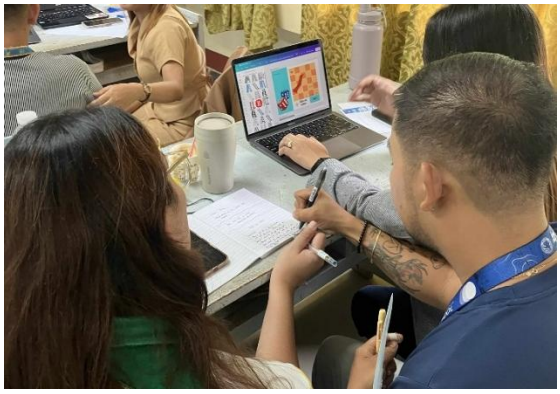
C.2. Evidence of technology adoption, utilization and commercialization.

➢ Actual Workshop

Training – workshop session on instructional material development led by Dr. Verzosa, held at the GS Hall, USM.

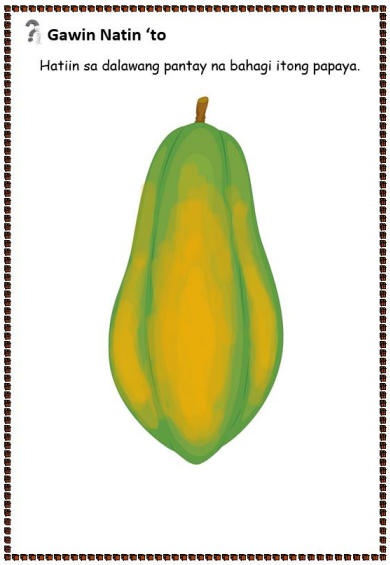


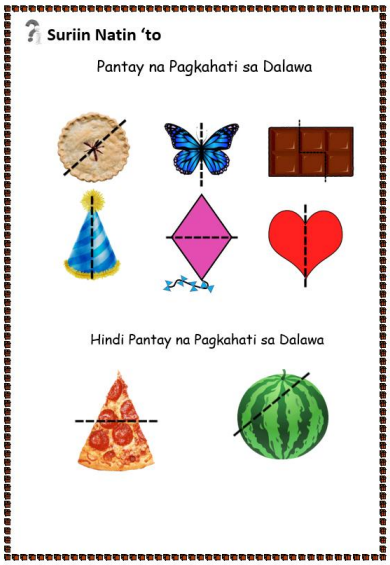

Group photo with Teachers of Nangaan Elem School and USM - Math & Stat Faculty

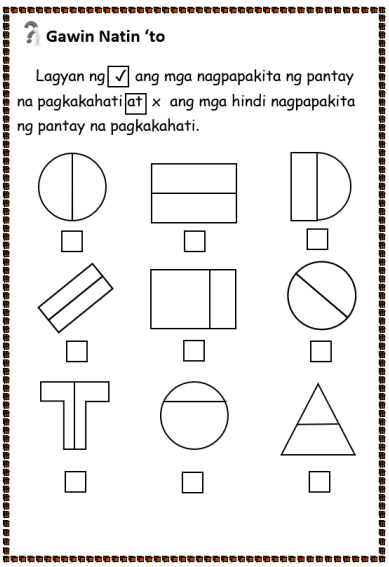
Picture 1.	Picture 2.
	
Lecture on instructional design using representation approach by Dr. Verzosa	Participants collaborate actively during the hands-on workshop session
Picture 3.	**Picture 4.**
	
Workshop participants present their collaborative output to the group	Group photo with participants and training facilitators from USM

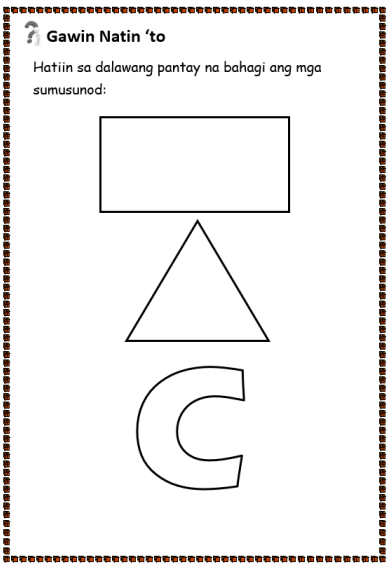
Participants of the seminar-workshop with MST and PhD Ed Math Students

