

Lesson Exemplar for Mathematics

Quarter 1
Lesson

1

Lesson Exemplar for Mathematics Grade 4
Quarter 1: Lesson 1 (Week 1)
SY 2024-2025

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MATHEMATICS / QUARTER 1 / GRADE 4

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES

A. Content Standards	The learners should have knowledge and understanding of measures of angles.
B. Performance Standards	By the end of the quarter, the learners are able to illustrate and measure different angles. (MG)
C. Learning Competencies and Objectives	By the end of the quarter, the learners are able to... 1. illustrate different angles (right, acute, and obtuse) using models. 2. measure and draw angles using a protractor.
D. Content	Angles
E. Integration	Application of angles in designs of objects

II. LEARNING RESOURCES

Clipart Library. (2021). Clock clipart black and white. https://clipart-library.com/free/clock-clipart-black-and-white.html#google_vignette

Clipart Library. (2023). Yardstick PNG Cliparts #2944816. https://clipart-library.com/clipart/1008551.htm#google_vignette

Colcolo. (2024). 360 Degree Protractor Full Circle 100mm Diameter Protractor Swing Arm School. *Walmart*.
<https://www.walmart.com/ip/360-Degree-Protractor-Full-Circle-100m%20m-Diameter-Protractor-Swing-Arm-School/227410994>

CueMath. (n.d.). Obtuse Angle. <https://www.cuemath.com/geometry/obtuse-angle/>

Henohenomoheji. (2024). Free illustrations and vector art:2:30. *illustAC*. https://en.ac-illust.com/clip-art/24734433/2-30#google_vignette

Pinterest. (n.d.). Protractor. <https://ph.pinterest.com/pin/184295809730629959/>

Sandidwipr. (n.d.). ballpoint object sticker free png. *Vecteezy*. <https://www.vecteezy.com/png/20693115-ballpoint-object-sticker>

Tindo. (n.d.). Golden sun from the flag of Philippines vector image. *VectorStock*. <https://www.vectorstock.com/royalty-free-vector/golden-sun-from-the-flag-of-philippines-vector-46272094>

III. TEACHING AND LEARNING PROCEDURE

NOTES TO TEACHERS

A. Activating Prior Knowledge

DAY 1

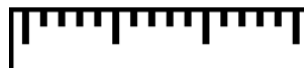
1. Short Review

Tell whether the illustration represents a point, segment or ray. Write your answer on the blank provided.

1. tip of pen _____



3. edge of ruler _____



2. hands of clock _____



4. sunrays _____



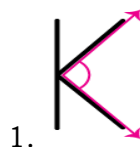
DAY 2

Begin by asking learners to recall what they know about angles.

1. What geometric figure is the vertex of an angle?
2. What geometric figure is each side of an angle?
3. How many sides does an angle have?
4. How do you name an angle?
5. Draw an angle whose sides are: $\overrightarrow{BC}$ and $\overrightarrow{BA}$

DAY 3

Classify each angle.



DAY 4

1. What are the kinds of angles that we discussed?
2. What is the tool used to measure angles?
3. What is the measure of the angle below?
4. Pretend you are explaining angles and protractors to a friend who does not know about them. Use the words, "measure" and "degrees" in your explanation.

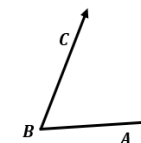
Answer Key:

DAY 1

1. point
2. ray
3. segment
4. ray

DAY 2

1. point
2. ray
3. 2
4. An angle can be named using only the vertex or three points on the angle, with the vertex in the middle and the other two points on each side. An angle can also be named by the symbol in the interior of the angle.
5. Sample answer:



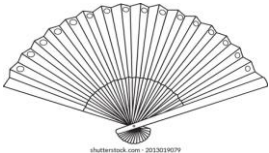
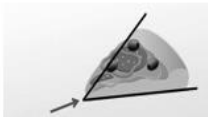
DAY 3

1. acute
2. acute
3. right

DAY 4

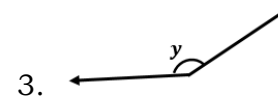
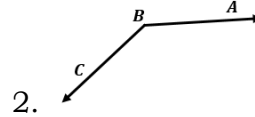
Expected answer:

