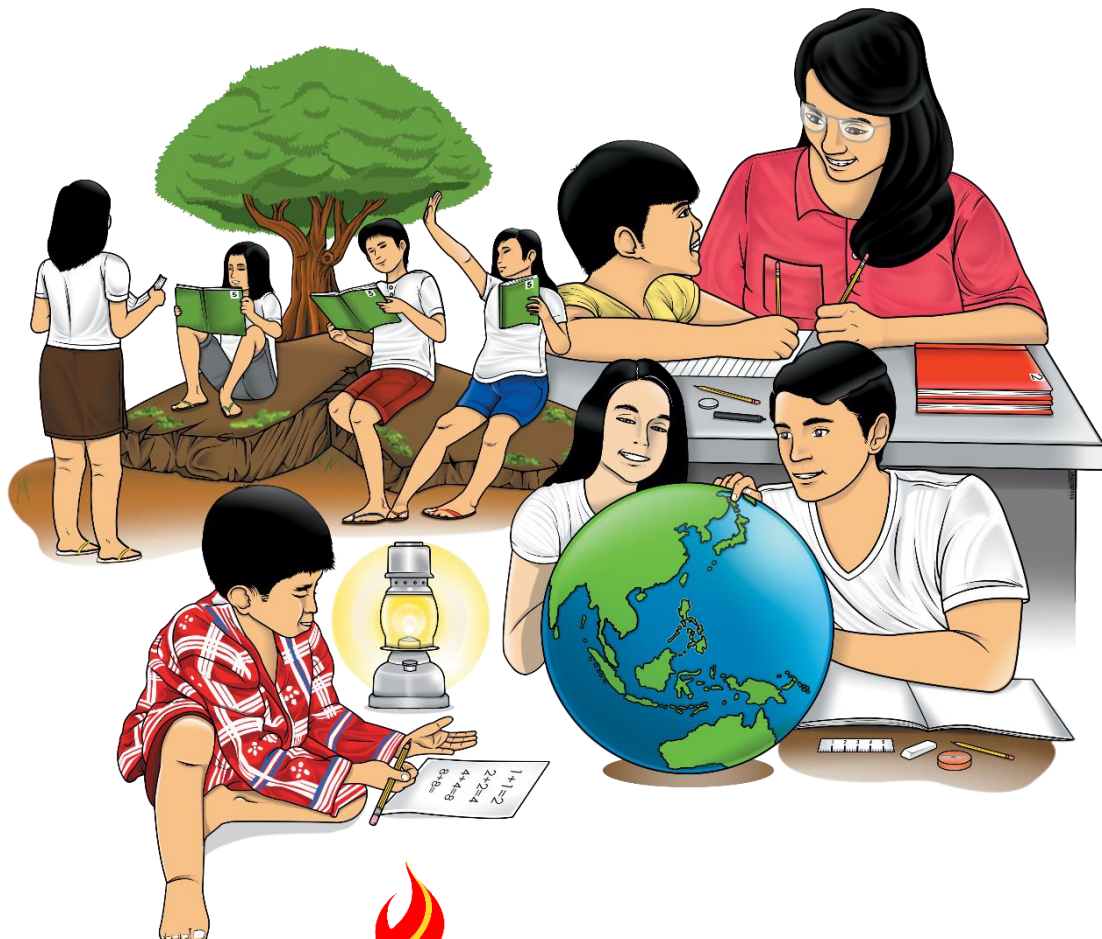


Mathematics

Quarter 3 – Module 9: Identify the Terms Related to a Circle



Mathematics – Grade 5
Alternative Delivery Mode
Quarter 3 – Module 9: Identify the Terms Related to a Circle
First Edition, 2020

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Mathematics

**Quarter 3 – Module 9:
Identify the Terms Related
to a Circle**

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 need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for 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. And 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

A lot of objects around us are circular in shape such as coins, plates, and wheels. This module is essential for you to understand the terms related to a circle. These terms are easy to remember and very useful in our daily life.

After going through this module, you are expected to:

- Identify the terms related to a circle.



