JANUARY
Makugihon

FEBRUARY
Mahigugmaon

MARCH
Matinabangon

APRIL
Matinahuron

MAY
Mahapsay og Malinpyo

JUNE
Maabtik og Musunod sa Ihsaktong Oras

JULY
Mauntigo og Maabilidad

AUGUST
Maginhunahunaon para sa Uban

SEPTEMBER
Madaginoton

OCTOBER
Matinud-anon

NOVEMBER
Masaligan

DECEMBER
Maalampuon

Republic of the Philippines
Department of Education
Regional Office IX, Zamboanga Peninsula

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*Z*est for *P*rogress
*Z*eal of *P*artnership

MATHEMATICS
4th QUARTER – Module 8:
OUTCOME OF SIMPLE EXPERIMENT

Name of Learner: _____

Grade & Section: _____

Name of School: _____

Mathematics – Grade 4
Alternative Delivery Mode
Quarter 4 - Module 8: Outcome of Simple Experiment

First Edition, 2020

Introductory Message

This Self – Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you can proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for a better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. Read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.

What I Need to Know

This module was written in fourth quarter of Grade 4 Mathematics as an aid for the learners to learn about Outcomes of Simple Experiment.

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Moreover, you are expected to:
- record favorable outcomes in a simple experiment (e.g. tossing a coin, spinning a wheel, etc.) M4SP-IVi-9
- express the outcome in a simple experiment in words, symbols, tables, or graphs. M4SP-IVi-10
- explain the outcomes in an experiment. M4SP-IVi-11

Believe that learning can continue amidst the health crisis. Good luck, stay safe, and God bless.

What I Know

Directions: Choose the letter that corresponds to your answer. Write your answer on a separate sheet.

For items 1 to 3, refer to the figures below:

| ⭐ Yellow | ⭐ Blue | ⭐ Yellow | ⭐ Green | ⭐ Red |

1. What is the possible outcome that a blue star will be chosen from the box?
   A. 2   B. 3   C. 5   D. 1
2. If a star with primary color shall be selected, which possible colors could be chosen?
   A. {red, green, blue}   C. {yellow, orange, green}
   B. {blue, yellow, red}   D. {red, blue, violet}
3. Which experiment will give us 2 possible outcomes?
   A. selecting a primary color   C. getting a green star
   B. getting yellow stars   D. selecting a non-primary color

For items 4 and 5, refer to the problem below:
Irene placed bottle caps in a jar. She labeled them as shown on the table:

Bottle cap C	Bottle cap M	Bottle cap R
C_1 C_2 C_3	M_1 M_3	R_1
C_4 C_5 C_6	M_2 M_4	R_2

4. If Irene's outcome happened to be Bottle Cap C, which is the correct way of expressing all possible outcomes?
   A. $\{C_1, C_2, C_3, C_4, C_5, C_6\}$ C. $\{M_1, M_2, M_3, M_4\}$
   B. $\{C_2, C_3, C_5, M_1, M_2\}$ D. $\{R_1, R_2\}$
5. Which cap is most likely to be selected from the jar? Why?
   A. Bottle cap C is most likely to be selected from the jar because there are more bottle caps labeled C.
   B. Bottle cap M is most likely to be selected from the jar because there are more bottle caps labeled M.
   C. Bottle cap R is most likely to be selected from the jar because there are more bottle caps labeled R.
   D. Bottle caps M and R are most likely to be selected from the jar because there are more bottle caps labeled M and R.

What's In

Directions: Study the table below and answer the questions asked.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	27	29	30

1. Which set of numbers are multiples of 10?
   A. {5, 10, 20, 30}   C. {10, 20, 30}
   B. {10, 20, 25, 30}   D. {10, 15, 20}
2. Which set of numbers are multiples of 5?
   A. {5, 10, 15, 20, 30}   C. {5, 10, 16, 20, 35,}
   B. {3, 10, 15, 20, 25}   D. {5, 15, 20, 26, 30,}
3. Which is a set of even numbers?
   A. {14, 16, 18, 20, 22, 30}   C. {16, 19, 20, 22, 28, 30}
   B. {2, 4, 6, 8, 10, 11, 24)}   D. {10, 12, 14, 15, 18, 20}

LESSON 1 — Recording Favorable Outcomes in a Simple Experiment

What's New

ACTIVITY 1

Directions: Read and study the situation below then answer the questions being asked.

John wants to find out the possible outcomes of tossing a coin twice. Basically, a coin has a head and a tail. If you were John, try to do he experiment and list all possible outcomes of tossing a coin twice.