1. Right angle, Acute angle, and Obtuse Angle
2. Protractor
3. 50 degrees

	For example: “We use a protractor to measure angles. The degrees tell us how big the angle is.” 2. Feedback (Optional)	
B. Establishing Lesson Purpose	DAY 1 1. Lesson Purpose Show-and-Tell Activity. Which part of each object illustrates an angles?    Angles play a significant role in geometry and real-life application. The aim for today is to understand the concept of angles. DAY 2 Introduce the concept of right and acute angles and their importance in geometry. Observe the highlighted corners or edges of the following: SET A 1. corner of walls  2. edges of book covers  3. windows  SET B 1. slice of pizza  2. side of cloth hanger  3. road sign  Today, we will discuss angles that form an L shape. These angles are called right angles. We will also learn about angles that are smaller than a right angle. These are called acute angles.	Introduce angles by showing an image of an angle and ask if anyone can explain what it looks like. Then show an object (e.g., a book) and ask them to identify where they see angles. Real-life Examples: Guide learners around the classroom or school environment to observe corners of walls, edges of book cover, and windows. Sample Answer: • In SET A, students will observe that an "L" shape is formed. • In SET B, students will observe that the angles formed are smaller than those in SET A. Discuss examples of “L” shaped and “small” angles in daily life and their importance.

DAY 3

Describe the following angles.



Today, we are going to learn about angles whose measures are between 90 degrees and 180 degrees. We will also learn how to measure angles using a protractor.

DAY 4

Do you know how to construct an angle using a protractor?
Today, we are going to construct angles using a protractor.

DAY 1

2. Unlocking Content Vocabulary

- An **angle** is the union of two rays with the same endpoint.
- This common endpoint is called the **vertex** of the angle.
- The sides of an angle are **rays**.
- A **protractor** is a tool we use to measure angles in degrees.

DAY 2

- **Right Angle** - an angle that forms an “L” shape and measures 90 degrees.
- **Acute Angle** - an angle that is smaller than a right angle and measures between zero and 90 degrees.

DAY 3

- An angle whose measure is between 90 degrees and 180 degrees is called an **obtuse angle**.
- **Protractor** is a tool for measuring angles.
- **Degree** is the unit of measure for angles. This is a 360-degree protractor.



DAY 4

- We use a **protractor** to measure and construct angles.
- The measure in **degrees** tells us how big the angle is.

Sample answer:

The angles are bigger than the right angle.

C. Developing and Deepening Understanding

DAY 1

SUB-TOPIC 1: Angles

1. Explicitation

The sample figure is an angle.

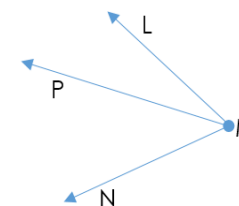
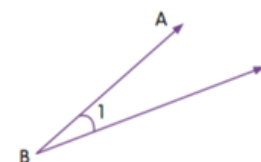
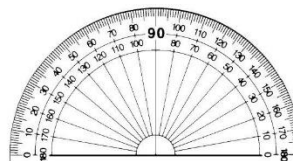
An **angle** is the union of two rays with the same endpoint. This common endpoint is called the **vertex** of the angle. The vertex of the angle is **point E**. Its sides are: $\overrightarrow{EN}$ and $\overrightarrow{EL}$.

An angle can be named using only the vertex or three points on the angle, with the vertex in the middle and the other two points on each side. The angle of the figure can be named as: $\angle E$ or $\angle NEL$ or $\angle LEN$. $\angle \rightarrow$ this symbol is read as "angle"

An angle can also be named by the symbol in the interior of the angle, by the intersection of the sides. This angle can be named as: $\angle B$ or $\angle ABC$ or $\angle CBA$ or $\angle 1$.

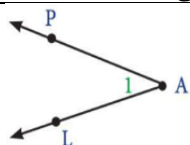
If several angles have the same vertex, we must name each angle using three points rather than using the vertex only. In the figure, each of the 3 angles has vertex M: $\angle LMP$, $\angle PMN$, $\angle LMN$. The angles must not be named using only the vertex to avoid confusion.

