

5

Mathematics

Activity Sheets (First Quarter)

Department of Education
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M5NS-Ia-1.5

Visualizes numbers up to 10 000 000 with emphasis on numbers 100 001 – 10 000 000

Explore and Discover

An environmental organization collected 27 531 468 plastic bottles for their campaign to recycle the plastic bottles into classroom chair.

How will you represent 27 531 468?

One of the materials you can use to represent 27 531 468 is paper chips.

Below is a chart that shows how can you represent 25 631 478 using paper chips

10 000 000	1 000 000	100 000	10 000	1 000	100	10	1
Two 10 000 000s	Five 1 000 000s	Six 100 000s	Three 10 000s	One 1000s	Four 100s	Seven 10	Eight 1

25 631 478

Get Moving!

Using the same paper chips above, how can you represent the following numbers?

1. 12 645 321
2. 23 142 546
3. 74 243 211

Keep Moving!

Using the given colored paper chips


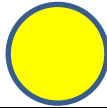
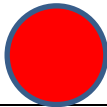
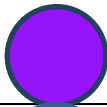
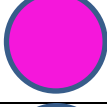
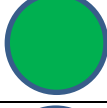
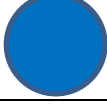

Indicate the number of each paper chips you need to use in the following numbers.

1. 23 648 456
2. 35 456 782
3. 39 876 321
4. 41 345 546
5. 74 342 346

Apply Your Skills!

Read the following items. Then write your answer to each item on your notebook

1. Don Pedro's farmers harvested 23 435 634 pieces of calamansi on his plantation. Represent the number of calamansi using the number chips
2. A total 43 563 234 eggs collected in 2015 from poultry farm of Mr. Antonio. Draw a number chips that represent the number of eggs collected.
3. The National Food Authority imported 36 456 765 kilos of rice from Indonesia. Make a color chips that represent 10 000 000, 1 000 000, 100 000, 10 000, 1 000, 100, 10 and 1 and how to represent the number of kilos of rice.

	10 000 000	White Chips (PC)
	1 000 000	Yellow Chips (RC)
	100 000	Yellow Chips (RC)
	10 000	Purple Chips (PKC)
	1000	Pink Chips (PKC)
	100	Green Chips (GRC)
	10	Blue Chips (BUC)
	1	Black Chips (BKC)

M5NS-Ia-9.5

Reads and writes numbers up to 10 000 000 in symbols and in words

Explore and Discover

According to Commission on Election there were 54 363 844 Filipino registered voters who participated for the election 2016.

How do you read and write the number 54 363 844 in words and in symbol?

The number 54 363 844 is read as **fifty- four million three sixty- three thousand eight hundred forty-four**. "In **symbols** 54 363 844

Get moving!

A. Write the following numerals in words

1. 22 723 961
2. 36 543 765
3. 41 345 657
4. 52 789 342
5. 65 856 321

B. Write the numbers in symbols

1. Twelve million two hundred seventy-two thousand three hundred sixty-five
2. Twenty-six million five hundred twenty-eight thousand four hundred twenty-four
3. Thirty-one million six hundred sixty-one thousand three hundred thirty-eight
4. Forty-two million seven hundred eighty-nine thousand seven hundred forty- two
5. Ninety-four million eight hundred thirty-four thousand five hundred twenty -one

Keep Moving!

Write the following numbers in words

1. 12 723 961
2. 22 346 768
3. 34 435 231
4. 45 678 942
5. 78 923 488

Using all the digit 1,2,3,4,5,6,7 and 8

1. What is the smallest number that can be formed?
Write it in symbol and in words.
2. What is the largest number that can be formed?
Write it in symbol and in words.

M5NS-Ia-15.3

Rounds numbers to the nearest hundred thousand and million

Explore and Discover

The local farmer harvested 4 576 000 kilos of rice for the past 3 years.

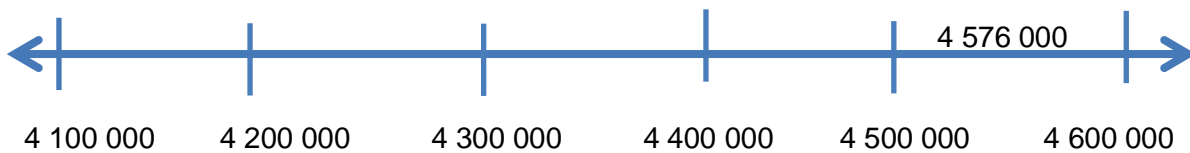
If you going to imagine the kilos of rice they harvested,

How heavy they harvest for the past 3 years?

Let us consider the number 4 576 000 is in between 4 500 000 and 4 600 000 since 4 576 000 is more than a half approaching to 4 600 000.

It simply means 4 600 000 is the round off 4 576 000 to nearest hundred thousand

If we going to imagine how heavy the kilos of rice harvested by the farmer is 4 600 000



Study the table of examples to make it clear.