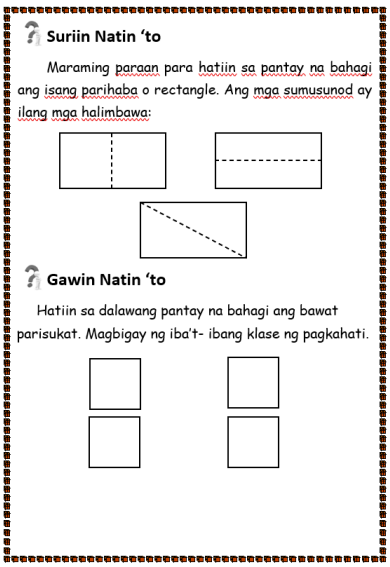
➢ Sample Outputs





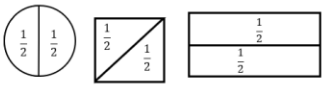






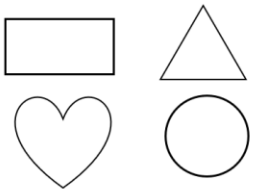
Isang Kalahati o One Half $(\frac{1}{2})$

Ang isang piraso ng isang buo na hinati sa dalawang magkapantay na bahagi ay tinatawag na $\frac{1}{2}$ (*one half*).



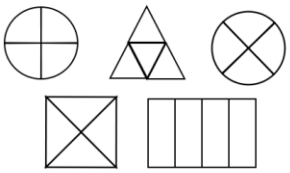
Gawin Natin 'to

Gumuhit ng mga bahaging nagpapakita ng $\frac{1}{2}$.



Suriin Natin 'to

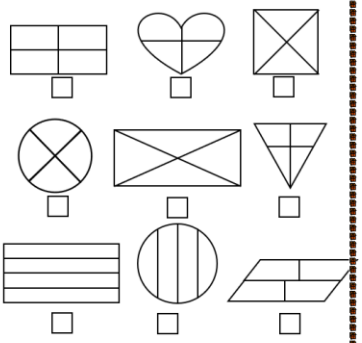
Pantay na Pagkakahati sa Apat



Hindi Pantay na Pagkahati sa Apat

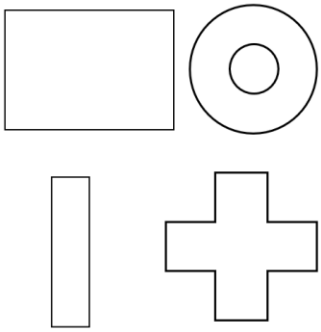
Gawin Natin 'to

Lagyan ng ☑ ang mga magpapakita ng pantay na pagkakahati at ☒ ang mga hindi nagpapakita ng pantay na pagkakahati.



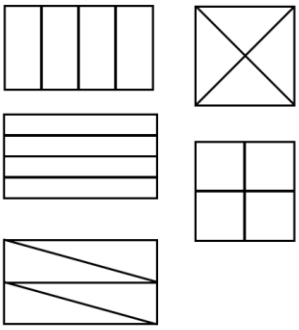
Gawin Natin 'to

Hatiin ang mga sumusunod na hugis sa apat na magkapantay-pantay na bahagi.

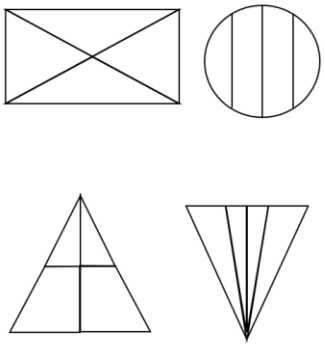


Suriin Natin 'to

May iba't ibang paraan ng paghati sa apat nang magkapantay. Ilan lamang sa mga ito ay:

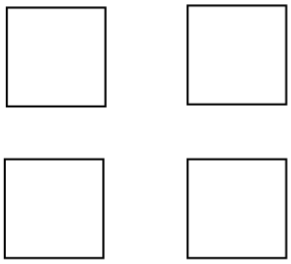


Ang mga sumusunod naman ay halimbawa ng nahati sa apat ngunit sa hindi magkakapantay na paraan at HINDI sila $\frac{1}{4}$.