A **protractor** is a device or tool used to measure angles. **Degree** ($^\circ$) is a unit of angle measure.



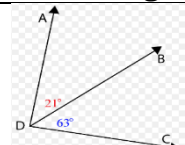
2. Worked Example

Example 1: Name the angle in 4 ways.



The angle can be named as follows: $\angle A$, $\angle PAL$, $\angle LAP$, or $\angle 1$

Example 2: Name 3 angles in the figure.



The angles in the figure are: $\angle ADB$ or $\angle BDA$, $\angle BDC$ or $\angle CDB$, $\angle ADC$ or $\angle CDA$.

3. Lesson Activity

See Worksheet Activity No. 1

DAY 1

The teacher should emphasize that angles may be named using:

1. vertex point
2. a point on each of the angles ray
3. symbol in the interior of the angle

Remind also the learners that if several angles have the same vertex, name each angle using three points rather than using the vertex only.

The teacher may show the pupils a real protractor and ask them to describe it.

Sample observations:

1. There are two sets of numbers or scales.
2. The scales range from 0 to 180.
3. It is a semi-circle or half-circle in shape.

This part introduces the protractor only as introductory knowledge. The succeeding lessons present the use of a protractor to measure angles.

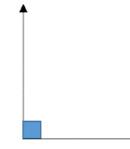
Have learners take turns creating angles on the board or at their desks. Lead a discussion about why these

DAY 2

SUB-TOPIC 2: Understanding Right Angles and Acute Angles

1. Explicitation

An angle that forms an "L" shape is called **Right Angle**. Right angles measure 90° (90 degrees). We will learn how to measure angles in the coming days. Present a visual representation of a right angle. The small square at the intersection of the two sides of the angles implies that the angles is right.



Have you ever noticed the long and short hands of a clock pointing at different numbers and forming an angle? Well, those hands create angles to show us the time. What time is shown on the clock?

The hands of the clock at 10:00 form an **Acute Angle**. An acute angle is smaller than a right angle. It measures between zero and 90 degrees. Use a TV, interactive whiteboard, or pictures to display various angles, including right angles, acute angles, and obtuse angles. Have learners identify the right angles and acute angles among them.

2. Worked Example

Ask pupils to form their bodies into a right angle by bending their arms at the elbow to create an "L" shape and then ask them to form their arms into an acute angle. Provide materials like straws, cardboard, or craft sticks. Have learners work in pairs or small groups to create their right and acute angles by joining two pieces together. Provide practice problems where learners identify and draw right and acute angles.

3. Lesson Activity

See Worksheet Activity No. 2

DAY 3

SUB-TOPIC 3: Obtuse Angles

1. Explicitation

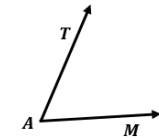
Yesterday, we learned that a right angle measures 90 degrees while an acute angle is smaller than a right angle. This time we will focus on angles that are bigger than a right angle. Is the angle formed by the hands of a clock at 2:30 smaller or bigger than a right angle?



angles are important in different places. For example, discuss why doors might have angles. Provide positive feedback on learners' participation and clarify any misconceptions that may arise.

Lesson Activity Answer:

- vertex: point Q
sides: $\overrightarrow{QR}$ and $\overrightarrow{QP}$
- $\angle x$, $\angle T$, $\angle STU$, $\angle UTS$
- Sample answer:



DAY 2

Note to teacher: You may use the different suggested activities if needed:

Real-life Exploration: Take the learners on a "right angle and acute angle hunt" around the classroom or school. Ask them to find objects with right and acute angles and explain why those angles are right or acute.

