5

Mathematics

Quarter 3 - Module 4:
Terms Related to a Circle

Name of Learner: _____

Grade & Section: _____

Name of School: _____

What I Need to Know

The module contains 2 lessons:

Lesson 1: Identifying the Terms Related to a Circle

Lesson 2: Drawing a Circle with Different Radii Using Compass

After going through this module, you are expected to:

1. Identify the Terms Related to a Circle

2. Draw a Circle with Different Radii Using Compass

What I Know

Pre-Test: "STAY CONNECTED"....

Instruction:

Read the words carefully in Column A. Match these with its meaning in Column B by making a line connecting the column.

COLUMN A	COLUMN B
1. Chord	A. An angle formed by the two radii.
2. Diameter	B. A line segment joining two points on the circle.
3. Compass	C. Is an instrument use to draw circles.
4. Radius	D. A chord that connects two points on the circle and passes through the center of the circle.
5. Central Angle	E. A line segment from the center of the circle to any point on the circle.

What's In

Activity 1: "ARRANGE ME"!!!

Instruction:

Arrange the word that corresponds its meaning. Write your answer on the blank before the number.

_____ 1. A line segment from the center of the circle to any point on the circle.   (R S D I A U)

_____ 2. An angle formed by the two radii.
              (C A R E N T L   E N G L A)

_____ 4. An angle formed whose vertex is on the circle.
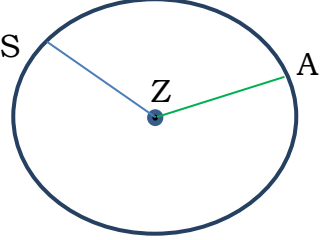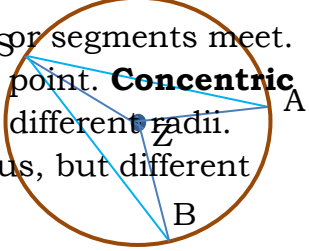(I C N S R I D E B E N G L A)

_____ 5. A chord that connects two point on the circle and passes through the center of the circle.   (E E I A M D T R)

What's New

"TOPIC 1"

Term	Definition	Illustration
Circle	- is a plane figure. - has no sides and angles. - is not also a polygon. - is a set of points in a plane that are equally distant from a point. This point is called the **center.** Note: A circle is named by its center. Example: Circle S or ⊙ S.	
Radius	- is a line segment from the center of the circle to any point on the circle. - is measured half of the diameter. Examples: $\overline{ZS}, \overline{ZJ}, \overline{ZA}, \overline{ZX}, \overline{ZB}$ and $\overline{ZT}$	
Chord	- Is a line segment joining two points on the circle. Example: $\overline{SA}, \overline{AX}, \overline{SJ}, \overline{JX}, \overline{SX}$ and $\overline{JA}$	
Diameter	- is a chord that connects two points on the circle and passes through the center of the circle. It is also known as the longest chord. Example: $\overline{SX}$ and $\overline{JA}$	

Central Angle	- is an angle formed by two radii. Example: ∠SZA or ∠AZS	
Inscribed Angle	- is an angle formed whose vertex is on the circle. Example: ∠ASB or ∠BSA	

Note: A **vertex** typically means a corner or a point where lines or segments meet. **Tangent Circles** are two or more circles that intersects at one point. **Concentric Circles** are two or more circles that have the same center, but different radii. **Congruent Circles** are two or more circles with the same radius, but different centers.

 # What is it
"MORE EXAMPLE"

| **Terms and Definition**	*Illustration:*
A <u>Circle</u> can be named by its center	Therefore that circle above is called Circle A or (o A).
A <u>chord</u> is a line segment joining two points on the circle. It does not passes the center of the circle.	In circle A, line segments CE and BG are chords.
A <u>Diameter</u> is a chord that connects two points on the circle and passes through the center of the circle.	Every diameter is a chord. In circle A, line segment BF is a diameter
<u>Radius</u> is a line segment from the center of the circle to any point on the circle.	The radius of a circle is one-half the diameter. In circle A, line segments: DA, AB, AF and AH are radii (plural of radius).
<u>Central Angle</u> - an angle formed by the two radii	In circle A, angles: BAH or HAB, HAF or FAH , BAD or DAB,

	DAH or HAD, DAF or FAD are central angles
<u>Inscribed Angle</u>- an angle formed whose vertex is on the circle	In circle A, angle FBG or GBF is an inscribed angle

What's More

"TOPIC 2"

DRAW CIRCLE WITH DIFFERENT RADII
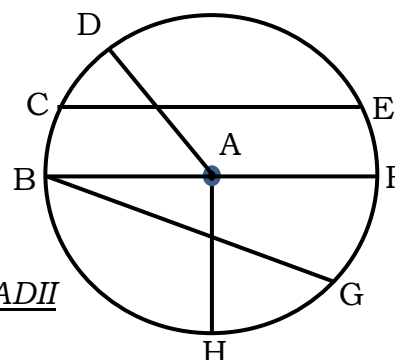
What is a circle?