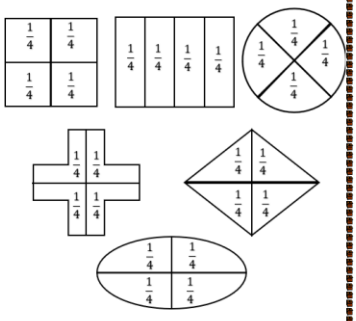
Gawin Natin 'to

Hatiin sa apat na magkapantay-pantay na bahagi ang bawat parisukat. Magbigay ng magkakaibang paraan pagkakahati.



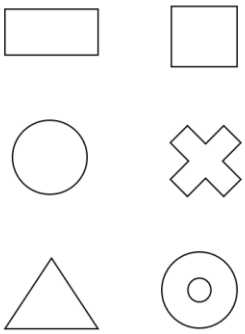
Isang Kapat o One Fourth $(\frac{1}{4})$

Ang isang piraso ng isang buong hinati sa apat nang magkakapantay na bahagi ay tinatawag na *isang kapat o one fourth* $(\frac{1}{4})$.



Gawin Natin 'to

Gumuhit ng mga bahaging nagpapakita ng $\frac{1}{4}$.

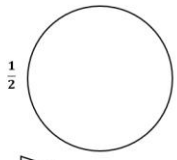


Name:_____
Edad:_____
Birthday:_____
School:_____
Grade Level:_____

Guhitan at itiman ang $\frac{1}{2}$ na bahagi ng mga sumusunod na hugis:

$\frac{1}{2}$

$\frac{1}{2}$

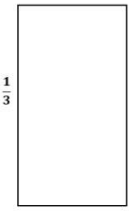


$\frac{1}{2}$

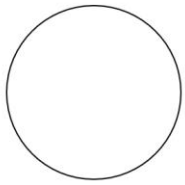
Guhitan at itiman ang $\frac{1}{3}$ na bahagi ng mga sumusunod na hugis:

$\frac{1}{3}$

$\frac{1}{3}$



$\frac{1}{3}$



Bilugan ang mas malaking fraction sa mga sumusunod:

1) $\frac{1}{2}$ $\frac{1}{5}$

2) $\frac{1}{5}$ $\frac{1}{8}$

3) $\frac{4}{9}$ $\frac{8}{9}$

4) $\frac{5}{7}$ $\frac{1}{3}$

5) $\frac{4}{15}$ $\frac{4}{6}$

6) $\frac{5}{6}$ $\frac{8}{19}$

7) $\frac{2}{3}$ $\frac{3}{2}$

Markahan ng ekis (X) kung saan sa number line makikita ang nakasulat na fraction.

1) $\frac{1}{2}$

2) $\frac{1}{3}$

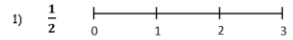
3) $\frac{1}{8}$

4) $\frac{3}{4}$

5) $\frac{5}{6}$

Markahan ng ekis (X) kung saan sa number line makikita ang nakasulat na fraction.

1) $\frac{1}{2}$



2) $\frac{3}{4}$

3) $\frac{3}{2}$

4) $\frac{8}{3}$

1) Iguhit ang fraction na $\frac{4}{8}$.

Ang fraction na ito ay katumbas ng _____.

2) Iguhit ang fraction na $\frac{5}{3}$.

Ang fraction na ito ay katumbas ng _____.

Sagutan ang mga sumusunod:

1) $\frac{3}{6} + \frac{1}{6} =$

2) $\frac{1}{2} + \frac{1}{4} =$

3) $\frac{2}{3} + \frac{2}{5} =$

4) $\frac{8}{9} - \frac{2}{9} =$

5) $\frac{5}{6} - \frac{1}{3} =$

CREDITS

This module was designed as part of a research project of the University of Southern Mindanao Graduate School, and funded by the USM Research and Development Office.

