3

Zest for Progress
Zeal of Partnership

Mathematics

Quarter 3 - Module 3:
Visualizing and Generating Equivalent Fractions

Name of Learner: _____

Grade & Section: _____

Name of School: _____

January — Makugihon
February — Mahigugmaon
March — Matinabangon
April — Matinahuron
May — Mahapsay og Malimpyo
June — Maabtik og Masunod sa Ihsuktong Oras
July — Maantigo og Maabilidad
August — Maginhunahunaon para sa Uban
September — Madaginoton
October — Matinud-anon
November — Masaligan
December — Maalampuon

What I Need to Know

This module will discuss about visualizing equivalent fractions. Operations involving fraction plays a vital role in our daily life. When you buy fish or other products in the market, the quantity is often expressed in fractions (e.g. $\frac{3}{4}$ kilo of bangus, $\frac{1}{2}$ meters of cloth). When you share one (1) whole pizza to your siblings, you use fractions. Whenever you divide something into parts, (e.g. a piece of land, a birthday cake, an allowance for each siblings) fractions are involved.

This module contains only one lesson;

Lesson 1 – Visualize and generate equivalent fractions

After studying this module, you should be able to:
1. Visualizes and generates equivalent fractions
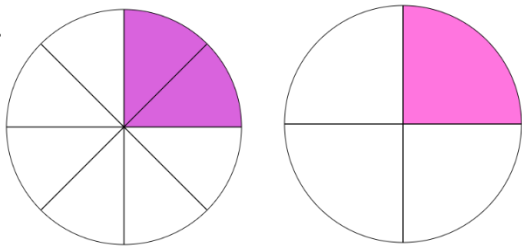2. Identify equivalent and non – equivalent fractions

What I Know

Directions: Encircle the letter of the correct answer.
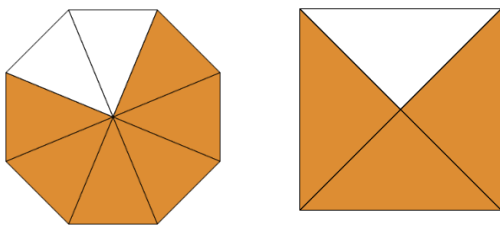For items 1-3, complete the missing fractions in the figure below.

1.

$$\frac{2}{8} = \underline{\hspace{2cm}}$$

A. $\frac{1}{4}$ C. $\frac{1}{3}$

B. $\frac{2}{4}$ D. $\frac{2}{6}$

2.

$$\underline{\hspace{1.5cm}} = \frac{3}{4}$$

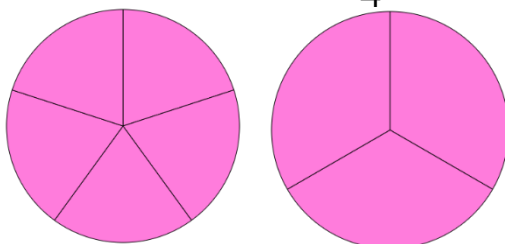A. $\frac{1}{3}$ C. $\frac{6}{8}$

B. $\frac{2}{6}$ D. $\frac{6}{2}$

3.

$$\underline{\hspace{1.5cm}} = \frac{3}{3}$$

A. $\frac{2}{2}$ C. $\frac{1}{3}$

B. $\frac{1}{5}$ D. $\frac{5}{5}$

What's In?

Activity . *A star or a Moon?*
   Directions: Read each item carefully. Draw a ☆ if the statement is correct and ☾ if it is incorrect.
Write your answers on the space provided before the number.

_____ 1. Fractions whose numerator is greater than the denominator is
                   called improper fractions.

_____ 2. Fraction describes part of a whole when the whole is cut into
                   equal parts.

_____ 3. Improper fractions are fractions with different numerators and
             denominators that represent the same value or proportion of the whole.

What's New?

Let's analyze this problem.

Ben and Jack were KAB Scouts and were working together on their art project. Ben colored ½ of the square, while Jack colored 2/4 of another square of the same size. Jack told Ben that he colored more parts and had a bigger fraction. Ben said that they just had equal parts. Who was right?
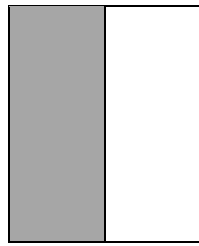
Questions.
  ➢ Why are Ben and Jack busy? What are they doing?
  ➢ What kind of pupils are they? Do you also do your projects?
  ➢ Why is it better if you do a project with a classmate?
  ➢ How many parts were colored by Ben? What about Jack?
  ➢ Who do you think is right? Ben or Jack?
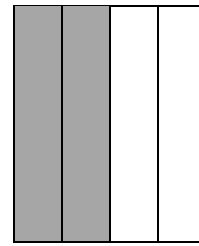
Today, we are going to find it out.

What is it?

Let's look at this.

Ben's Project   Jack's Project

Ask: How many parts were colored by Ben?

What do you call the shaded part? What about Jack's colored part?

What do you call the shaded the shaded part?

Do the squares have the same size of shaded part?

How can you be sure that the two shaded parts are equal?

On your own, try to match the two shaded parts by putting one over the other (superimposing). What can you say? Are they the same?
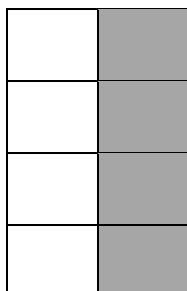
Is ½ equal to 2/4?

How can we check if 2 fractions are equivalent fractions?