Compass – is an instrument used to draw circles.

- is used to draw arcs (minor arc & major arcs)
- Consists of two movable arms hinged together,where one arm has a pointed end and the other arm holds a pencil. (refer to the figure at the right)

Example 1: Use a compass to draw a circle with a radius of 5 cm.

Solution: To draw circles with a radius of **5 cm** follow the given steps.

Step 1: Use the ruler to set the distance from the point of the compass to the pencil lead at 5 cm.
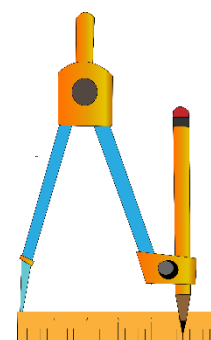
Step 2: Place the point of the compass at the center of the circle and draw the circle by turning the compass through 360^0.
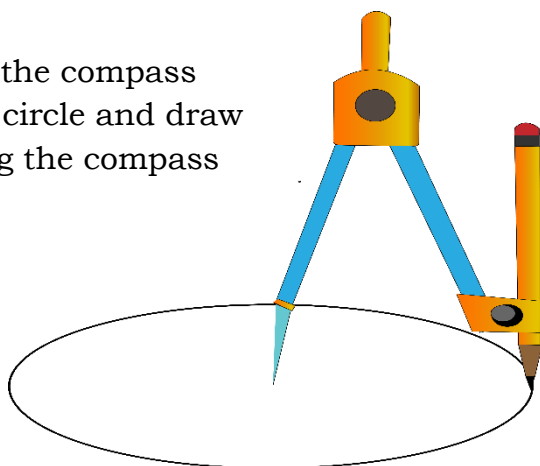
Study Tip! Alternative materials like the cardboard strips, strings, or clips are used to draw a circle in case you don't own a compass.

Example 2: Draw a circle with a radius of **3 cm** without using compass.

Solution: To draw circles with a radius of 3 cm follow the given steps.

Step 1: Get a strip of cardboard.

Step 2: Make two tiny holes 3 cm apart.

Step 3: Place a pencil at the left each hole and fix one pencil or ballpen in as you move the other pencil around.
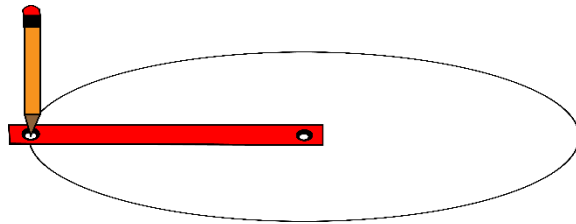
What I Have Learned
"REMEMBER ME??"

Diameter-
A chord that connects two points on the circle and passes through the center of the circle.

Chord-
A line segment joining two points on the circle.

Central Angle-
An angle formed by two radii.

Terms Related to Circle

Radius-
A line segment from the center of the circle to any point on the circle.

Inscribed Angle-
an angle whose vertex is on the circle.

Compas is an instrument use to draw a circle.

What I Can Do

"DRAW ME IN …"

Activity 2:TERMS RELATED TO CIRCLE

Directions: Draw the following terms related to circles satisfying the given conditions.

TERM	Illustration
1. **Central Angle** with radii EC and EI.	
2. **Chords** CU, UB & BC.	
3. **Circle F** with radius FT.	
4. **Inscribe Angles** whose chords are AX, XH and HA with center at E.	
5. **Diameters** PT and NA with center at E.	