Numbers	Rounded to	
	Hundred Thousands	Million
13 4 84 947	13 5 00 000	13 000 000
45 5 64 834	45 6 00 000	46 000 000

In rounding numbers, identify the rounding place first, and consider the first digit to be replaced by zero. If this digit is 5 or more, we round up, if less than 5 we round down.

Get Moving

Round each number each number to the hundred thousands.

- 156 753
- 237 523
- 375 231
- 543 732
- 1 678 534

Keep Moving

Round off the following numbers to the indicated nearest place value

- 2 456 346 (hundred thousands)
- 4 564 231 (hundred thousands)
- 5 367 432 (millions)
- 6 435 532 (millions)
- 7 563 321 (millions)

Apply Your Skills!

- What is the largest number that rounds to 3 600 000 to the nearest hundred thousand?
- What is the smallest number that rounds to 4 000 000 to the nearest million?

M5NS-Ib-58.1

M5NS-Ib-58.2

M5NS-Ib-58.3

Uses divisibility rules for 2,3,4,5,6,8,9,10,11,12

Explore and Discover

Lino has homework in his math subject. He wants to find out if 9372 divisible by 11?

Let's help Lino to answer his homework using the table of rules of divisibility.

Divisible	Condition and test	Example
2	Last digit even (= 0,2,4,6 or 8)	For 210, 364,246,2438 the last digit 0, 2 ,4 ,6 and 8 they are all even
3	Add up all the digits in the number Repeat until sum is 2-digits divisible by 3	For 729, $7 + 2 + 9 = 18$ $18, 1 + 8 = 9$ $9 \div 3 = 3$
4	Last two digits divisible by 4 2. Tens digit even and ones digit = 0, 4 or 8 Tens digit odd and ones digit = 2 or 6	<u>332</u> where $32 \div 4$ is 8 32 is the last 2 digit of a number which is divisible by 4
5	Last digit is either 5 or 0	2995, 6490
6	Divisible by 2 (even) and 3	57,342: Last digit = 2 and $5+7+3+4+2=21$ $21 = 7 \times 3$
8	1. Hundreds digit even: last 2 digits divisible by 8 Hundreds digit odd: add 4 to last 2 digits and sum divisible by 8 2. Last 3 digits divisible by 8	986,104: 1. hundreds digit = 1, odd $04 + 4 = 8$ 2. Last 3 digits = 104 $104 = 13 \times 8$
9	Add all the digits in the number Repeat until sum is a 2-digit 2-digits divisible by 9	24,343,785: $2+4+3+4+3+7+8+5=36$ $36 = 4 \times 9$
10	Last digit is 0	540 2910 12 4680 Last digit = 0
11	1. Subtract then add the digits from L to R; result divisible by 11 2. Alternately Subtract last digit from the rest	918,082: $9 - 1 + 8 - 0 + 8 - 2 = 22$ Or $(9 + 8 + 8) - (1 + 0 + 2) = 25 - 3 = 22$ $22 = 2 \times 11$ 627: $62 - 7 = 55$ $55 = 5 \times 11$
12	Divisible by 3 and 4	324: $3 + 2 + 4 = 9$, divisible by 3 24 divisible by 4

Let's try Lino's homework if 9372 is divisible by 11

Since the number 9372 according to the rule we simply add the digits $9 + 3 + 7 + 2 = 22$ then 22 is a multiple of 11 therefore 9372 is divisible by 11.

Get Moving

Study the table and find the answer by applying the divisibility rule. Put a check on the blank boxes which the given number is divisible.

Given number	2	3	4	5	6	8	9	10	11	12
2 364										
5 382										
3 210										
6 547										
10 452										
12 618										
18 351										
22 618										
50 402										
452										
353										

Keep Moving

Circle the numbers which are divisible by 11, square the numbers which are divisible by 9 and underline the numbers which are divisible by 12. If it is divisible 9 and 12 put a star above the number.

35 172

40 700

54 270

92 818 94 563

Apply Your Skills

Make a list of five 3 digit numbers which are divisible by all of this numbers 2, 3, 4 and 12.

1. _____
2. _____
3. _____
4. _____
5. _____

M5NS-Ic-59

Solves routine and non – routine problems involving factors, multiples, and divisibility rules for 2, 3,4,5,6,8,9,10,11, and 12

Explore and Discover

If a number has factor and multiples of 9 it must be divisible by 3.

Let's find out if this statement is true?

36 is one of the multiples of 9 also a factor. We shall add digit of 36 which is equal to 9

Where 9 is divisible by 3

Therefore, if a number has a factor of 9 and multiples of 9 it is also divisible by 3.

Get Moving

Determine if the numbers are divisible by the given number

Tell whether each number is divisible by 2, 3, 4, 5, 6, 9, or 10.

1. 25 _____ 2. 32 _____ 3. 124 _____

Tell whether the first number is a multiple of the second.

