

LESSON PLAN (CONSOLIDATED)

SUBJECT: MATHEMATICS

GRADE: VI

Chapter Number and Title of Topic 4 and Angle and its types

Duration

Total: 5 periods (approx. 40 min each)

Learning Objectives

Students will be able to:

- ❖ Identify lines, line segments and rays.
- ❖ Measure angles in whole-number degrees using a protractor.
- ❖ Develop the ability to sketch angles of specified measure.
- ❖ Solve addition and subtraction problems to find unknown angles on a diagram in real world.
- ❖ Identify and name parallel lines and perpendicular lines, vertical and horizontal lines.
- ❖ Relate angles to shape.

Teaching aids and resources

Video (Teaching and explanation)

PPT

Concept Map

Additional Resources URL (Web Links)

Previous knowledge required

This lesson requires

- Basic knowledge of shapes and it's sides
- A straight line stands on another straight line, what is formed?
- Protractor is used for which purpose?

Announcement of topic

Today we will start with the topic “ANGLES”

Teaching and techniques

Due to various social backgrounds and multiple intelligences, the classroom might be a diverse area. The following techniques can be used for various group:

For gifted students:

Encouragement for referring other resources

For weak students:

Buddy help to be provided

Provide grade up classes

For differently abled students:

Ignore spelling mistakes and formulae, if not written

Teaching strategies: experiential learning, problem solving, class discussion, power point presentation, lecture method, demonstration method

Techniques: Quiz, daily practice problem, Multiple choice questions

Content Obligatory

Vocabulary

Keywords

Angle

Acute angle

Right angle

Straight angle

Obtuse angle

Reflex angle

Straight angle

Learning concepts

Concept of angle formation
Concept of directions
Concept of measuring angles
Concept of revolutions
Concept of complementary angles
Concept of supplementary angles

Hard spots / Focus spots

- Classify angles according to their measures
- Comparison of angles according to their shapes
- Calculate supplement and complement angles
- Find the number of right angles and straight angles with the help of clock

Experiential content

- ❖ To classify different angles by activity method

Subject Enrichment Activities For Internal Assessment

- (i) Questions about draw out the last five letters of the alphabet in capitals and what kind of angles are formed?
- (ii) Quiz and knowledge testing on finding the kind of angle are formed by the hands of clock.
- (iii) Find, how many degrees will the minute hand of clock rotate?
- (iv) Oral testing on list situations where acute, obtuse and right angles are made.

Recapitulation

The chapter will be recapitulated by taking a quiz covering basic concepts in the chapter.

Assignment (for assessment)

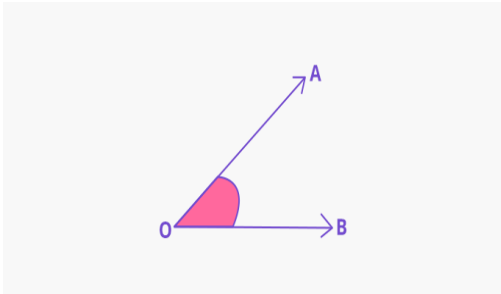
- Q1. How many right angles are formed if you start facing south and turn clockwise to west?
- Q2. When it is 10:30, what kind of angle is formed by the hands of the clock?
- Q3. What is the angle name for half a revolution?
- Q4. The measures of some angles are given below. Write the type of each angle.
- (i) 75° (2) 215° (3) 180° (4) 148°

LESSON PLAN (DAY WISE)

DAY – 1, 2 (The topic will be completed in two periods)

Chapter	5, Understanding elementary shapes
Topic	Angles
Period number	1,2 (approx. 40 min each)
Learning Objectives	The learners will be able: ➤ Identify lines, line segments and rays ➤ Identify and name parallel and perpendicular lines, vertical and horizontal lines ➤ Analyse and measure angle using a protractor ➤ Identify angles in our surroundings and know how to classify it ➤ The size of angle varies with the size of arc made with the angle vertex as centre
Teaching Aids / Resources	Videos (Teaching and Explanation) PPT Concept Map Additional Resources URL (Web links)
Previous Knowledge required	Students should understand and recall the concepts of planes, points etc. Students will need to be able to identify line segments, points and rays in a two dimensional figure.

Announcement of topic	Students today we will start with the topic “Angles”
Teaching Methodology / strategy	Transaction would proceed in the following manner: Suggestive Methodologies: Brain Storming / Curiosity Questioning Lecture and demonstration method Guided practice followed by Independent practice- NCERT questions to be discussed in the classroom. Cooperative learning, Inquiry based instructions
Content Obligatory Vocabulary (Keywords)	LINE is a set of points extending indefinitely in two directions. LINE SEGMENT is a piece of a line which has two end points. RAY is a part of a line with one end point. ANGLE is made up of two rays that share the same endpoint calls vertex.
Learning Concepts / Teaching points	In the beginning (10 minutes): A short video related to point, ray, line and line segment will be shown to students. Some examples will be given. The diagram is enclosed in a purple rectangular border and contains three yellow rounded rectangular boxes, each illustrating a geometric concept: Line: A red line with arrows at both ends. The text below states: "We indicate a line with arrows at both ends to show that the line continues forever in both directions." Line Segment: A red line segment with blue dots at both ends. The text below states: "A line segment is a part of a line with end points at both ends." Ray: A red ray starting from a blue dot on the left and pointing right with an arrow. The text below states: "A ray has an end point at one end and an arrow at the other end to show that it starts from one point and then goes on forever in one direction."