What I Know

Good day to you! This part of the module aims to find out how much you know about the contents of this module.

Multiple Choice

Directions: Read each item carefully. Choose the letter of the correct answer and write it on a separate answer sheet.

1. What is a line segment joining any two points on the circle?
a. chord b. center c. diameter d. radius
2. Which of the following parts of a circle measures less than a semi-circle?
a. minor arc b. major arc c. inscribed angle d. central angle
3. What do you call a chord that passes through the center of the circle?
a. diameter b. circumference c. radius d. arc
4. Which refers to the distance around the circle?
a. perimeter b. circumference c. diameter d. central angle
5. What is a line segment that connects the center and any point on the circle?
a. arc b. chord c. radius d. diameter

6. What do you call two or more circles sharing the same center?
a. equal b. congruent c. similar d. concentric
7. What is half of a circle?
a. Arc b. semicircle c. central angle d. major arc
8. Which part of a circle measures more than 180° ?
a. diameter b. semicircle c. minor arc d. major arc
9. What do you call the intersection of the circle and tangent line?
a. diameter b. point of tangency c. radius d. center
10. Which line contains a chord of a circle?
a. tangent line b. diameter c. secant line d. radius



Please check your answers against the ANSWER KEY on page 10.

CONGRATULATIONS! If you got a score of 9 or 10, you should not have any difficulty studying the lesson in this module. If you got a score of 8 or below, you may need to study the lesson more carefully and do all the given activities.

Lesson

1

Identify the Terms Related to a Circle



What's In

There are many circular objects around us. Can you identify them? An object's shape meets a specific purpose. Can you tell why the rim of a cup is a circle, why plugs and manhole covers are round or why the bottoms of pans are circular?

Directions: Identify circular objects in the real world by matching the object in column A to its name in column B. Write the letter of your answer on a separate answer sheet.

A

1.



2.



3.



4.



5.



B

a. Php 10 coin

b. plate

c. cymbals

d. wall clock

e. frying pan

f. wheel



What's New

A circle is one of the most familiar geometric figures. All around us are circular objects such as coins, wheels, watches, plates, balls and the like. A circle's symmetric properties make it a popular choice in architecture and design.

This module will focus on the different parts of the circle.



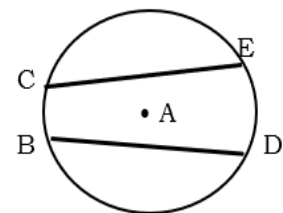
What is It

A **circle** is the set of all points that are the same distance from a fixed point on a plane called the center. A point is inside, on, or outside of a circle depending on whether its distance from the center is less than, equal to, or greater than the length of a radius, respectively.

Terms Related to a Circle

Point A is the **center** of the circle. A circle is named by its center. The circle in figure 1 is named circle A.

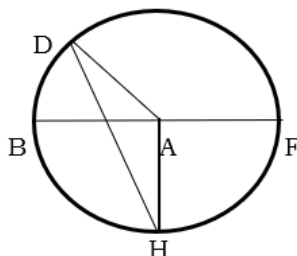
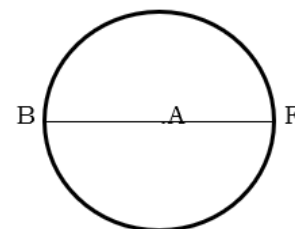
Figure 1



A line segment joining two points on the circle is called a **chord**. In Figure 1, \overline{CE} and \overline{BD} are chords.

A **diameter** of a circle is a chord that connects two points on the circle and passes through the center of the circle. Every diameter is a **chord**. In Figure 2, \overline{BF} is a diameter.

Figure 2



A **radius** is a line segment from the center of the circle to a point on the circle. A radius of the circle is one-half of the diameter. In Figure 3, \overline{AF} , \overline{AB} , \overline{AH} and \overline{AD} are **radii** (plural form of radius).

Figure 3

A **chord** is a line segment joining any two points on the circle. In figure 3, \overline{DH} and \overline{BF} are chords. A diameter is a chord.