List here!

Possible Outcomes on the First Toss	Possible Outcomes on the Second Toss	Possible Outcomes on tossing a coin twice
Head		
Tail		

QUESTION: How many more possible outcomes have you listed?

What is It

An **experiment** is a task or activity that you do where the results can be observed and recorded. The results in the experiment are called **outcomes.**

Let us record the possible outcomes of John's experiment as shown below**.**

	First Toss	Second Toss	No. of Possible Outcomes	
	Head	Head	Head, Head	1
		Tail	Head, Tail	2
	Tail	Head	Tail, Head	3
		Tail	Tail, Tail	4

Therefore, there are 4 possible outcomes of tossing a coin twice.

What's More

Directions: Do the experiment and complete the table.

Mario rolls a pair of dice labelled Die A and Die B. Record all possible outcomes using the diagram below. The first one is done for you.

DIE A	DIE B	OUTCOME	DIE A	DIE B	OUTCOME
1	1	{1,1}	4	1	
	2	{1,2}		2	
	3	{1,3}		3	
	4	{1,4}		4	
	5	{1,5}		5	
	6	{1,6}		6	
2	1		5	1	
	2			2	
	3			3	
	4			4	
	5			5	
	6			6	
3	1		6	1	
	2			2	
	3			3	
	4			4	
	5			5	
	6			6	

QUESTION: How many possible outcomes are there?

What I Have Learned

Directions: Fill in the blanks to complete the concept.

An _____(1)_____ is a task on ____(2)_____ that you do where the results can be observed and ____(3)_____. The _____(4)_____ in the experiment are called _____(5)_____.

LESSON 2	Expressing the Outcomes in a Simple Experiment in Words, Symbols, Tables or Graphs

What is It

The outcome or result of an experiment can be expressed in **words** or in **symbols** enclosed in braces { }. **Phrases** and **graphs** can also be used. In tossing a coin twice, we recorded earlier as head-head, head-tail, tail-head and tail-tail. These can be expressed as {HH, HT, TH, TT} where H is the head and T is the tail.

What's More

Directions: Match the expressions in Column A with the outcomes in Column B. Write the letter of the correct answer.

COLUMN A	COLUMN B
1. A head comes when a coin is tossed twice.	A. {1, 3, 5, 7, 9, 11}
2. Getting the factors of 10.	B. {HH, HT, TH}
3. An even number will come up in rolling a die.	C. {a, e. i, o, u}
4. An odd number will be chosen from number 1 to 12.	D. {1, 2, 5, 10}
5. A vowel will be chosen from the English alphabet.	E. {2, 4, 6}

What I Have Learned

Directions: Complete the Bubble Map to tell how to express outcomes in a simple experiment.
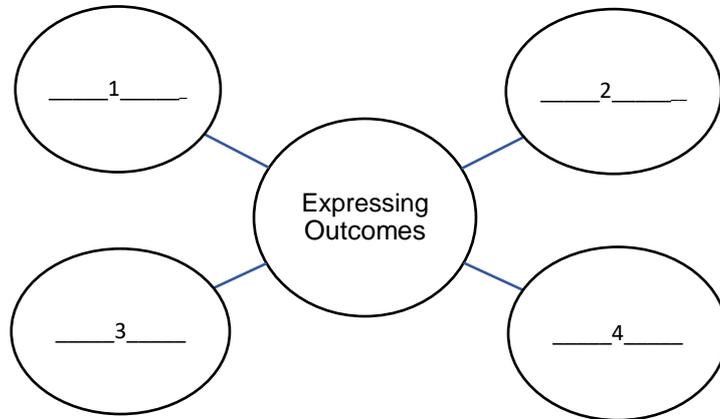
LESSON 3 | Explaining the Outcomes in a Simple Experiment

What is It

The likelihood of an outcome may be explained using the following:

✓ **Certain** if the outcome an event that is sure to occur. It is denoted by one (1)

✓ **More likely** if the outcome of the event has greater chance to occur.

✓ **Less likely** if the outcome of the event has lesser chance to happen or occur.

✓ **Equally likely** if the outcome has the same chances to happen.

