

Summer Learning Program 2024

Teacher's Guide - Mathematics

Grade 8

Chapter 15- Pythagoras' theorem (5 sessions)

The table below details the objectives addressed by each exercise of the pre-test, the grade level at which these objectives are taught, and the resources that can be used to remediate gaps in these objectives.

Exercise(s)	Objective(s)	Grade & Chapter	Remedial
1, 2	Apply the formulas to calculate areas of a square, rectangle, triangle, disc.	Grade 5 Chapter 28	ME-G4-Ch34-SLO1-Measuring areas Slides 17 to 27
3	Identify the right, isosceles and equilateral triangles, by the sides and the angles.	Grade 6 Chapter 12	ME-G6-Ch12-SLO6-Triangles Slides 7 to 28

For every remedial activity, teachers can select from the allocated slides mentioned in the table and not necessarily all slides.

Pythagoras' theorem – G8

Objectives	Resource	Slide(s)	Activity	Method
Apply Pythagoras' theorem to find the length of a side of a right triangle, knowing the other two sides. Use Pythagoras' theorem in proofs. Use Pythagoras' theorem for	Pythagoras theorem-G8	3	Prerequisites	After covering the prerequisites listed in the table above, the teacher can remind the students of the related concepts to set the foundation for the class.
		4	Problem of the chapter	The teacher has the students read the problem, discusses it with them, and gives them time to attempt to solve it (Problem-based learning). Students are not necessarily expected to solve it correctly at this level.
		5	Activity	The teacher asks the students to sit in groups and work on the activity. After completing the activity, the students

calculating lengths.				discuss their solutions with their classmates and the teacher, who then synthesises the result.
	6	Text of the lesson		The teacher presents the text of the lesson and discusses it with the students.
	7, 8	Applications		The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the applications individually, then compare their answers with a classmate, and finally share their answers with the entire class.
	9	Text of the lesson		The teacher presents the text of the lesson and discusses it with the students.
	10, 11	Applications		The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the applications individually, then compare their answers with a classmate, and finally share their answers with the entire class.
	12	Text of the lesson		The teacher presents the text of the lesson and discusses it with the students.
	13 to 16	Applications		The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the applications individually, then compare their answers with a classmate, and finally share their answers with the entire class.
	17	Problem of the chapter – solution		Students work on the problem individually or in groups, with guidance from the teacher.
	19	Focus		The teacher divides the students into three groups, assigning each group one property and asks them to create a Frayer model about that property.
	18	Assignment		The teacher selects applications from the national textbook and asks students to solve them individually, in pairs, or in groups.

Chapter 18- The right triangle (5 sessions)

The table below details the objectives addressed by each exercise of the pre-test, the grade level at which these objectives are taught, and the resources that can be used to remediate gaps in these objectives.

Exercise(s)	Objective(s)	Grade & Chapter	Remedial
13, 14, 15	<p>Knowing what are two congruent triangles as well as the corresponding elements of two congruent triangles.</p> <p>Knowing that two triangles having respectively an equal side adjacent to two respectively equal angles are congruent.</p> <p>Knowing that two triangles having respectively an equal angle included between two equal sides are congruent.</p> <p>Knowing that two triangles having their sides respectively equal are congruent.</p> <p>Using the above conditions in the proof.</p>	Grade 7 Chapter 4	Triangles Case of equality (congruent triangles)- G7 Slides 11 to 27

For every remedial activity, teachers can select from the allocated slides mentioned in the table and not necessarily all slides.

The right triangle – G8

Objectives	Resource	Slide(s)	Activity	Method
<p>State and apply the converse of Pythagoras' Theorem in a triangle.</p> <p>Prove and use the congruency of two right angled triangles for the case of hypotenuse-Leg. Make use of the different characteristics of a right triangle.</p>	The right triangle- G8	3	Prerequisites	After covering the prerequisites listed in the table above, the teacher can remind the students of the related concepts to set the foundation for the class.
		4	Problem of the chapter	The teacher has the students read the problem, discusses it with them, and gives them time to attempt to solve it (Problem-based learning). Students are not necessarily expected to solve it correctly at this level.
		5	Activity	The teacher asks the students to sit in groups and work on the activity. After completing the activity, the students discuss their solutions with their

				classmates and the teacher, who then synthesises the result.
		6	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.
		7, 8	Applications	The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the applications individually, then compare their answers with a classmate, and finally share their answers with the entire class.
		9	Activity	The teacher asks the students to sit in groups and work on the activity. After completing the activity, the students discuss their solutions with their classmates and the teacher, who then synthesises the result.
		10	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.
		11, 12	Applications	The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the applications individually, then compare their answers with a classmate, and finally share their answers with the entire class.
		13	Problem of the chapter – solution	Students work on the problem individually or in groups, with guidance from the teacher.
		15	Focus	The teacher divides the students into three groups, assigning each group two properties to create a summary that includes a figure and a discussion. These summaries are then displayed on cardboards on the wall.
		14	Assignment	The teacher selects applications from the national textbook and asks students to solve them individually, in pairs, or in groups.