A **central angle** is an angle formed by two radii. In figure 4, $\angle BAD$, $\angle BAH$, $\angle HAF$, and $\angle DAF$ are central angles.

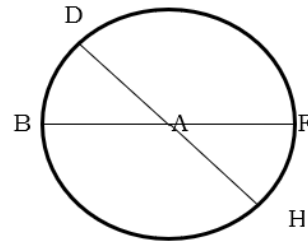


Figure 4

An **inscribed angle** is an angle whose vertex is on the circle. In figure 5,

$\angle FBG$ is an inscribed angle.

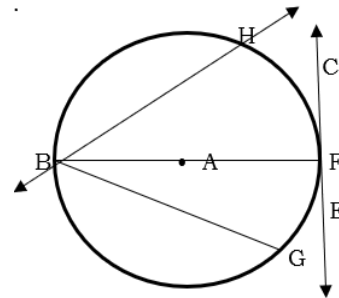


Figure 5

An **arc** is a part of the circle. In figure 5, you can find arc BG (in symbol \widehat{BG}), arc BF, arc FG, and arc BFG.

A **semicircle** is an arc which is half of the circle. In figure 5, \widehat{BGF} is a semicircle.

A **minor arc** is an arc that is less than a semi-circle. In figure 5, \widehat{FG} and \widehat{BG} are minor arcs.

A **major arc** is an arc that is more than a semi-circle. In figure 5, arc BFG and arc FBG are major arcs.

A **tangent line** is a line that intersects the circle at exactly one point. The point where the circle and tangent line intersect is called the **point of tangency**. In figure 5, line CE is a tangent line. Point F is the point of tangency.

A **secant line** is a line that intersects the circle at two points. In figure 5, line BH is a secant line.

Concentric circles are circles having the same center point. Figure 6 shows two concentric circles.

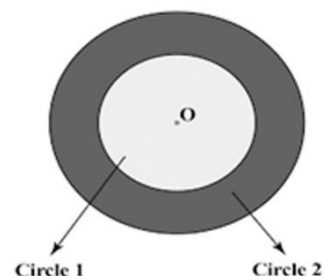


Figure 6

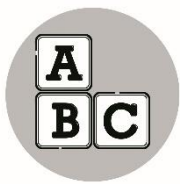
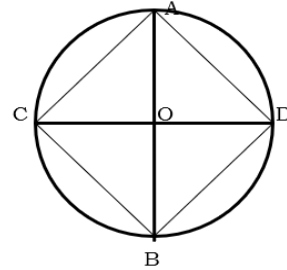
Did you understand now? Very good.

Now, you are ready to do the activity below

Activity 1: What's My Name

Directions: Read each question carefully. Name the following based on the figure at the right.

- 1) center
- 2) 4 radii
- 3) 2 diameters
- 4) 3 chords
- 5) 2 inscribed angles



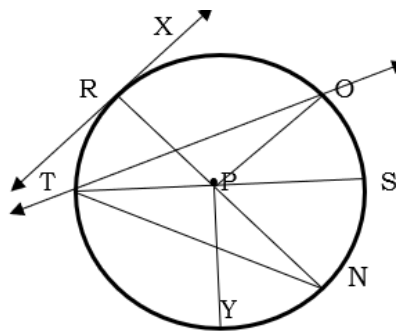
What's More

Let's enhance your understanding of the parts of the circle by doing the next activity.

Activity 2 Name Me

Directions: Name the following parts of circle P. Write your answer on a separate answer sheet.

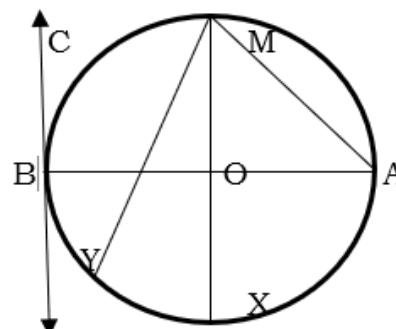
- 1) 3 radii
- 2) diameter
- 3) 3 chords
- 4) 2 central angles
- 5) tangent line
- 6) secant line
- 7) 2 inscribed angles



Activity 3 Identify Me

Directions: Identify the following parts of Circle O. Write your answer on a separate answer sheet.