4. 45; 2 _____ 5. 155; 5 _____

Keep Moving

In each of the following numbers without doing actual division, determine whether the first number is divisible by the second number. Put YES or NO before the number.

1. 3409122; 6
2. 17218; 6
3. 11309634; 8
4. 515712; 8
5. 3501804; 4

Apply your skills

1. Six is a factor of 12066 and 49320. Is 6 a factor of $49320 + 12066$ and $49320 - 12066$?
2. Is 9 a factor of the following?
394 683 1 872 546 5 172 354

M5NS-Ic-61.2

M5NS-Ic-62.2

States, explains, interpret and simplify a series of operation using the PMDAS or GMDAS

Explore and Discover

PMDAS mean **P**arenthesis **M**ultiplication, **D**ivision, **A**ddition and **S**ubtraction

GMDAS **G**rouping, **M**ultiplication, **D**ivision, **A**ddition and **S**ubtraction

$$42-9 \times 2 + (24 \div 8) = N$$

First we perform the operation inside the parenthesis. In this example parenthesis use as grouping symbol

$$42-9 \times 2 + (3) = N$$

Then perform the multiplication

$$42-18+3 = N \text{ where } -18 + 3 = -15$$

Next perform addition

$$42-15=27 \quad N=27$$

Get Moving!

Perform the indicated operation

1. $50 \times 2 + 24 \div 2 =$
2. $45 - 15 \div 3 + 5 =$
3. $64 \div 8 + 19 - 10 =$
4. $34 - 12 \times 4 + 20 =$
5. $49 \times 3 - 5 + 7 =$

Keep Moving!

Complete the series of operation with \div , \times , $+$ and $-$ and use parenthesis if needed.

1. $9 _ 2 _ 3 _ 4 = 17$
2. $8 _ 5 _ 2 _ 2 = 9$
3. $8 _ 4 _ 5 \div 5 = 11$
4. $7 _ 4 _ 2 _ 1 = 9$
5. $12 _ 4 _ 2 _ 3 = 4$

Apply your skills

1. Mother has 3 dozen of eggs for making leche plan. Each tray consumes 3 eggs only 7 trays mother have. If mother cooked leche plan for 7 trays how many eggs left?
2. Father has 36 different types of animals. If going to remove the half of it, the remaining animals are dogs, cats and chickens. The number of cats is twice the number of dogs and only 2 chickens father have. What is the exact number of dogs?

M5NS-Id-68.2

Finds the common factors and the GCF using continuous division

Explore and Discover

Let's find the common factors and GCF (Greatest Common Factor) of 99 and 132

$$\begin{array}{r}
 3 \overline{) 99} \\
 \underline{33} \\
 11
 \end{array}
 \qquad
 \begin{array}{r}
 3 \overline{) 132} \\
 \underline{33} \\
 11 \overline{) 44} \\
 \underline{22} \\
 2 \overline{) 4} \\
 \underline{2} \\
 2
 \end{array}$$

The common factors of 99 and 132 are **3** and **11**The GCF of 99 and 132 is $11 \times 3 = \mathbf{33}$ **Get Moving**

Find the GCF. Using the continuous division

- | | |
|-------------------|-------|
| 1. 12, 24, 36 | GCF = |
| 2. 22, 33, 44, 66 | GCF = |
| 3. 36, 54, 72 | GCF = |
| 4. 18, 45, 54, 90 | GCF = |
| 5. 50, 75, 125 | GCF = |

Keep Moving!

Give the Common Factors and GCF. Using continuous division

	Common Factors	GCF
1. 22, 24, 34,		
2. 15, 40, 110		
3. 21, 24, 36		
4. 30, 45, 60		
5. 18, 90, 180		

Apply your skills

1. A cloth merchant has a cloth of length 121 meter and other of length 77 meter which he wishes to cut into strips of equal length. How many meters long strips should he cut so that he gets strips of equal length as long as possible?
2. Jessica wants to make a garland out of 8 roses, 12 daisies and 48 marigolds. How many arrangements can she make with those flowers so that there is no flower left?

M5NS—Id-69.2

Finds the common multiples and LCM of 2-4 numbers using continuous division

Explore and Discover

Let's learn to discover on how to find the multiples of 2 or more numbers

Do the listing method

5	= 5	10	15	20	25	30	35	40	45	50
10	= 10	20	30	40	50	60	70	80	90	100
50	= 50	100	150	200	250	300	350	400	450	500

50 is least common multiple of 5, 10 and 50

Do the continuous division or prime factorization

5 = 5 x 1

10 = 5 x 2

50 = 5 x 5 x 2

Let's multiply the GCF and the other factors

5 x 5 x 2 = 50 is the LCM of 5, 10 and 50

We shall multiply the GCF of 3 numbers which is 5 to the other factors of two numbers which are 5 and 2.

Get Moving!

1. 2 and 7 2. 4 and 10 3. 4 and 5 4. 6 and 10 5. 4 and 12
 LCM = _____ LCM = _____ LCM = _____ LCM = _____ LCM = _____

Keep Moving

Find the LCM of the following sets of numbers.