What kind of fractions are ½ and 2/4? ***Equivalent Fractions***
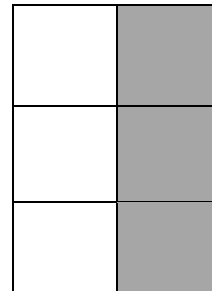
Can you think of another fractions equivalent to ½ and 2/4?

Let's study this.

A.   B.

What part of the whole is shaded in square A? 4/8 _____

What about in square B? 3/6   _____

Are the two equal fractions?   _____

Are they also equal to ½?   _____

Are the products of the fractions equal?   _____

Let's try to use the **Cross – Product Method**.

$$\frac{4}{8} \times \frac{3}{6}$$

4 x 6 = 24
8 x 3 = 24

If the product of 4 and 6 is the same with the product of 8 and 3 then the two fractions are equivalent.

Are the fractions 2/4, 3/6, and 4/8 equals to ½?
How can we generate fractions equivalent to a given fraction?
Study the fractions we have formed earlier.

$$\frac{1}{2} = \frac{2}{4}, \frac{3}{6}, \frac{4}{8}$$

What have you noticed with the series of fractions?
How can we get 2/4 from ½?
What will you do to the numerator and denominator of ½ to
    get 2/4?   3/6?   4/8?
Look at these examples.

$$\frac{12}{36} = \frac{6}{18}, \frac{3}{9}, \frac{1}{3}$$

How can we get 3/9 as equivalent to 12/36?
What will you do to the numerator and denominator of a fraction?

Remember…

> **To generate fractions equivalent to a given fraction, we can either multiply or divide both the numerator and denominator of the given fraction by the same whole number.**

 Here is another way of getting the equivalent of a fraction.
   Study this number chart.

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80

Look at the shaded part in the number chart. Based on the number chart, consider the numbers above as the numerators and the numbers below as the denominators.

See if all the fractions following ¾ are its equivalent. Are they?

3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40

What's more?

Hooray! It seems you enjoy learning. Let's answer this.

Activity - *Where is my Family?*
Directions: Find in the box the equivalent fractions of each given fractions.

6/15	10/25	4/10	12/30	4/6	14/21
10/15	6/9	25/30	20/24	12/16	3/6
15/18	5/10	10/12	7/14	6/8	9/12

1. $\dfrac{5}{6} = \dfrac{15}{18}$

2. $\dfrac{1}{2} =$

What I Have Learned

Awesome! Let us try your learning.

   Activity- *Match Me, Right!*
Directions: Match Column A with Column B. Draw a line connecting to the correct answer.

Column A
1. Fractions with different numerators and denominators but of the same value.
2. Equivalent fractions of 5/6
3. Operations involved in finding the equivalent fractions

Column B
a. Fraction
b. Multiplication and   Division
c. Equivalent Fractions
d. 10/12, 15/18, 20/24

What I Can Do

Superb! It's been a tough journey but worth it. Now, let's do this.

Activity - *Named Me!*

Directions: Give a name for 1 that makes the fraction equivalent.

1. $\dfrac{1}{3} \times \dfrac{}{} = \dfrac{4}{12}$

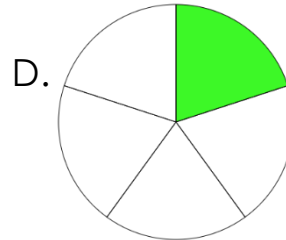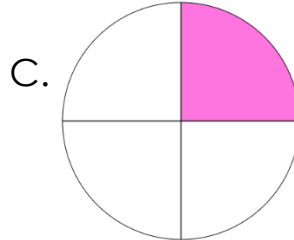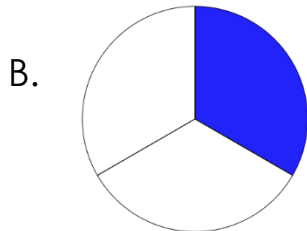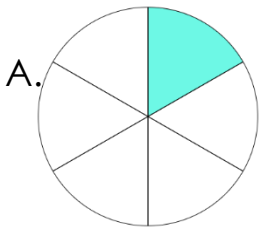2. . $\dfrac{28}{35} \div \dfrac{}{} = \dfrac{4}{5}$

Assessment

Directions: Read each item carefully.

Choose the letter of the best answer. Write it on the space provided before the number.

____ 1. Which picture has an area equivalent to 1/3 shaded? (r)

A.   B.   C.   D.

____ 2. What number is needed to make the statement true?

$\dfrac{4}{5}$ is equal to $\dfrac{}{25}$?

     A. 20
     B. 24
     C. 9
     D. 5

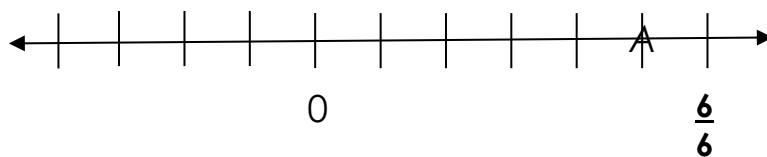____ 3. What number should be multiplied to make the fraction equivalent?

$\dfrac{2}{3} \times \dfrac{}{} = \dfrac{12}{18}$

     A. 10
     B. 6
     C. 9
     D. 15

_____ 4. Which three fractions are equivalent / equal?

A. $\dfrac{1}{4}, \dfrac{2}{3}, \dfrac{3}{4}$

B. $\dfrac{7}{14}, \dfrac{2}{4}, \dfrac{4}{8}$

C. $\dfrac{5}{10}, \dfrac{2}{8}, \dfrac{3}{12}$

D. $\dfrac{2}{4}, \dfrac{2}{3}, \dfrac{3}{6}$

_____ 5. What fraction is equivalent to point A?

A. 6/6   C. 4/5
B. 5/6   D. 6/5

References

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