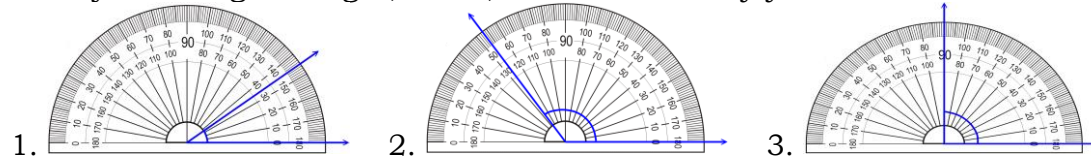
Creative Corner: For creative fun, ask the learners to draw their own triangles and color in the acute and right angles. They can even name their triangles and talk about the angles.

An angle whose measure is between 90 degrees and 180 degrees is called an **obtuse angle**.

Real-World Scavenger Hunt: Students will identify objects or shapes around them with obtuse angles, making the learning experience interactive and engaging.

2. Worked Example

Classify each angle as right, acute, or obtuse. Justify your answer.



3. Lesson Activity

See Worksheet Activity No. 3

SUB-TOPIC 4: Measuring Angles

1. Explication

Do you know how to use a protractor to measure angles?

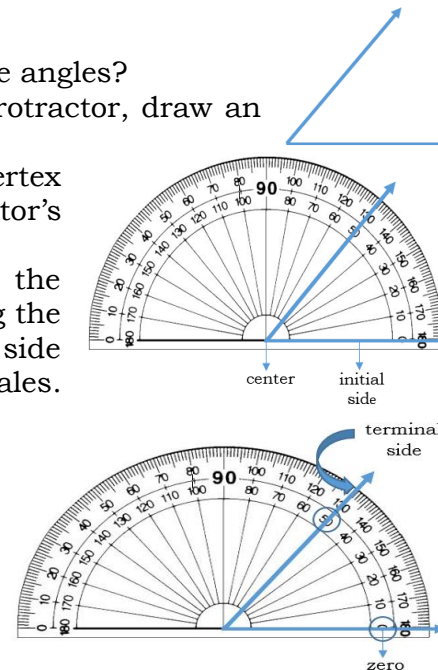
This is how to measure an angle using a protractor, draw an angle on the screen or board.

Then, place the protractor's center at the vertex (corner) of the angle and align the protractor's baseline with one side of the angle (initial side).

As you do this, the protractor will show the measurement of the angle. Start from zero along the initial side until the number along the other side (terminal side). Take note that there are two scales. In the example, look at the **inner scale**. The measure of the angle is 50 degrees (50°).

Strategy for Precise Angle Measurement:

1. **Steady Protractor:** Put your protractor on a flat and stable surface, like a table or a desk. This helps to keep it steady while you measure.



Interactive Activities: Provide hands-on activities like creating paper "L" corners, and using building blocks to construct shapes with right angles. These activities make the concept tangible and memorable.

Math Games: Introduce simple math games that involve identifying and drawing right angles. For instance, a bingo game where they mark squares with right angles on a grid.

DAY 3

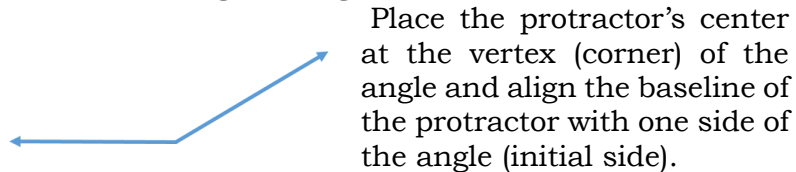
Introduction to Obtuse Angles: Help learners visualize obtuse angles by drawing examples and relating them to real-world scenarios. For instance, imagine the angle formed by opening a book cover.

Visual Aids and Practical Examples: Utilize visual aids such as diagrams, interactive software, or physical models to help learners grasp the concept of obtuse angles. You can also provide practical examples from their surroundings, like the angles formed by the roof of a house or the hands on a clock showing 9:15.