- 1) \overline{OX}
- 2) \overleftrightarrow{BC}
- 3) Pt. B
- 4) Pt. O
- 5) $\angle AMY$
- 6) $\angle MOA$
- 7) \overline{AM}



Activity 4 Match - Up

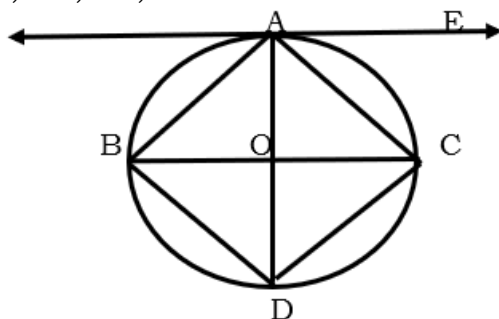
Directions: Refer to the figure shown. Match the parts of Circle O in Column A with the name of each part in Column B. Write your answer on a separate answer sheet.

Column A

- 1) Point A
- 2) \overline{AD} , \overline{BC}
- 3) \overline{AB} , \overline{AC} , \overline{BD} , \overline{CD}
- 4) $\angle ABD$, $\angle BAC$, $\angle ACD$, $\angle BDC$
- 5) $\angle AOC$, $\angle COD$, $\angle BOD$, $\angle AOB$
- 6) \overleftrightarrow{AE}
- 7) \overline{OB} , \overline{OC} , \overline{OA} , \overline{OD}

Column B

- a. center
- b. radius
- c. diameter
- d. chord
- e. inscribed angle
- f. point of tangency
- g. central angle
- h. tangent line



What I Have Learned

Activity 5 Identify Me

Directions: Choose the correct answer from the words inside the box and write your answers on a separate sheet.

Circle	Radius	Diameter	Tangent line	Secant
Center	Inscribed angle	Chord	Central angle	

- _____ 1) It is the set of all points in a plane with the same distance from a certain point.
- _____ 2) It is a line segment joining two points on the circle.
- _____ 3) It is a chord that connects two points on the circle and passes through the center of the circle.
- _____ 4) It is a line segment from the center of the circle to any point on the circle.
- _____ 5) It is an angle formed by two radii.



What I Can Do

Activity 6 Hunt Me

Directions: Copy the puzzle below on your answer sheet. Encircle the 10 words that are related to circle. The words may be written horizontally, vertically or diagonally. Find the words that are shown inside the box.

CIRCLE	RADII	INSCRIBED	CHORD	ANGLE
ARC	MINOR	MAJOR	POINT	DIAMETER

I	A	A	R	A	D	I	I	S	V	A	R	C
N	L	N	M	N	A	B	C	D	R	X	Y	I
S	P	G	L	I	N	E	I	G	O	B	X	R
C	O	L	C	B	N	E	U	E	J	C	N	C
R	I	E	A	T	X	O	L	C	A	N	I	L
I	N	I	E	B	S	C	R	D	M	E	N	E
B	T	R	D	I	A	M	E	T	E	R	R	E
E	E	A	A	I	N	M	I	I	T	T	T	X
D	A	S	C	R	X	C	H	O	R	D	A	H
E	B	C	A	S	T	N	M	S	Y	X	I	N



Assessment

Multiple Choice

Directions: Read each item carefully. Choose the letter of the correct answer and write it on a separate answer sheet.