✓ **Impossible** is used to denote no chance at all for the event to occur. It is denoted by zero (0).
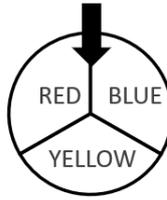
What's More

Directions: Study each spinner below. Answer the questions that follow and explain your answer.
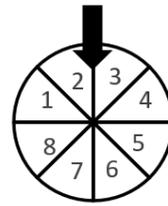
1.
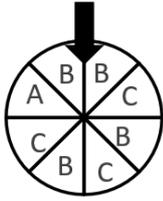
Which letter is more likely to appear? Why?

2.

Are the outcomes equally likely to happen in the spinner? Why?

3.

What is the chance that the tip of the arrow lands on 9? Why?

What I Have Learned

What word/s do we use to explain the likelihood of an event to occur?

- We use Certain, More likely, Less Likely, Equally Likely, and Impossible.

What I Can Do

Directions: Given the letter cards. Answer the following questions.

E	F	F	J
N	N	O	N
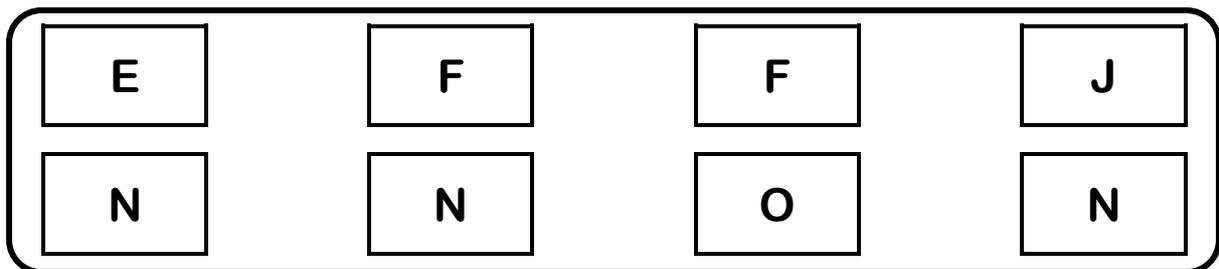
1. What are the possible outcomes for picking a vowel?

2. If Jojo's outcome is a consonant and Mary's outcome is a vowel, express their combined outcome.

3. Which letter is most likely to appear?

Assessment

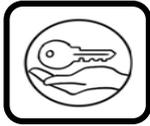**Directions:** Study the letter cards. Refer to the cards below to answer the questions that follow. Give the number of letter/s being asked.

M A T H E M A T I C S

1. What are the outcomes of picking a card containing vowel letters?
   A. 4   B. 3   C. 11   D. 7

2. What are the outcomes of picking a card containing consonant letters?
   A. 3   B. 4   C. 7   D. 11

3. What are the outcomes of picking a card containing letters M and T?
   A. 2   B. 4   C. 6   D. 8

4. In the letter cards, how many letters are there from A to E? Explain your answer.
   A. 4, the letters are {A, C, I, E} because these letters can be picked from the letter cards.
   B. 4, the letters are {A, A, C, E} because these letters can be picked from the letter cards.
   C. 6, the letters are {A, C, S, E} because these letters can be picked from the letter cards.
   D. 0, It's impossible to happen.

5. If the outcome happened to be vowels, which is the correct way of expressing all possible outcomes?
   A. {M, A, T, H}   B. {A, E, I, A}   C. {T, H, C, I}   D. {E, A, I, S}

Answer Key

What In:				What I Know:		
1.C	2. A	3.A		1.D	2.B	3.B

Lesson 1:

What's more:
{1,1 1,2 1,3 1,4 1,5 1,6 2,1 2,2 2,3 2,4 2,5 2,6 3,1 3,2 3,3 3,4 3,5 3,6 4,1 4,2 4,3 4,4 4,5 4,6 5,1 5,2 5,3 5,4 5,5 5,6 6,1 6,2 6,3 6,4 6,5 6,6}
There are 36 possible outcomes.

What I have learned:
1. Experiment   2. Activity   3. Recorded   4. Results   5. Outcomes

Lesson 2:

What's more:
1.B   2.D   3. E.   4. A   5. C

What I have learned: (ANSWER IN ANY ORDER)
1. Words   2. Symbols   3. Phrases   4. Graphs

Lesson 3:

What's more:
1. B because there are more B in the spinner
2. Yes, because there is equal chance for the three colors to happen in the spinner
3. Impossible, there is no chance for the tip of the arrow to land on 9 because there is no 9 in the spinner.