	LCM
1. 20, 24, 60	
2. 18, 45, 90	
3. 6, 7, 21	
4. 7, 11, 77	
5. 4, 12, 36,	

Apply Your Skills

- Remarkably, Gilbert knocks down 8 pins on every bowl, and Paul knocks down 9 pins on every bowl. At the end of the day, Gilbert and Paul have knocked down the same total number of pins. What is the least number of total pins that Sam and Carlos could have each knocked down?
- What is the least common multiple of 4 and 9?

M5NS-Ie-70.2

Solves real-life problems involving GCF and LCM of 2-3 given numbers

Explore and Discover

In our previous activity you learn finding GCF and LCM of set of numbers let's apply your learning into real life situation.

A teacher is to arrange 60 boys and 72 girls in rows. He wishes to arrange them in such a way that only boys or girls will be there in a row. Find the greatest number of students that could be arranged in a row.

Solution:

The problem would be solved by finding the greatest common factor of 60 and 72.

Prime factors of 60 are given as follows:

$$60 = 2 \times 2 \times 3 \times 5$$

Prime factors of 72 are given as follows:

$$72 = 2 \times 2 \times 2 \times 3 \times 3$$

$$\text{Greatest common factor} = 2 \times 2 \times 3 = 12$$

Therefore, there could be 12 students in each row either boy or girl.

Get Moving

Solve and answers the following problems

1. Grace just received two separate gifts from her grandmother. The first gift is a box of 18 chocolate candy bars, and the second gift is a pack of 12 cookies. Grace wants to use all of the chocolate candy bars and cookies to make identical snack bags for her cousins. What is the greatest number of snack bags that Grace can make?
2. Incredibly, Joem wins 5 tickets from every game, and Marife wins 11 tickets from every game. When they stopped playing games, Joem and Marife had won the same number of total tickets. What is the minimum number of games that Joem could have played?

Keep Moving

Solve and answers the following problems

1. John has 39 pairs of shoes and 13 baseball cap. Tim wants to sell all of the shoes and baseball cap in identical packages. What is the greatest number of packages Tim can make?
2. Ronald and Tim both did their laundry today. Ronald does laundry every 6 days and Tim does laundry every 9 days. How many days will it be until Ronald and Tim both do laundry on the same day again?

Apply Your Skills!

1. Ramil and Allan both did their laundry today. Ramil does laundry every 6 days and Allan does laundry every 9 days. How many days will it be until Ramil and Allan both do laundry on the same day again?
2. Myrna's mom is buying hot dogs and hot dog buns for the family barbeque. Hot dogs come in packs of 12 and hot dog buns come in packs of 9. The store does not sell parts of a pack and Myrna's mom wants the same number of hot dogs as hot dog buns. What is the smallest total number of hot dogs that Myrna's mom can purchase?

M5NS-Ie-71.2

Creates problems (with reasonable answers) involving GCF and LCM of 2-3 given numbers

Explore and Discovery

In the previous lesson you solve and find the answer on real life situation.

In this activity you learn to discover on how to create problem involving GCF and LCM.

Do the following steps how to create word problems.

1. First familiarize yourself with the concept of GCF and LCM and their application to real life situation.
2. Think of the type of problem you want to create.
3. Read some problems and study their solution..
4. Make a problem that is related to the given

Study the given example.

Lenny is baking cookies to put in packages for a fundraiser. Lenny has made 86 chocolate chip cookies and 42 sugar cookies. Lenny wants to create identical packages of cookies to sell, and she must use all of the cookies.

Think of the type of the question you want to create

What is the greatest number of identical packages that Lenny can make?

Try to solve and find the answer to the question you made and if it's clear and easy to understand.

This are the tips that you need to understand.

Get Moving

Write 2 questions to complete each item. Then solve each problem

1. World of fun sells cups in packages of 6 and plates in packages of 8. Aileen is hosting a birthday party for her little sister and wants to have the same number of each item.
2. Shai is helping her classmates to get ready for their math test by making them identical packages of pencils and calculators. He has 72 pencils and 24 calculators and he must use all of the pencils and calculators.

Keep Moving

Write a problem for the numbers and phrases.

1. 10 and 12 oranges in a tray least number
2. 4 and 5 chocolates boxes

Apply your skills

Creates 2 problems involving GCF and LCM based on the situation inside your classroom.