- What part of a circle measures more than half a circle?
 - diameter
 - major arc
 - 3minor arch
 - semicircle
- What do you call the intersection of a circle and the tangent line?
 - Center
 - point of tangency
 - radius
 - arc
- How many degrees are in a circle?
 - 90°
 - 180°
 - 270°
 - 360°
- Which refers to the distance around the circle?
 - central angle
 - circumference
 - diameter
 - perimeter

5. Which do you call two or more circles sharing the same center?
 - a. equal
 - b. congruent
 - c. similar
 - d. concentric
6. What is a line segment that connects the center and any point on the circle?
 - a. arc
 - b. chord
 - c. radius
 - d. diameter
7. What is half of a circle?
 - a. arc
 - b. semicircle
 - c. major arc
 - d. central angle
8. What is a line segment that joints any two points on the circle?
 - a. chord
 - b. center
 - c. diameter
 - d. circumference
9. Which of the following measures less than a semicircle?
 - a. center
 - b. major arc
 - c. minor arc
 - d. tangent line
10. What do you call a chord that passes through the center of the circle?
 - a. arc
 - b. radius
 - c. diameter
 - d. circumference



Please check your answers with the ANSWER KEY on page 10.

Got a score of 9-10? CONGRATULATIONS! Job well done.
See you in the next module. If you scored below 9, you may have to go over the lessons and the exercises again.

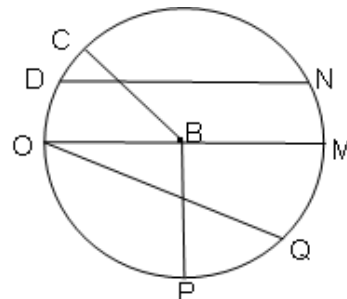


Additional Activities

Answer this activity as an additional exercise.

Directions: Identify the following parts of circle B answer and write it on a separate answer sheet.

- a. center: _____
- b. 4 radii: _____
- c. diameter: _____
- d. 4 central angles: _____
- e. 3 chords: _____
- f. 2 minor arcs
- g. 2 major arcs