What I Can Do:
1. {E, O}   2. {F,E F,O F,E F,O, J,E, J,O N,E N,O N,E N,O}   3. N is most likely to appear

Assessment:

1. A	2. C	3. B	4. B	5. B

Reference:

Ofelia G.Chingcuangco, M.A.Ed., *Soaring High with Mathematics 4*, Bloombooks, Inc. Unit A 5218 Que Grade Sulok Srrt. Ugong, Valenzuela City, Saint Matthew's Publishing, 2019.

I AM A FILIPINO
by Carlos P. Romulo

I am a Filipino – inheritor of a glorious past, hostage to the uncertain future. As such, I must prove equal to a two-fold task – the task of meeting my responsibility to the past, and the task of performing my obligation to the future.

I am sprung from a hardy race – child many generations removed of ancient Malayan pioneers. Across the centuries, the memory comes rushing back to me: of brown-skinned men putting out to sea in ships that were as frail as their hearts were stout. Over the sea I see them come, borne upon the billowing wave and the whistling wind, carried upon the mighty swell of hope – hope in the free abundance of the new land that was to be their home and their children's forever.

This is the land they sought and found. Every inch of shore that their eyes first set upon, every hill and mountain that beckoned to them with a green and purple invitation, every mile of rolling plain that their view encompassed, every river and lake that promised a plentiful living and the fruitfulness of commerce, is a hollowed spot to me.

By the strength of their hearts and hands, by every right of law, human and divine, this land and all the appurtenances thereof – the black and fertile soil, the seas and lakes and rivers teeming with fish, the forests with their inexhaustible wealth in wild and timber, the mountains with their bowels swollen with minerals – the whole of this rich and happy land has been for centuries without number, the land of my fathers. This land I received in trust from them, and in trust will pass it to my children, and so on until the world is no more.

I am a Filipino. In my blood runs the immortal seed of heroes – seed that flowered down the centuries in deeds of courage and defiance. In my veins yet pulses the same hot blood that sent Lapulapu to battle against the alien foe, that drove Diego Silang and Dagohoy into rebellion against the foreign oppressor.

That seed is immortal. It is the self-same seed that flowered in the heart of Jose Rizal that morning in Bagumbayan when a volley of shots put an end to all that was mortal of him and made his spirit deathless forever; the same that flowered in the hearts of Bonifacio in Balintawak, of Gregorio del Pilar at Tirad Pass, of Antonio Luna at Calumpit, that bloomed in flowers of frustration in the sad heart of Emilio Aguinaldo at Palanan, and yet burst forth royally again in the proud heart of Manuel L. Quezon when he stood at last on the threshold of ancient Malacanang Palace, in the symbolic act of possession and racial vindication. The seed I bear within me is an immortal seed.

It is the mark of my manhood, the symbol of my dignity as a human being. Like the seeds that were once buried in the tomb of Tutankhamen many thousands of years ago, it shall grow and flower and bear fruit again. It is the insigne of my race, and my generation is but a stage in the unending search of my people for freedom and happiness.

I am a Filipino, child of the marriage of the East and the West. The East, with its languor and mysticism, its passivity and endurance, was my mother, and my sire was the West that came thundering across the seas with the Cross and Sword and the Machine. I am of the East, an eager participant in its struggles for liberation from the imperialist yoke. But I know also that the East must awake from its centuried sleep, shake off the lethargy that has bound its limbs, and start moving where destiny awaits.

For I, too, am of the West, and the vigorous peoples of the West have destroyed forever the peace and quiet that once were ours. I can no longer live, a being apart from those whose world now trembles to the roar of bomb and cannon shot. For no man and no nation is an island, but a part of the main, and there is no longer any East and West – only individuals and nations making those momentous choices that are the hinges upon which history revolves. At the vanguard of progress in this part of the world I stand – a forlorn figure in the eyes of some, but not one defeated and lost. For through the thick, interlacing branches of habit and custom above me I have seen the light of the sun, and I know that it is good. I have seen the light of justice and equality and freedom, my heart has been lifted by the vision of democracy, and I shall not rest until my land and my people shall have been blessed by these, beyond the power of any man or nation to subvert or destroy.

I am a Filipino, and this is my inheritance. What pledge shall I give that I may prove worthy of my inheritance? I shall give the pledge that has come ringing down the corridors of the centuries, and it shall be compounded of the joyous cries of my Malayan forebears when first they saw the contours of this land loom before their eyes, of the battle cries that have resounded in every field of combat from Mactan to Tirad Pass, of the voices of my people when they sing:

"I am a Filipino born to freedom, and I shall not rest until freedom shall have been added unto my inheritance—for myself and my children and my children's children—forever."