M5NS-Ie-84**M5NS-Ie-85**

Adds and subtracts fractions and mixed fractions without and with regrouping

Explore and Discover

Let s learn to add and subtract different kind of fraction by the examples shows

Adding similar fraction	Subtracting similar fraction
$\frac{4}{17} + \frac{3}{17} = \frac{7}{17}$	$\frac{4}{17} + \frac{3}{17} = \frac{1}{17}$
Adding dissimilar fraction	Subtracting dissimilar fraction
$\frac{3}{4} + \frac{1}{7} = \frac{7(3)+4(1)}{28} = \frac{21+4}{28} = \frac{25}{28}$ <p>To add dissimilar fractions, we first express them as similar fractions by finding their common denominator.</p> <p>To find the least common denominator (LCD) of two or more denominators we mean to find the LCM of the denominators.</p> <p>Or Do this Rename into similar fraction</p> $\frac{3 \times 7}{4 \times 7} + \frac{1 \times 4}{7 \times 4} =$ $\frac{21}{28} + \frac{4}{28} = \frac{25}{28}$	$\frac{3}{4} + \frac{1}{7} = \frac{7(3)-4(1)}{28} = \frac{21-4}{28} = \frac{17}{28}$ <p>To subtract dissimilar fractions, we first express them as similar fractions by finding their common denominator.</p> <p>To find the least common denominator (LCD) of two or more denominators we mean to find the LCM of the denominators.</p> <p>Or Do this Rename into similar fraction</p> $\frac{3 \times 7}{4 \times 7} - \frac{1 \times 4}{7 \times 4} =$ $\frac{21}{28} - \frac{4}{28} = \frac{17}{28}$
Adding fraction to a mixed fraction with the same denominator	Subtracting fraction to a mixed fraction with the same denominator
$3\frac{3}{5} + \frac{1}{5} = 3\frac{4}{5}$	$3\frac{3}{5} - \frac{1}{5} = 3\frac{2}{5}$
Adding fraction to a mixed fraction with different denominator	Subtracting fraction to a mixed fraction with different denominator

Get Moving

Add the following fraction and mixed fraction. Write each answer in simplest form

1. $\frac{5}{9} + \frac{4}{9} =$
2. $\frac{5}{9} + \frac{4}{13} =$
3. $8\frac{1}{4} + \frac{11}{13} =$
4. $11\frac{13}{18} + 13\frac{5}{18} =$
5. $9\frac{1}{3} + 9\frac{1}{5} =$

Subtract the following fraction and mixed fraction. Write each answer in simplest form

6. $\frac{5}{9} - \frac{4}{9} =$

7. $\frac{5}{9} - \frac{4}{13} =$

8. $8\frac{1}{4} - \frac{11}{13} =$

9. $11\frac{13}{18} - 13\frac{5}{18} =$

10. $9\frac{1}{3} - 9\frac{1}{5} =$

Keep Moving

Add and subtract. Express the answer in lowest term, if possible

	sum	difference
1. $10\frac{4}{7}, 8\frac{3}{14}$		
2. $33\frac{1}{3}, \frac{5}{6}$		
3. $\frac{78}{7}, 5\frac{1}{2}$		
4. $14\frac{1}{11}, \frac{3}{22}$		
5. $12\frac{1}{12}, \frac{12}{9}$		

Apply your skills!

1. Mang Canor buys $\frac{2}{3}$ sack of rice. He gave $\frac{1}{4}$ of it to his brother. What part of sack of rice left?
2. In one week, Elizabeth's family drank $3\frac{5}{8}$ cartons of regular milk and $4\frac{1}{8}$ cartons of soy milk. How much milk did they drink in all?

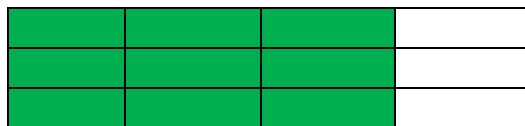
M5NS-If-87.2

Solves routine and non-routine problems involving addition and subtraction of fraction using appropriate problem solving strategies and tools

Explore and Discover

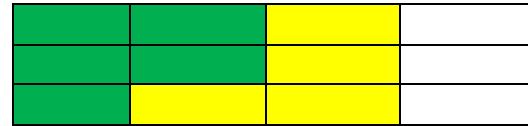
Kira worked $\frac{5}{12}$ of the problems on her math test in the first hour. After the second hour, she had worked $\frac{9}{12}$ of the problems. What fraction of the problems did she work in the second hour?

Solution:



Second hour

$\frac{9}{12}$



First hour

$\frac{5}{12}$

we shall subtract $\frac{9}{12} - \frac{5}{12} = \frac{4}{12}$ or $\frac{1}{3}$

Get Moving

Solve the following and express the answer in simplest form if possible.

1. Stacy is measuring milk to make pancake batter. The recipe calls for $\frac{3}{4}$ cup of milk. She has $\frac{1}{4}$ of a cup now. How much more milk does she need?
2. Andrei has a job in the circus walking on stilts. Andrei is $\frac{11}{10}$ meters tall. The foot supports of his stilts are $\frac{23}{10}$ meters high. How high is the top of Andrei's head when he is walking on his stilts?

Keep Moving

1. Lina had some money. She spent $\frac{1}{2}$ of it on a hand bag and $\frac{1}{3}$ of the remainder of the blouse. She had ₱260 left. How much money did she have at start?
2. Alvin had 450 tickets. He sold $\frac{1}{2}$ to Antonio and $\frac{1}{4}$ to Jason. Draw the representation of the fraction

Apply your skills

Compute each problem.