Answer Key

<p>What I Have Learned</p> <p>Activity 5: Identify Me</p> <ol style="list-style-type: none"> circle chord diameter radius central angle <p>Activity 6: Hunt Me</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tbody> <tr><td>I</td><td>A</td><td>R</td><td>A</td><td>D</td><td>I</td><td>S</td><td>V</td><td>A</td><td>R</td><td>C</td></tr> <tr><td>N</td><td>L</td><td>N</td><td>M</td><td>N</td><td>A</td><td>B</td><td>C</td><td>D</td><td>R</td><td>X</td><td>I</td></tr> <tr><td>S</td><td>P</td><td>G</td><td>L</td><td>I</td><td>N</td><td>E</td><td>I</td><td>G</td><td>O</td><td>B</td><td>X</td><td>R</td></tr> <tr><td>C</td><td>O</td><td>L</td><td>C</td><td>B</td><td>N</td><td>E</td><td>U</td><td>E</td><td>J</td><td>C</td><td>N</td><td>C</td></tr> <tr><td>R</td><td>I</td><td>E</td><td>A</td><td>T</td><td>X</td><td>O</td><td>L</td><td>C</td><td>A</td><td>N</td><td>I</td><td>L</td></tr> <tr><td>I</td><td>N</td><td>I</td><td>E</td><td>R</td><td>B</td><td>S</td><td>C</td><td>R</td><td>D</td><td>M</td><td>E</td><td>N</td><td>E</td></tr> <tr><td>B</td><td>T</td><td>R</td><td>D</td><td>I</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td>R</td><td>E</td></tr> <tr><td>E</td><td>A</td><td>V</td><td>A</td><td>I</td><td>N</td><td>M</td><td>I</td><td>T</td><td>T</td><td>X</td><td></td><td></td></tr> <tr><td>D</td><td>E</td><td>A</td><td>S</td><td>C</td><td>R</td><td>X</td><td>C</td><td>H</td><td>O</td><td>R</td><td>D</td><td>A</td><td>H</td></tr> <tr><td>E</td><td>B</td><td>C</td><td>A</td><td>S</td><td>T</td><td>N</td><td>M</td><td>S</td><td>V</td><td>X</td><td>I</td><td>N</td></tr> </tbody> </table> <p>Assessment</p> <table style="width: 100%;"> <tbody> <tr><td>1. B</td><td>6. C</td></tr> <tr><td>2. B</td><td>7. B</td></tr> <tr><td>3. D</td><td>8. A</td></tr> <tr><td>4. B</td><td>9. C</td></tr> <tr><td>5. D</td><td>10. C</td></tr> </tbody> </table> <p>Additional Activities</p> <p>a. Pt. B</p> <p>b. <u>BC</u>, <u>BM</u>, <u>BP</u>, <u>BO</u></p> <p>c. <u>OM</u></p> <p>d. <u>LCBO</u>, <u>LOBP</u>, <u>LCBP</u>, <u>LCBM</u>, <u>LMBP</u></p> <p>e. <u>DN</u>, <u>OQ</u>, <u>OM</u></p> <p>f. <u>CD</u>, <u>DO</u>, <u>OC</u>, <u>OP</u>, <u>PQ</u>, <u>QM</u>, <u>NM</u>, <u>QN</u>, <u>PN</u></p> <p>g. <u>OPN</u>, <u>COQ</u>, <u>DPQ</u>, <u>OPC</u>, <u>PMD</u>, <u>PMO</u></p>	I	A	R	A	D	I	S	V	A	R	C	N	L	N	M	N	A	B	C	D	R	X	I	S	P	G	L	I	N	E	I	G	O	B	X	R	C	O	L	C	B	N	E	U	E	J	C	N	C	R	I	E	A	T	X	O	L	C	A	N	I	L	I	N	I	E	R	B	S	C	R	D	M	E	N	E	B	T	R	D	I	A	M	E	T	E	R	R	E	E	A	V	A	I	N	M	I	T	T	X			D	E	A	S	C	R	X	C	H	O	R	D	A	H	E	B	C	A	S	T	N	M	S	V	X	I	N	1. B	6. C	2. B	7. B	3. D	8. A	4. B	9. C	5. D	10. C	<p>What I Know</p> <table style="width: 100%;"> <tbody> <tr><td>6. D</td><td>7. A</td></tr> <tr><td>7. B</td><td>8. A</td></tr> <tr><td>8. D</td><td>9. C</td></tr> <tr><td>9. B</td><td>10. C</td></tr> </tbody> </table> <p>What is It</p> <p>Activity 1: What's My Name</p> <p>1. Pt. O</p> <p>2. <u>CO</u>, <u>AO</u>, <u>DO</u>, <u>BO</u></p> <p>3. <u>CD</u>, <u>AB</u></p> <p>4. <u>AC</u>, <u>BC</u>, <u>BD</u>, <u>AD</u>, <u>AB</u>, <u>CD</u></p> <p>5. <u>LACB</u>, <u>LCBD</u>, <u>L BDA</u>, <u>L ACD</u>, <u>LDCB</u>, <u>LABD</u>, <u>LACB</u>, <u>L CDA</u></p> <p>Activity 2: Name Me</p> <p>1. <u>PY</u>, <u>OP</u>, <u>PR</u>, <u>NP</u>, <u>PT</u>, <u>PS</u></p> <p>2. <u>RN</u>, <u>ST</u></p> <p>3. <u>NT</u>, <u>OT</u>, <u>ST</u>, <u>RN</u></p> <p>4. <u>LRPO</u>, <u>LOPN</u>, <u>L NPY</u>, <u>LOPN</u>, <u>LRPY</u>, etc</p> <p>5. <u>RX</u></p> <p>6. <u>OT</u></p> <p>7. <u>LOTS</u>, <u>LOTN</u>, <u>L RNT</u>, <u>LSTN</u></p> <p>Activity 3: Identify Me</p> <p>1. radius</p> <p>2. tangent line</p> <p>3. point of tangency</p> <p>4. center</p> <p>5. Inscribed angle</p> <p>6. center</p> <p>7. chords</p> <p>Activity 4: Match - Up</p> <table style="width: 100%;"> <tbody> <tr><td>1. F</td><td>4. E</td><td>7. B</td></tr> <tr><td>2. C</td><td>5. G</td><td></td></tr> <tr><td>3. D</td><td>6. H</td><td></td></tr> </tbody> </table>	6. D	7. A	7. B	8. A	8. D	9. C	9. B	10. C	1. F	4. E	7. B	2. C	5. G		3. D	6. H	
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