	Lesson in the mid (20 minutes) Definition of angle will be explained with figure and students will be get acknowledged. Definition of Angle: In geometry, an angle can be defined as the figure formed by two rays meeting at a common end points. An angle is represented by the symbol $\angle$. Here, the angle below is $\angle AOB$  Lesson in the end (10 minutes) Learning will be consolidated by recapitulating the topic. Home assignment will be given
Hard Spots / Focus Spots	Questions related to angles
Subject Enrichment Activities for Internal Assessment	Activity – To find angle with the help of clock, by folding a paper in the shape of angle, find angle with the help of adjacent sides of wall, table etc.
Recapitulation	The chapter will be recapitulated by taking oral test
Assignment Homework	Day – 1 Q1. What is the connection between rays and angles? Q2. How an angle is formed? Day – 2 Q1. Write any two situations from real life where an angle may be seen. Q2. How many vertex does an angle has?

DAY -3, 4 (The topic will be completed in 2 periods)

Chapter	5, Understanding elementary shapes
Topic	Types Of Angles
Period Number	3, 4 (approx. 40 minutes each)
Learning Objectives	The learners will be able: ➤ Identify lines, line segments and rays

	➤ Identify and name parallel and perpendicular lines, vertical and horizontal lines ➤ Analyse and measure angle using a protractor ➤ Identify angles in our surroundings and know how to classify it ➤ The size of angle varies with the size of arc made with the angle vertex as centre
Teaching Aids / Resources	Videos (Teaching and Explanation) PPT Concept Map Additional Resources URL (Web links)
Previous Knowledge required	Students should understand and recall the concepts of planes, points etc. Students will need to be able to identify line segments, points, rays and angles in a two dimensional figure.
Announcement of topic	Students today we will start with the topic “Angle and its types”
Teaching Methodology / strategy	Transaction would proceed in the following manner: Suggestive Methodologies: Brain Storming / Curiosity Questioning Lecture and demonstration method Guided practice followed by Independent practice- NCERT questions to be discussed in the classroom. Cooperative learning, Inquiry based instructions
Content Obligatory Vocabulary (Keywords)	Acute angle Right angle Obtuse angle Reflex angle Straight angle Complete angle
Learning Concepts / Teaching points	Lesson in the beginning (10 minutes): A short video related to types of angles will be shown to students. Some examples will be given. Definition of angle will be explained. Lesson in the mid (20 minutes) Types of angles will be explained and students will get acknowledge.

ACUTE ANGLE an angle whose measure is less than 90 degree is called acute angle.

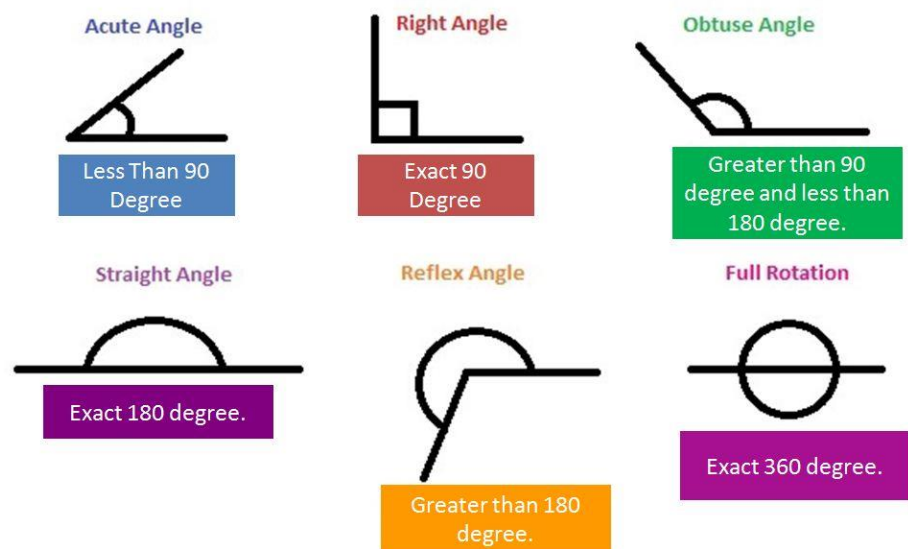
RIGHT ANGLE an angle whose measure is equal to 90 degree is called right angle.

OBTUSE ANGLE an angle whose measure is more than 90 degree but less than 180 degree is called obtuse angle.

STRAIGHT ANGLE an angle whose measure is equal to 180 degree is called straight angle.

REFLEX ANGLE an angle whose measure is more than 180 degree but less than 360 degree is called reflex angle.

COMPLETE ANGLE an angle whose measure is equal to 360 degree is called complete angle.