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COUNTING BY TABULAR METHOD

Level 1

Activity 1: Stylish Combos

Ana has 3 shirts (red, yellow, white) and 2 jeans (gray, blue). She wants to know the number of ways she can pair her shirts and jeans. Help Ana by completing the table below.

Jeans \ Shirts	Red	Yellow	White
Gray	Gray Jeans, Red Shirt	Gray Jeans, Yellow Shirt	_____
Blue	_____	_____	_____

Total Possible Outcomes = ___ choices for jeans x ___ choices for shirts = ___ possible pairings

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Kabacan, Cotabato

CONDITIONAL STATEMENTS

LEVEL 1. Introduction to Basic Concepts

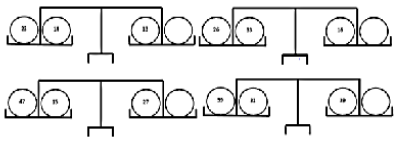
Activity 1: Find my Match!

Instructions:
Draw a line to match each antecedent/hypothesis with its corresponding consequence/conclusion of a conditional statements.

ANTECEDENT / HYPOTHESIS	CONSEQUENCES / CONCLUSION	CONDITIONAL STATEMENTS (If/Then Statements)
I will study for my Math final test	I can't withdraw cash.	
The power goes out	I will get a better scores	If I will study for my Math final test, then I will get a better scores.
The ATM is offline	I might wake up late for school	
My android phone battery dies	I will use candles or flashlights	
I forget to set your alarm	I can no longer call and send text messages	

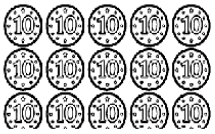
Activity 3: Scale Balancing

Let us balance the scale by adding numbers that make both sides equal.



Activity 4: Building Numbers by Tens

I. Let us observe the coins below and fill the blanks in the following statements.



LESSON 3 MODE

Mode is the most frequent value in a set of data and that value can be a number, word, or category.

Types of Mode
Unimodal - The data set has only one value that appears most often.
Bimodal - The data set has two values appear most often and equally.
Multimodal - The data set has three or more repeating values.
No Mode - The data set has no repeating values.

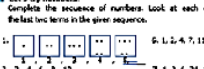
ACTIVITY 1 What's your MODE today?

Based on the given data sets, identify the number of each element, the mode and the type of mode. Item 1 is done for you.

Data Set	Number of each element	Which element/s has most number?	Mode/s	Type of Mode
	♥ = 8 ■ = 6 ▲ = 4	♥	♥	Unimodal
 lansones, kamote, kamote, santol, kamote, lansones, sibuyas, santol, lansones, santol, kamote, sibuyas, santol, lansones,	Yellow = ___ Violet = ___ Blue = ___ Green = ___ Black = ___			
2, 12, 20, 22, 202, 2, 12, 20, 22, 202, 2, 12, 20, 22, 202, 2, 12, 20, 22, 202, 2, 12, 20, 22, 202, 2, 20, 2, 20, 2, 20, 2, 20				
				

Recognizing Patterns

Study each of the patterns below and supply the next two elements.

1.  ___ ___
2. ___ ___
3.  ___ ___
4.  ___ ___
5.  ___ ___

Let's try numbers!

Complete the sequence of numbers. Look at each of the sequence below and identify the last two terms in the given sequence.

1. _____, _____
2. 2, 4, 6, 8, 10, _____, _____
3. 16, 12, 8, 4, _____, _____
4. 1, 3, 9, 27, 81, _____, _____
5. 32, 16, 8, 4, _____, _____
6. 1, 1, 2, 4, 7, 11, 16, _____, _____
7. 1, 2, 4, 24, 120, _____, _____
8. 78, 77, 75, 72, 68, _____, _____
9. 2, 2, 4, 12, 48, 240, _____, _____
10. 3, 5, 10, 14, 20, _____, _____

How Do You Get the Next Term?

Each A is composed of sequences with recognizable 'patterns'. Identify the operation needed to get from one term to the next term, whether addition or multiplication, in Column B. In Column C, identify the number to be added or multiplied.