1. There are 432 balls and marbles altogether. $\frac{1}{4}$ of the balls and $\frac{1}{3}$ of the marbles are green. The remaining balls and marbles are yellow and are equal in number. How many yellow marbles are there?
2. Joseph took 400 items test. He answered only $\frac{3}{5}$ of test items. By what fraction didn't answer by Joseph and how many remained unanswered?

M5NS-If-88.2

Creates problems (with reasonable answer) involving addition and/or subtraction of fractions using appropriate problem solving strategies.

Explore and Discover

You can create a word problem by observing the following guide

- Familiarize yourselves with the concepts of addition and subtraction of fraction and their application to real life situations.
- Think of the problem you want to write.
- Read some problems and study their solutions.

Study the example

Rene is allowed to play video games for $\frac{5}{3}$ hours each day. He has already played for $\frac{4}{3}$ hours a day.

What fraction of an hour does Isaac have left to play video games today?

Get Moving

Create 2 problems based on the given and situation below

Lino wants to mix $\frac{3}{8}$ of a gallon of red paint with $\frac{7}{8}$ of a gallon of blue paint to make purple paint.

Problem/Question _____

Answer/ Solution _____

Keep Moving

Read and create a problem based on situation given.

Mang Isidro a background farmer has many vegetables $\frac{2}{9}$ of them are cabbage, $\frac{3}{7}$ of the remainder are squash and the rest are carrots.

Problem/Question _____

Answer/ Solution _____

Apply Your Skills

Use the following information to create a problem.

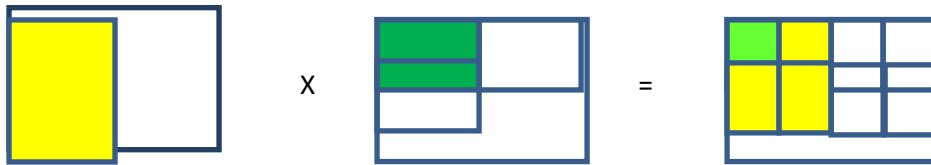
1. Nilo $\frac{3}{5}$, $\frac{5}{7}$ milk
2. Joseph apple $\frac{1}{5}$
Peter mango $\frac{4}{9}$
Aljhun guava $\frac{2}{3}$

M5NS-If-89**M5NS-If-90.1**

Visualizes and multiplies a fraction and a whole number and another fraction

Explore and Discover

Let's multiply the fraction by representation



by solution

$$\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$$

Let's study the different rules in multiplying fraction

A. Multiply Fractions

To multiply pairs of similar fraction, denote as $\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$

Multiply the numerator by a numerator then the denominator by a denominator

$$\frac{3}{5} \times \frac{2}{7} = \frac{3 \times 2}{5 \times 7} = \frac{6}{35}$$

B. Multiply a whole number by a fraction

To multiply a whole number by a fraction, denote as: $a \times \frac{c}{d} = \frac{ac}{d}$

Where the denominator of a is 1

$$3 \times \frac{2}{7} = \frac{3 \times 2}{7} = \frac{6}{7}$$

C. Multiply a mixed fractions and a fraction

To multiply mixed fractions by a fraction is denote as: $n\frac{a}{b} \times \frac{c}{d} = \frac{nb+a}{b} \times \frac{c}{d}$

$$3\frac{2}{7} \times \frac{2}{7} = \frac{23}{7} \times \frac{2}{7} = \frac{46}{49}$$

Get Moving!

Multiply and represent the following fractions

1. $\frac{4}{5} \times \frac{3}{8} =$
2. $\frac{1}{2} \times \frac{3}{8} =$
3. $2\frac{1}{2} \times \frac{3}{8} =$
4. $\frac{1}{2} \times 6\frac{3}{8} =$
5. $2\frac{1}{7} \times \frac{1}{11} =$

Keep Moving!

Find the product of the following

1. $12 \times \frac{1}{11} =$

2. $2\frac{1}{7} \times \frac{13}{15} =$

3. $5\frac{1}{73} \times \frac{1}{3} =$

4. $22 \times \frac{3}{12} =$

5.

6. $2\frac{3}{7} \times \frac{5}{6} =$

Apply Your Skills

1. There were 321 pupils in Vinitahan Elementary School $\frac{1}{3}$ of them were girls. What is the number of girls in Vinitahan Elementary School?
2. Peter and Isko both of them have $\frac{2}{5}$ of total number marble. If total number of marbles is 3560. How many is the remaining number of marbles?

M5NS-Ih-92.1

Solves routine or non-routine problems involving multiplication without or with addition or subtraction of fractions and whole numbers using appropriate problem solving strategies and tools

Explore and Discover

Pedro spent $\frac{1}{3}$ of his money on food and $\frac{1}{4}$ of the remainder on electricity and water bill. If he had Php.190 left, how much money did Pedro spent?