Rubrics for Activity 2: (What Can I do)
TERMS RELATED TO CIRCLE

Name of Learner: _____

Date (mm/dd/yy yy) _____

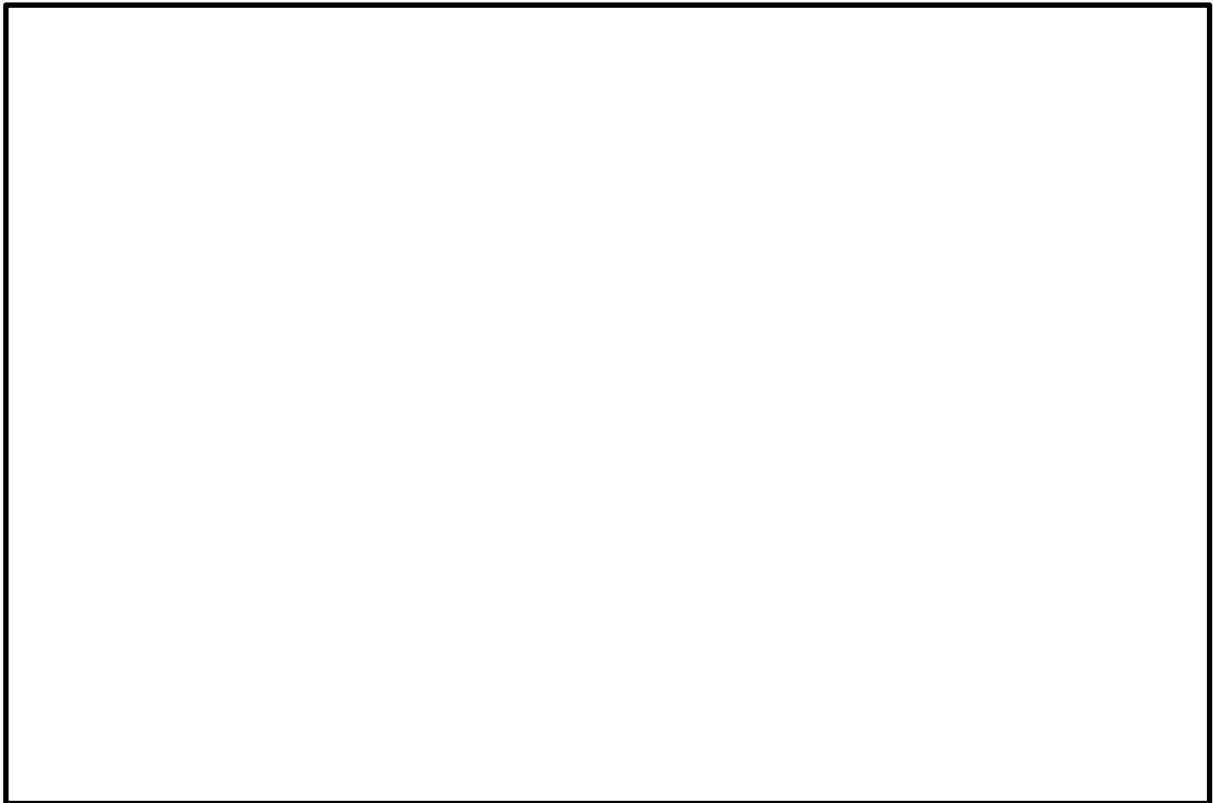| Criteria | Points | | | Score |
	5	4	3	
Accuracy	The illustration is completely shown.	The illustration is incompletely shown.	No illustration shown.	
Neatness	Shows no erasures.	Shows minimal erasures.	The illustration is completely erased.	
			Total	

Activity 3: DRAW CIRCLE WITH DIFFERENT RADII

Direction: Draw the following satisfying the given conditions.

1. Use a compass to draw a circle with a radius of 3.5 cm.

2. Use a cardboard strip to draw a circle with a diameter of 12 cm.

Rubrics for _Activity 3:_ **(What Can I do)**

DRAW CIRCLE WITH DIFFERENT RADII

Name of Learner: _____

Date (mm/dd/yy yy) _____

| Criteria	Points			Score
	5	**4**	**3**	
Accuracy	The illustration is completely shown.	The illustration is incompletely shown.	No illustration shown.	
Neatness	Shows no erasures.	Shows minimal erasures.	The illustration is completely erased.	
			Total	

Assessment

Choose Me...

Multiple Choice Test

Directions: Read each statement carefully. Choose the correct answer. Write the letter of your choices in the blank before each number.

Refer to the given figure at the right for numbers 1-5.
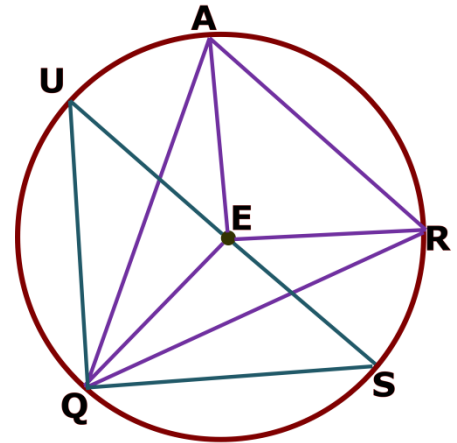
_____ 1. What is the diameter of the given ⊙ E?
- A. $\overline{UQ}$
- C. $\overline{US}$
- B. $\overline{QR}$
- D. $\overline{AR}$

_____ 2. Which of the following is NOT a radius?
- A. $\overline{AR}$
- C. $\overline{EA}$
- B. $\overline{ER}$
- D. $\overline{ES}$