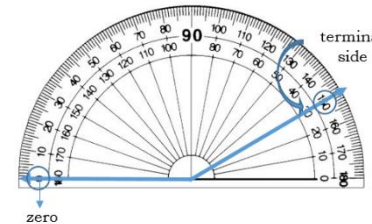
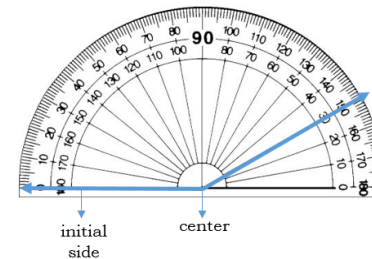
2. **Center Match:** Make sure the middle dot of the protractor (that's the center) fits right on the corner point of the angle. This is really important for getting the right measurement.
3. **Side Line-Up:** One side of the angle should be placed right along the straight line at the bottom of the protractor. This is the starting point for measuring.
4. **Read Carefully:** Look where the other side of the angle crosses the protractor's scale. Read the number right where it touches. Read it carefully, like reading a number in your math problems.

2. Worked Example

Measure the given angle.



Start from the zero along the initial side until the number along the other side (terminal side). Take note that there are two scales. Look at the **outer scale**. The measure of the angle is 150 degrees (150°).



3. Lesson Activity

See Worksheet Activity No. 4

DAY 4

SUB-TOPIC 5: Constructing Angles

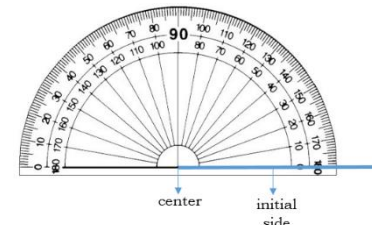
1. Explication

Can you draw an angle whose measure is 30 degrees using your protractor? To draw a 30-degree angle, follow these steps:

Step 1: Draw a ray (initial side) in any direction.



Step 2 Put the protractor on top of the ray. The center must be on top of the vertex, and the baseline must be aligned with the initial side.



Introduce the concept of obtuse angles and their significance. Visual Exploration: Show pictures or diagrams of obtuse angles in various real-world scenarios. Use relatable examples like open doors, mountains, or slides to help learners visualize and connect to the concept.

Hands-On Activities: Provide materials for learners to create their own obtuse angles using paper, protractors, or even their own bodies.

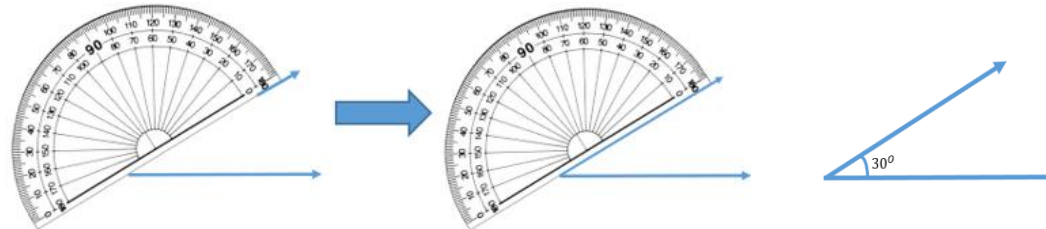
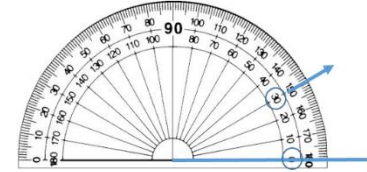
Comparative Learning: Compare obtuse angles with acute angles. Use visual aids to show how they differ in size and shape. This comparison will help learners understand the unique characteristics of obtuse angles.

Answers:

1. acute - smaller than a right angle
2. obtuse - bigger than a right angle
3. right - "L" shaped; measures 90 degrees

Step 3: Look for the zero mark on the protractor, then mark 30 degrees along the edge. Note that there are two scales. Look at the inner scale.

Step 4: Use the protractor's edge to draw the angle's other side (terminal side). You may indicate the measure of the angle.