Chapter 7- Literal fractions (5 sessions)

The table below details the objectives addressed by each exercise of the pre-test, the grade level at which these objectives are taught, and the resources that can be used to remediate gaps in these objectives.

Exercise(s)	Objective(s)	Grade & Chapter	Remedial
6	Calculate the fraction $\frac{a}{b}$ of a number n using the result of two successive operations “divide by b ”, “multiply by a ”. Construct a fraction equal to a given fraction.	Grade 5 Chapter 11	ME-G5-Ch11-SLO2-Fractions-equivalence, simplifying, comparison Slides 5 to 18 ME-G5-Ch11-SLO3&4-Fractions-equivalence, simplifying, comparison Slides 3 to 17
7	Add two fractions. Add two fractions in case where one of them is an integer. Apply properties of addition of fractions. Subtract two fractions. Subtract a number from a fraction and vice versa. Find the difference of two fractions.	Grade 5 Chapters 13 and 15	ME-G5-Ch13-SLO1- Addition of fractions Slides 28 to 71 ME-G5-Ch13-SLO2- Addition of fractions Slides 3 to 24 ME-G5-Ch15-SLO1-Subtraction of fractions Slides 9 to 31 ME-G5-Ch15-SLO2-Subtraction of fractions Slides 3 to 12
8, 9	Find the irreducible fraction equal to a given fraction.	Grade 7 Chapter 8	Literal fractions- G8 Slide 7
10	Multiply two fractions.	Grade 6 Chapter 19	ME-G6-Ch19-SLO2.1-Multiplying and Dividing Fractions Slides 3 to 19 ME-G6-Ch19-SLO2.2-Multiplying and Dividing Fractions Slides 3 to 15
11, 12	Perform the division of two fractions.	Grade 6 Chapter 19	ME-G6-Ch19-SLO3-Multiplying and Dividing Fractions Slides 3 to 15

For every remedial activity, teachers can select from the allocated slides mentioned in the table and not necessarily all slides.

Literal fractions – G8

Objectives	Resource	Slide(s)	Activity	Method
Simplify literal fractions. Reduce literal fractions to the same denominator. Carry out calculations with fractions whose terms are	Literal fractions- G8	5 to 7	Prerequisites	After covering the prerequisites listed in the table above, the teacher can remind the students of the related concepts to set the foundation for the class.
		8	Problem of the chapter	The teacher has the students read the problem, discusses it with them, and gives them time to attempt to solve it (Problem-based learning). Students are not necessarily expected to solve it correctly at this level.

<p>represented by numbers or letters. Write the reciprocal of a fraction in the form of a fraction. Replace the statement $\frac{a}{b} \div \frac{c}{d}$ by $\frac{a}{b} \div \frac{c}{d}$. Perform the necessary operations to reduce a complex fraction into a simple one.</p>	9	Activity	The teacher asks the students to sit in groups and work on the activity. After completing the activity, the students discuss their solutions with their classmates and the teacher, who then synthesises the result.
	10 to 12	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.
	13	Application	The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the application individually, then compare their answers with a classmate, and finally share their answers with the entire class.
	14	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.
	15	Application	The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the application individually, then compare their answers with a classmate, and finally share their answers with the entire class.
	16	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.
	17	Application	The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the application individually, then compare their answers with a classmate, and finally share their answers with the entire class.
	18	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.
	19	Application	The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the application individually, then compare their answers with a classmate, and finally share their answers with the entire class.
	20	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.
	21	Application	The teacher employs the Think-Pair-Share strategy in the classroom:

				students first solve the application individually, then compare their answers with a classmate, and finally share their answers with the entire class.
		22	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.
		23	Applications	The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the applications individually, then compare their answers with a classmate, and finally share their answers with the entire class.
		24	Problem of the chapter – solution	Students work on the problem individually or in groups, with guidance from the teacher.
		26	Focus	The teacher divides the students into three groups, assigning each group two properties to create a summary that includes a figure and a discussion. These summaries are then displayed on cardboards on the wall.
		25	Assignment	The teacher selects applications from the national textbook and asks students to solve them individually, in pairs, or in groups.