_____ 3. Which of the following is NOT an inscribed angle?
- A. ∠ARQ
- C. ∠AER
- B. ∠SQA
- D. ∠QUS

_____ 4. Which of the following is not a chord?
- A. $\overline{AR}$
- B. $\overline{US}$
- C. $\overline{EA}$
- D. $\overline{UQ}$

_____ 5. What is the center of the given circle?
- A. •S
- B. •E
- C. •Q
- D. •U

_____ 6. What instrument is commonly used to draw a circle?
- A. ruler
- B. cardboard
- C. pencil
- D. compass

_____ 7. Which of the following circles has a diameter of 36cm?

A.   36cm   •H

B.   36cm   •H

C.   36mm   •H

D.   36cm   •H
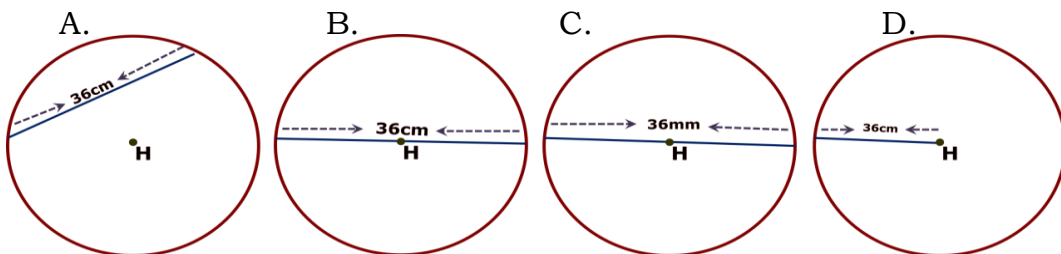
_____ 8. Which of the following is a **TRUE** statement?
A. Radius is the chord that passes through the center of the circle.
B. Radius is the distance from the center of the circle to any point on its perimeter.
C. Radius of the circle is twice the length of the diameter.
D. Radius is the longest chord in a circle.

_____ 9. Nathan arranged two circular plates without overlapping. The radius of the first plate is 12 cm. The diameter of the   second plate is the radius of the first plate. What is the distance from end to end of the plate?

        A.12 cm   B. 24 cm   C. 36 cm   D. 18 cm

_____ 10. Which of the following three circles show with the same center such that the radius is *1 in* shorter than the circle outside it?

    A.   B.   C.   D.
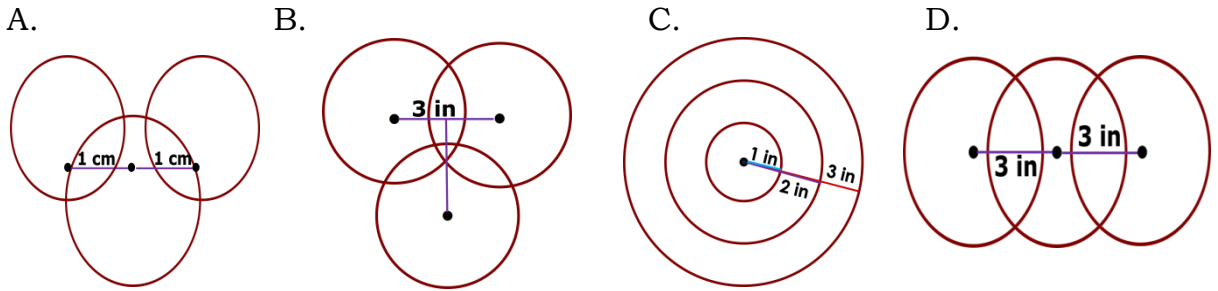
References

Acuña, Adoracion M. and Victoria A. Palomar. 1999. *Mathematics for Everyday Life 5*. Quezon City: JTW Corporation.

Coronel, Carmelita C. et al.. 2010. *Mathematics for a Better Life 5*. Quezon City: Vibal Group, Incorporated.

Lumbre, Angelina P. et al.. 2016. *21st Century Mathletes Textbook for Grade 5*. Quezon City: Vibal Group, Incorporated.

Development Team

Writer: **Nestor B. Gutierrez Jr.**
                               Doňa Josefa Elementary School

Editors/QA: **Vilma S. Gumandao**
                               Cirilo M. Cuanan, Jr.
                               Joel Mar Q. Labe, EMD
                               Windyl W. Morales

Reviewer: **Gina I. Lihao**
                               EPS-Mathematics

Illustrator:
Layout Artist:
Management Team:

                               Evelyn F. Importante
                               OIC-CID Chief EPS

                               Dr. Jerry C. Bokingkito
                               OIC- Assistant SDS

                               Dr. Aurelio A. Santisas, CESE
                               OIC- Assistant SDS

                               Dr. Jeanelyn A. Aleman, CESO VI
                               OIC-Schools Division Superintendent