2. Worked Example

Draw angles with the following measures: (follow the 4 steps)

a. 120°

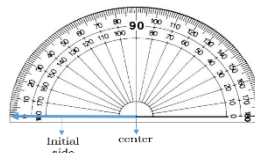
b. 62°

Solutions:

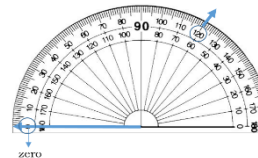
a. STEP 1:



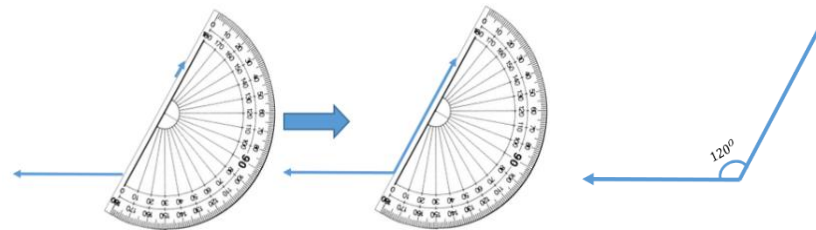
STEP 2:



STEP 3: Look at the outer scale.



STEP 4: You may indicate the measure of the angle.



Answers:

a)

b) Answers may vary.

Introduce protractors and explain their significance. Show the class a protractor and explain its purpose. Demonstrate how to hold a protractor correctly and identify its different parts: the center hole, the zero-degree mark, and the degrees marked in a clockwise and counterclockwise direction.

Exploring the Protractor: Provide each learner with a protractor and guide them through the following steps:

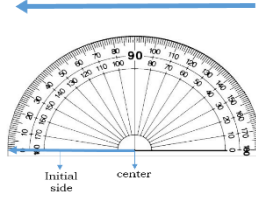
Zero-Degree Mark: Show them where the zero-degree mark is located. Explain that angles are measured from this point.

Reading Angles: Demonstrate how to read an angle's measurement on the protractor. Place the protractor on an angle and align the center hole with the vertex of the angle. Read the degree measure where the second side of the angle crosses the protractor's scale.

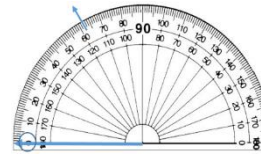
b.

STEP 1:

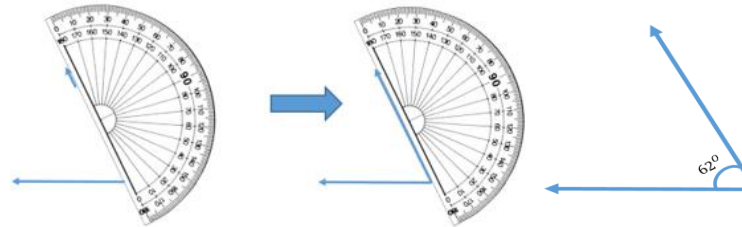
STEP 2:



STEP 3: Look at the outer scale.



STEP 4: You may indicate the measure of the angle.



3. Lesson Activity

See Worksheet Activity No. 5

Emphasize that the measurement is less than 90 degrees and that the angle is acute.

Classifying Angles:

Explain that angles can be classified based on their measurements:

- Acute angles are less than 90 degrees.
- Right angles are exactly 90 degrees.
- Obtuse angles are more than 90 degrees but less than 180 degrees.

DAY 4

Provide real-world scenarios where angles need to be measured and drawn. Allow learners to work in pairs to solve these problems.

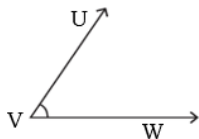
Scenario: Building a Ramp

Problem: Imagine you're designing a ramp for a skateboard park. The ramp needs to have an incline that is not too steep. You want the incline to be 30 degrees. Draw an angle of 30 degrees that represents the inclination of the ramp.

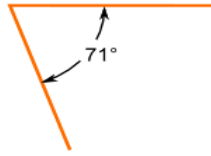
Instructions: Working with your partner, use a protractor to

		draw a 30-degree angle representing the ramp's incline on a blank sheet of paper. Label the vertex "Ramp Incline." Importance of Precision: Gather learners and their drawings. Discuss how small errors in placing the protractor or drawing the angle can result in incorrect angles. Emphasize that being precise with measurements leads to accurate results.
D. Making Generalizations	DAY 1 1. Learners' Takeaways Have learners summarize the key concepts about angles. Encourage them to consider real-world situations where understanding angles is important. 2. Reflection on Learning Give instances when these lessons can help you. DAY 2 1. Learners' Takeaways Have learners summarize the characteristics of right and acute angles in their own words. 2. Reflection on Learning Engage learners in discussions about why right and acute angles are important in everyday life, architecture, and navigation. Encourage them to share their observations and ideas. DAY 3 1. Learners' Takeaways Write down 2 things you learned today and 1 question you want to ask about the lesson.	Sample answer: Right angles form an "L" shape and measure 90 degrees. Acute angles are smaller than a right angle and measure between zero and 90 degrees.