COLUMN A	COLUMN B add or multiply	COLUMN C
1) 7, 13, 19, 25, 31	addition	6
2) 3, 12, 48, 192		
3) 25, 20, 17, 14, 11		
4) 81, 1, -5, -13, -29		
5) 4, 2, 1, 1/2, 1/4,		

Let us Classify them!

Classify the sequences below according to common property. Place in the same box sequences with the same pattern.

2, 9, 16, 23	2, 4, 8, 16	1, 4, 16, 64
16, 12, 8, 4	3, 5, 7, 9	20, 15, 10, 5
27, 9, 3, 1		160, 80, 40, 20

Box A	Box B
Box C	Box D

Let us Classify them Further!

Classify the sequences below according to common property. Place in the same box sequences with the same pattern.

2, 9, 16, 23	2, 4, 8, 16	1, 4, 16, 64
16, 12, 8, 4	3, 5, 7, 9	20, 15, 10, 5
27, 9, 3, 1		160, 80, 40, 20

Box A	Box B

Property common to sequences in Box A: _____

Property common to sequences in Box B: _____

Lesson 1: Introduction to Sets

Learning Competency: The learner describes well-defined collection of objects.

Activity 1– Sort, Explore, Think (SET)!

Directions: **Categorize** each object in the appropriate column (A, B, C, or D) based on shared characteristics, functions, or themes.

A	B	C	D
cabbage	camera		
Collection of _____	Collection of gadgets	Collection of objects that can be worn	Collection of _____

Activity 2. The Well-Defined Detective Mission!

Directions: Let us investigate whether each collection below is a **well-defined** or **not.** A **well-defined collection** has clear, objective membership. A collection of well-defined objects is called a set. A collection is **not well-defined** if membership is subjective, vague, or based on debatable criteria and considered **not a set.**

Collection of objects	Well-defined (Yes or No)	Justification	SET OR NOT SET
Counting number from 1-10.	Yes	Clear members: 1, 2, 3, 4, ...,10	Set
All difficult questions in the chapter test.	No	"Difficult" is subjective— a difficult question for one may be easy for another.	Not a set
All delicious fruits.			

NUMBER ARRANGEMENTS

Activity 1: Smallest and Biggest Number Possible

1. Let us arrange the given digits to form the smallest and greatest numbers possible

Digits	Smallest Possible Number	Greatest Possible Number	Smallest Possible 3-digit Number	Largest Possible 3-digit Number	Smallest Possible 2-digit Number	Largest Possible 2-digit Number
9, 3, 7, 2	2 379	9 732	237	973	23	97
1, 4, 6, 5						
8, 4, 3, 1						

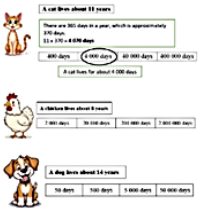
2. Given the digits **7, 1, 9,** and **5**
   a. Find the sum of the largest and smallest possible 3-digit number.
      Answer: ___ ___ ___ + ___ ___ ___ = _____
   b. Find the difference of the largest and sma lest possible 2-digit number
      Answer: ___ ___ + ___ ___ = _____
3. Using the digits **6, 3, 5, 2,** form the largest possible number increased by 100.
   Answer: ___ ___ ___ ___ + 100 = _____
4. Using the digits **9, 8, 1,** and **5,** form the smallest possible number and multiply it by 2.
   Answer: _____

Activity 2: Making Target Numbers

These kids are playing arranging cards to be the closest value as possible to the target number. Who do you think will win?

Activity 6: Estimating Products

Let us estimate the number of days these animals can live.



Activity 7: Quick Products

Let us quickly estimate products by rounding each numbers

1. 146 × 4 is approximately 150 x 4 = 600
   The product is..... ☐ Less than 500 ☑ Greater than 500
2. 89 × 6 is approximately _____
   The product is greater than _____
3. 99 × 7 is
   The product is..... ☐ Less than 700 ☐ Greater than 700
4. The area of a rectangular lot is 141 x 398, which of the following represent the best estimate of its area?
   a. 100 x 390 b. 100 x 400 c. 140 x 400 d. 140 x 300
5. An airplane flies about 13km/minute. At this speed, about how many kilometers does it fly in an hour?
   Answer: _____

Sample of zines produced by seminar-workshop participants