Lesson in the end (10 minutes)

Learning will be consolidated by recapitulating the topic.

Home assignment will be given

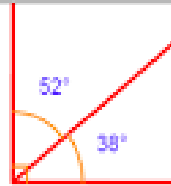
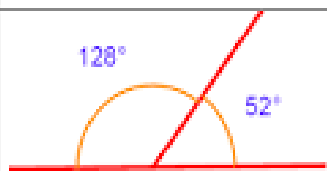
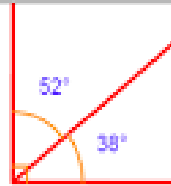
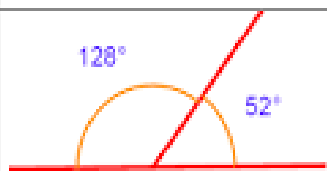
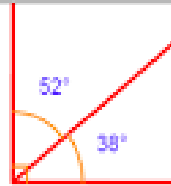
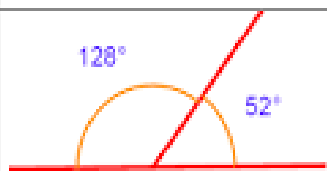
Hard Spots / Focus Spots

Questions related to Types Of Angles.

Subject Enrichment Activities for Internal Assessment	Activity – To find angle with the help of clock, by folding a paper in the shape of angle, find different types of angles from real life situations etc.
Recapitulation	The chapter will be recapitulated by taking oral test
Assignment Homework	Day – 1 Q1. Is 108 degree an obtuse angle? Q2. Write down the types of angles? Day – 2 Q1. How many number of right angles are formed if your clock goes from 3 to 12? Q2. Is straight angle is half of a revolution, true or false?

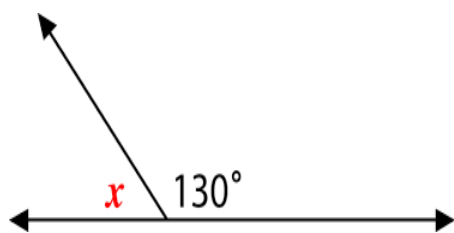
DAY – 5

Chapter	5 Understanding elementary shapes
Topic	Supplementary and Complementary angles
Period Number	5 (approx. 40 min each)
Learning Objectives	The learners will be able: (i) Students will measure the degrees for sets of angles. (ii) They will then use their knowledge of straight, right, obtuse, and acute angles to make connections to complementary, supplementary angles.
Teaching Aids / Resources	Videos (Teaching and Explanation) PPT Concept Map Additional Resources URL (Web links)
Previous Knowledge required	Student's knowledge testing on: The types of angles (right, acute, obtuse, and straight). How to operate and read a protractor.
Announcement of topic	Students today we will start with the topic “Supplementary and Complementary angles”
Teaching Methodology / strategy	Transaction would proceed in the following manner: Suggestive Methodologies: Brain Storming / Curiosity Questioning Lecture and demonstration method Guided practice followed by Independent practice- NCERT questions to be discussed in the classroom.

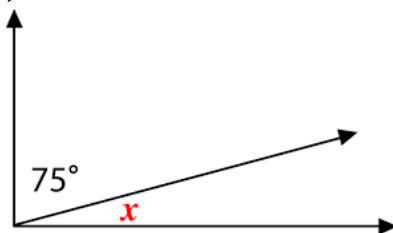
	Cooperative learning, Inquiry based instructions									
Content Obligatory Vocabulary (Keywords)	SUPPLEMENTARY ANGLES COMPLEMENTARY ANGLES									
Learning Concepts / Teaching points	Lesson in the beginning (10 minutes): A short video related to supplementary and complementary angles will be shown to students. Some examples will be given. Lesson in the mid (20 minutes) Students will be divided into groups and two figures will be provided to each group. Firstly teacher will explain about the supplementary and complementary angles from the figures and find the angles then from the given figures students will discuss with their peer to find angles. <table><tr><th>Type of Angles</th><th>Description</th><th>Example</th></tr><tr><td>Complementary Angles</td><td>Angles that add up to 90°</td><td></td></tr><tr><td>Supplementary Angles</td><td>Angles that add up to 180°</td><td></td></tr></table> In complementary the sum of angles is 90 degree Complement of 38 degree = $90 - 38$ = 52 degree In supplementary angles the sum of angles is 180 degree Supplement of 52 degree = $180 - 52$ = 128 degree Lesson at the end (10 minutes) Learning will be consolidated by recapitulating the topic.	Type of Angles	Description	Example	Complementary Angles	Angles that add up to 90°		Supplementary Angles	Angles that add up to 180°	
Type of Angles	Description	Example								
Complementary Angles	Angles that add up to 90°									
Supplementary Angles	Angles that add up to 180°									
Hard Spots / Focus Spots	To find angles of supplementary and complementary									
Subject Enrichment Activities for Internal Assessment	To find angles of any figure from daily life objects.									
Recapitulation	The chapter will be recapitulated by taking quiz.									

Assignment
Homework

(i)



(ii)



Find the angles from the given figures.