Let's add the two fractions

$$\frac{1}{3} + \frac{1}{4} = \frac{4(1)+3(1)}{12} = \frac{7}{12}$$

$$\frac{12}{12} - \frac{7}{12} = \frac{5}{12}$$

Let's do this solution to find the total amount

$$\text{P}190 = \frac{5}{12} \text{ then solve the value per unit } \frac{190 \times 12}{5} = \text{P}456$$

Then we find value of $\frac{7}{12}$

$$456 \times \frac{7}{12} = \frac{456 \times 7}{12} = \frac{3192}{12} = \text{P}266 \text{ is the total money spend by Pedro}$$

or we can do this $\text{P}456 - \text{P}190 = \text{P}266$

Get Moving

Solve the following problems

1. Two-fifths of the passengers in the passenger boat were boys. $\frac{1}{3}$ of them were girls and the rest were adult. If there were 60 passengers in the boat, how many more boys than adult were there?
2. The Division of Albay held a Math camp. There were 200 registered participants. $\frac{3}{5}$ of them were grade 6 pupils and $\frac{1}{10}$ of them were grade 4 pupils. What is the total number of grade 6 and grade pupils joined in the math camp?

Keep Moving

Solve the following word problem.

1. Teacher Evelyn bought 360 pieces of cupcake for the outreach program of their school. $\frac{5}{9}$ of the cupcakes were chocolate flavor and $\frac{1}{4}$ were pandan flavor and the rest were vanilla flavor. How much more chocolate flavor cupcakes than vanilla flavor?
2. After Mika has read the first $\frac{5}{7}$ of a book, there were 490 pages of the book. What is the number of pages of the book were already read?

Apply Your Skills

Solve and answer the following problem

1. In the GPTA meeting, $\frac{1}{2}$ who attended the meeting were mothers and $\frac{1}{4}$ were fathers and the rest were older brothers and sisters. If the number mothers attended the meetings were 180, how many fathers attended the meeting?
2. Liza a store owner buys 560 notebooks. He sold $\frac{3}{8}$ of the notebook then she adds the stocks of notebook of $\frac{1}{4}$ of the number of notebooks she bought. What is the total number of notebook she bought?

M5NS-Ih-93.1

Creates problem (with reasonable answer) involving multiplication of fraction

Explore and Discover

You can create a word problem by observing the following guide

- Familiarize yourselves with the concepts of addition and subtraction of fraction and their application to real life situations
- Think of the problem you want to write
- Read some problems and study their solutions.

Study the given example

Allen made strawberry jam and guava jam. He made enough strawberry jam to fill 9 jars. If he made $\frac{3}{4}$ as much guava jam as strawberry jam,

This one of the possible problem you can ask
How many jars will the guava jam fill?

Make a solution to the problem you made
Allen made enough guava jam to fill $\frac{3}{4}$ times 9 jars.
Mutiply $\frac{3}{4} \times 9 = \frac{27}{4}$ or $6\frac{3}{4}$ jars

Get Moving

Use the situation below make possible problem and provide a solution to the problem you made

1. Arnel had $\frac{7}{12}$ of what Tinoy had. Katrice had 360 marbles less than Tinoy. If he had $\frac{1}{4}$ more than Arnel,
Problem/Question _____
Answer/ Solution _____
2. John Wayne bottle had $2\frac{1}{2}$ cups of juice in it. He drank $\frac{1}{3}$ of the juice in his bottle
Problem/Question _____
Solution/Answer _____

Keep Moving

Use the data below to create a word problem involving multiplication of fraction

Name	Unit	Number of person
Arevalo	liter	10
AnezaMarie	liter	8

Problem/Question _____
Solution/Answer _____

Apply your Skills

Create a word problem based on the number sentences below.

1. $6\frac{1}{3} \times \frac{1}{3} = N$
2. $10 \times \frac{1}{5} = N$

M5NS-Ih-94

M5NS-Ih-95

M5NS-Ih-96.1

Visualize and divides simple fraction , whole numbers by a fraction and vice versa

Explore and Discover

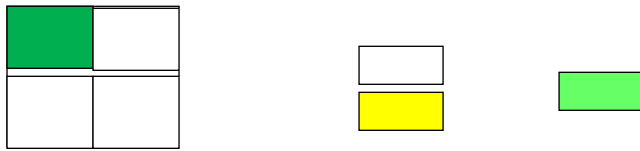
Before we divide the fraction we need to develop first you needed skills in dividing fraction.

Let's show how fraction is equal to 1

In order to make $\frac{2}{3}$ Equal to 1 we need to multiply by its reciprocal which is $\frac{3}{2}$.

$$\frac{2}{3} \times \frac{3}{2} = \frac{6}{6} \text{ or } 1$$

Let's represent how to divide fraction



$$\frac{1}{4} \div \frac{1}{2} =$$

↓ ↓ ↓

$$\frac{1}{4} \times \frac{2}{1} = \frac{2}{4} \text{ or } \frac{1}{2}$$

To divide a fraction or a mixed number by another fraction or a mixed number by another fraction or a mixed number, **multiply** the dividend by the **reciprocal** of the **divisor**.