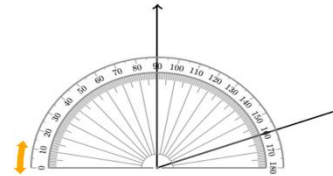
	2. Reflection on Learning 1. What other objects or structures have obtuse angles? 2. What is the importance of obtuse angles in real life? 3. Why is precise angle measurement important? DAY 4 1. Learners' Takeaways Ask learners to summarize the steps for measuring and drawing angles with protractors. Encourage them to reflect on the challenges they faced and how accurate measurements are crucial in practical situations. 1. How did you find drawing angles using a protractor? 2. Why is it important to follow the steps accurately when using a protractor? 2. Reflection on Learning Give instances when these lessons can be of help to you. Can you think of real-life situations where precise angle measurement is crucial?	
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IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		NOTES TO TEACHERS
A. Evaluating Learning	DAY 5 1. Formative Assessment 1. What is the vertex of the angle below?  2. Name the angle shown above. 3. Classify the angle shown.  4. Classify the angle shown in the picture on the right side. 	Distribute Activity No. 6 as their quiz. Answer: 1) Point V 2) $\angle V$ or $\angle UVW$ or $\angle WVU$ 3) Right angle 4) Right angle 5) Acute angle 6) 70 degrees 7) 90 degrees 8) 90° and 180° 9) 0° and 90° 10) Protractor 11) a) 35° b) 67° c) 90°

5. Classify the angle shown below.



6. What is the measure of the angle shown on the protractor?



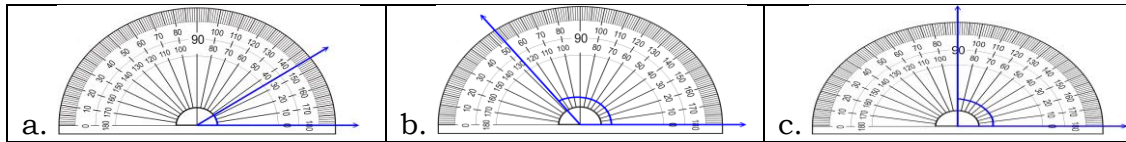
7. The measure of a right angle is _____.

8. The measurement of an obtuse angle is between _____ and _____.

9. The measurement of an acute angle is between _____ and _____.

10. A tool used to measure angles is called _____.

11. Tell the measure of each angle.



12. Construct the following angles:

a. 45 degrees

b. 70 degrees

c. 130 degrees

2. Homework (Optional)

B. Teacher's Remarks

Note observations on any of the following areas:

Effective Practices

Problems Encountered

strategies explored

materials used

The teacher may take note of some observations related to the effective practices and problems encountered after utilizing the different strategies, materials used, learner engagement, and other related stuff.

	<i>learner engagement/ interaction</i>			Teachers may also suggest ways to improve the different activities explored/lesson exemplar.
	<i>others</i>			
C. Teacher's Reflection	<i>Reflection guide or prompt can be on:</i> • <u><i>principles behind the teaching</i></u> <i>What principles and beliefs informed my lesson?</i> <i>Why did I teach the lesson the way I did?</i> • <u><i>students</i></u> <i>What roles did my students play in my lesson?</i> <i>What did my students learn? How did they learn?</i> • <u><i>ways forward</i></u> <i>What could I have done differently?</i> <i>What can I explore in the next lesson?</i>			Teacher's reflection in every lesson conducted/facilitated is essential and necessary to improve practice. You may also consider this as an input for the LAC/Collab sessions.