Chapter 12- The midpoint theorem (5 sessions)

The table below details the objectives addressed by each exercise of the pre-test, the grade level at which these objectives are taught, and the resources that can be used to remediate gaps in these objectives.

Exercise(s)	Objective(s)	Grade & Chapter	Remedial
4	Distinguish two intersecting straight lines, two parallel straight lines. Identify parallel straight lines in a figure.	Grade 4 Chapter 9	ME-G4-Ch09-SLO2-Parallel Lines Slides 3 to 8 ME-G4-Ch09-SLO3-Parallel Lines Slides 3 to 12
5	Classifying quadrilaterals according to the congruence of sides, their parallelism and their orthogonality.	Grade 4 Chapter 16	ME-G5-Ch14-SLO1-Characteristics of quadrilaterals Slides 35 to 40

For every remedial activity, teachers can select from the allocated slides mentioned in the table and not necessarily all slides.

The midpoint theorem – G8

Objectives	Resource	Slide(s)	Activity	Method
<p>State the Midpoint Theorem (From midpoint and parallel to midpoint).</p> <p>Apply the Midpoint Theorem (From midpoint to parallelism).</p> <p>State the median relative to the hypotenuse in a right triangle.</p> <p>Apply the median relative to the hypotenuse in a right triangle.</p> <p>State the fact that in a triangle, if the median from a vertex to the opposite side is equal to half this side, then the triangle is right angled at that vertex.</p> <p>Use the fact that in a triangle, if the median from a vertex to the opposite side is equal to half this side, then the triangle is right angled at that vertex.</p>	The midpoint theorem-Part 1 - G8	5	Problem of the chapter	The teacher has the students read the problem, discusses it with them, and gives them time to attempt to solve it (Problem-based learning). Students are not necessarily expected to solve it correctly at this level.
		6	Activity	The teacher asks the students to sit in groups and work on the activity. After completing the activity, the students discuss their solutions with their classmates and the teacher, who then synthesises the result.
		7	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.
		8	Application	The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the application individually, then compare their answers with a classmate, and finally share their answers with the entire class.
		9	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.
		10	Application	The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the application individually, then compare their answers with a classmate, and finally share their answers with the entire class.
		11	Activity	The teacher asks the students to sit in groups and work on the activity. After completing the activity, the students discuss their solutions with their classmates and the teacher, who then synthesises the result.
		12	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.
		13	Application	The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the application individually, then compare their answers

				with a classmate, and finally share their answers with the entire class.
		14	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.
		15	Application	The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the application individually, then compare their answers with a classmate, and finally share their answers with the entire class.
		16	Problem of the chapter – solution	Students work on the problem individually or in groups, with guidance from the teacher.
		18	Focus	The teacher divides the students into three groups, assigning each group two properties to create a summary that includes a figure and a discussion. These summaries are then displayed on cardboards on the wall.
		17	Assignment	The teacher selects applications from the national textbook and asks students to solve them individually, in pairs, or in groups.
Define and apply the properties of a trapezoid. Define and apply the properties of an isosceles trapezoid. Define and apply the properties of a right trapezoid. Find unknown lengths in a trapezoid.	The midpoint theorem- Part 2 - G8	4	Problem of the chapter	The teacher has the students read the problem, discusses it with them, and gives them time to attempt to solve it. Students are not necessarily expected to solve it correctly at this level.
		5, 6	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.
		7	Application	The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the application individually, then compare their answers with a classmate, and finally share their answers with the entire class.
		8	Activity	The teacher asks the students to sit in groups and work on the activity. After completing the activity, the students discuss their solutions with their classmates and the teacher, who then synthesises the result.
		9	Text of the lesson	The teacher presents the text of the lesson and discusses it with the students.

		10	Application	The teacher employs the Think-Pair-Share strategy in the classroom: students first solve the application individually, then compare their answers with a classmate, and finally share their answers with the entire class.
		11	Problem of the chapter – solution	Students work on the problem individually or in groups, with guidance from the teacher.
		13	Focus	The teacher divides the students into three groups, assigning each group two properties to create a summary that includes a figure and a discussion. These summaries are then displayed on cardboards on the wall.
		12	Assignment	The teacher selects applications from the national textbook and asks students to solve them individually, in pairs, or in groups.