics Learning Standard(s)
Understand the place value system.
NY-5.NBT.1
Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.

Mathematical Practices
MP6 – Attend to precision.
MP8 – Look for and express regularity in repeated
reasoning.

Description
By setting the task in the context of weighing objects and bundles of 10, 100, and 1,000 objects, it helps students visualize that bundling 10 units of a given place value will create 1 unit of the next highest place value.

Materials
- Pen/Pencil
- Scratch Paper

Focus questions for discussion
1. After weighing one object how might one predict the weight of 10 or 100 of those same objects?
2. After weighing sets of 10 or 100 objects, how could one predict the weight of 1 of those same objects?

Task from https:
http://tasks.illustrativemathematics.org/content-standards/5/NBT/A/1/tasks/1562

Task

    a. Kipton has a digital scale. He puts a marshmallow on the scale and it reads 7.2 grams. How much would you expect 10 marshmallows to weigh? Why?

    b. Kipton takes the marshmallows off the scale. He then puts on 10 jellybeans and then scale reads 12.0 grams. How much would you expect 1 jellybean to weigh? Why?

    c. Kipton then takes off the jellybeans and puts on 10 brand-new pink erasers. The scale reads 312.4 grams. How much would you expect 1,000 pink erasers to weigh? Why?

Activity C
Sidewalk Patterns

NYS Next Generation Mathematics Learning Standard(s)
Analyze pattern and relationships.
NY-5.OA.3
Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns and graph the ordered pairs on a coordinate plane.
e.g. Given the rule "Add 3" and the starting number 0, and given the rule "Add 6", and the starting number 0, generate terms in the resulting sequences and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

Mathematical Practices
MP3 – Construct viable arguments and critique the reasoning of others.
MP7 – Look for and make use of structure.
MP8 – Look for and express regularity in repeated reasoning.
Description
> This purpose of this task is to help students articulate mathematical descriptions of number patterns.

Materials
 • Paper and pencil

Focus questions for discussion
1. Although the patterns are separate, what relationship do you notice?
2. If both patterns continued indefinitely, what could we observe?

Task from https:
http://tasks.illustrativemathematics.org/content-standards/5/OA/B/3/tasks/1895

Cora:

0	3								

Cecilia:

0	9								

Activity D

Bowling for Numbers

NYS Next Generation Mathematics Learning Standard(s)

NY-5.OA.1 Apply the order of operations to evaluate numerical expressions.

e.g., • 6 + 8 ÷ 2 • (6 + 8) ÷ 2

Note: Exponents and nested grouping symbols are not included

Mathematical Practices

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

MP7 – Look for and make use of structure.

MP8 – Look for and express regularity in repeated
reasoning.

Description

> The purpose of this game is to help students think flexibly about numbers and operations and to record multiple operations using proper notation.

Materials

- 4 dice per team
- Recording sheet
- Two-minute timer for each turn

Focus questions for discussion

1. Why is there a need for order of operations?
2. What are some ways that parentheses can be manipulated to yield different results when expressions are evaluated?
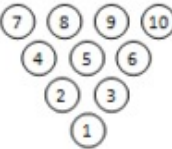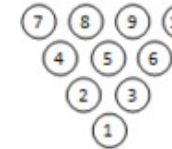
Directions

- Students roll the 4 dice to generate their seed numbers. They then use those 4 numbers to create as many numbers as they can (1 - 10). Scoring is done as in bowling; numbered "pins" are "knocked down" by creating an expression equal to the number.

- During a student's turn, have them record just the expressions (not the intended result), and then pass the set to another student (a judge). That judge then computes each expression as written and records which pins were knocked down.

- Have the students play in teams. Each team tries to achieve a "strike" (knocking down all of the pins, which is almost always possible). Striving for the strike encourages students to brainstorm strategies for the "difficult" numbers, which leads them to discuss parts of each expression they have created already.

Task from https:

Name: _____

1	2	3	4	5	6	7	8	9	10	Total

Frame 1 equations

```
  (7) (8) (9) (10)
   (4) (5) (6)
    (2) (3)
     (1)
```

Frame 2 equations

```
  (7) (8) (9) (10)
   (4) (5) (6)
    (2) (3)
     (1)
```

Frame 3 equations

```
  (7) (8) (9) (10)
   (4) (5) (6)
    (2) (3)
     (1)
```

Frame 4 equations

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  (7) (8) (9) (10)
   (4) (5) (6)
    (2) (3)
     (1)
```

Are these equivalent to 9.52?

NYS Next Generation Mathematics Learning Standard(s)
NY-5.NBT.3 Read, write, and compare decimals to thousandths

Mathematical Practices
    MP3 Construct viable arguments and critique the reasoning of others.

Description
    This task addresses many parts of the "Understand the Place Value System" cluster within t Number and Operations in Base Ten domain. The purpose of this task is to help students develop the understanding that a single base-ten number can be represented in many different ways.

Materials
    Paper
    Pen/Pencil

Focus Questions and Statements for Discussion

1. Explain, in writing, how one could regroup when using subtraction.
2. Use expanded notation to express the number nine hundred fifty-two**.**

Directions

- Many students may be able to directly connect the numeric representation (9.52) with its word form ("nine and fifty two hundredths") as well as its expanded form (9 + 0.5 + 0.02). Explain to the students the importance of clearly explaining how they know the accuracy of what they are stating.
- Allow them time to work individually first. Then, if necessary, have them share their findings with others.

Task from http://tasks.illustrativemathematics.org/content-standards/5/NBT/A/3/tasks/1813

Task

Isaiah is thinking of the number 9.52 in his head. Decide whether each of these has the same value as 9.52 and discuss your reasoning.

- Nine and fifty-two tenths

- 9 + 0.5 + 0.02

- 9 ones + 5 tenths + 2 hundredths

- (9×1)+(5×110)+(2×1100)

- 952 tenths

- 952 hundredths