Get Moving

Write the reciprocal of each fraction.

1. $\frac{5}{19}$

2. $\frac{7}{9}$

3. $\frac{3}{4}$

4. $\frac{5}{9}$

5. $\frac{9}{17}$

Keep Moving!

Divide. Write the quotient in lowest term.

1. $6 \div \frac{1}{4}$

2. $\frac{1}{4} \div \frac{2}{3}$

3. $3\frac{1}{5} \div \frac{1}{5}$

4. $\frac{2}{5} \div \frac{1}{3}$

5. $\frac{1}{36} \div \frac{1}{12}$

Apply Your Skills!

1. Jamie is painting her house. Each room takes $\frac{1}{2}$ of a liter of a paint. If Jamie has 3 liters of paint how many rooms can she paint?
2. A gymnastics class is having blueberries for a snack. A serving size of blueberries is $\frac{1}{4}$ of a cup. If there are 3 cups of blueberries, how many gymnasts can get a snack?

M5NS-Ij-97.1

Solves routine or non-routine problems involving division without or with any of the other operations of fraction and whole numbers using appropriate problem solving strategies and tools.

Explore and Discover

Mrs. Barlizo bought 15 meters of cloth to be made into monitor covers. If each monitor needs $\frac{3}{5}$ meter, how many monitor covers can be made out of the cloth?

Solution:

$$15 \text{ meter} \div \frac{3}{5} = N$$

$$15 \times \frac{5}{3} = \frac{15 \times 5}{3} = \frac{75}{3} = 25 \text{ monitor covers}$$

or you can do this

1/5	1/5	1/5	1/5	1/5
1/5	1/5	1/5	1/5	1/5
1/5	1/5	1/5	1/5	1/5
1/5	1/5	1/5	1/5	1/5
1/5	1/5	1/5	1/5	1/5

1/5	1/5	1/5	1/5	1/5
1/5	1/5	1/5	1/5	1/5
1/5	1/5	1/5	1/5	1/5
1/5	1/5	1/5	1/5	1/5
1/5	1/5	1/5	1/5	1/5

1/5	1/5	1/5	1/5	1/5
1/5	1/5	1/5	1/5	1/5
1/5	1/5	1/5	1/5	1/5
1/5	1/5	1/5	1/5	1/5
1/5	1/5	1/5	1/5	1/5
1/5	1/5	1/5	1/5	1/5

Every $\frac{3}{5}$ represents the number of monitor cover

Get Moving

Solve the following problems

1. During birthday party, Mother divided $\frac{3}{5}$ of a big chocolate bar among my friends. She gave $\frac{1}{10}$ each to my friends. How many of my friends attended my birthday party?
2. Father bought $2\frac{1}{8}$ buko pies. How many children are sharing when each $\frac{1}{8}$ of a buko pie?

Keep Moving

Solve the following problems.

1. Isko and Roland have 70 pencils altogether. Roland has $\frac{3}{5}$ of the number Isko has. How many pencils does Isko have?
2. A bottle holds 800 ml of water when it is $\frac{3}{5}$ full. What is the capacity of water?

Apply Your Skills

Solve the following problem

Jean-cel used $\frac{2}{3}$ of a rope to tie up a fire wood and $\frac{1}{2}$ of the remainder to tie up the basket.

1. What fraction of the rope did she still have?
2. If the fraction of the rope left was 10 meter long, what is the original length of the rope?

M5NS-Ij-98.1

Creates problems (with reasonable answers) involving division or with any of the other operations of fractions and whole numbers

Explore and Discover

You can create a word problem by observing the following guide

- Familiarize yourselves with the concepts of addition and subtraction of fraction and their application to real life situations
- Think of the problem you want to write
- Read some problems and study their solutions.

Situation

After spending of $\frac{1}{4}$ of his monthly salary, John Carlo has ₱6,000 left

Think of the problem you want to write.

What is John Carlo monthly salary?

Solution to the problem

$$6,000 \div \frac{3}{4} = N$$

$$6,000 \times \frac{4}{3} = \frac{24\,000}{3} = \text{₱}8\,000 \text{ is monthly salary of John Carlo}$$

Get Moving

Create a problem on a given situation.

1. Edna buys $3\frac{1}{4}$ of egg pie.

Problem/Question _____

Answer/ Solution _____

2. Four boys share $\frac{2}{3}$ of slice bread

Problem/Question _____

Answer/ Solution _____

Keep Moving

Use the data below to create a problem involving division of fractions.

NAME	FRACTION	PERSON INVITED
Johny	$\frac{1}{3}$	20

Apply your skills

Create a word problem base on the number sentences below:

1. $9 \div \frac{1}{3} = N$

2. $\frac{2}{3} \div \frac{1}{6} = N$