



Mathematics Grade 9 Adv

Reveal

Distance Learning

Supporting continuity of learning during Distance instruction.

MINISTRY OF EDUCATION



Purpose and Core Principles

Purpose:

- Provide guidance for teachers to support Distance Learning over the next four weeks.
- Ensure learning continuity aligned with Comprehensive Curriculum Guides (CCGs).
- Supporting growth-appropriate teaching for students in mathematics.
- Provide a clear structure for online lesson planning and weekly learning.

Core Principles:

- Keep lessons short, interactive, and engaging.
- Focus on core learning outcomes.
- Balance live education with hands-on activities at home.
- Encourage sharing, navigation, and discussion.
- Maintain a routine that supports student well-being and continuity of learning.

Structure of an Online Lesson

Weekly Instruction Structure

Subject	Cycle	Grade	Stream	Number of Periods
Mathematics	3	9	Advanced	6

Planning Considerations

When planning the week, teachers should ensure that learning includes opportunities for:

- **Conceptual understanding through visual models and representations.**
- **Problem-solving tasks.**
- **Exploration of different strategies.**
- **Short collaborative activities or think–pair–share discussions** to compare solution strategies.
- **Students sharing their mathematical reasoning or solutions with the class.**
- **Class discussion and reflection** on patterns, relationships, and efficient strategies.
- **Integration of values such as perseverance, cooperation, and responsibility during mathematical discussions.**

These elements help maintain engagement and support deeper mathematical understanding during the learning process.

Teaching and Learning Delivery Model

Learning should include a balance of live interaction, independent practice, and hands-on activities.

Live Instruction

- Short live lessons with the teacher.
- Explanation of new concepts.
- Questions and discussion.
- Check for understanding.

Independent Learning

- Reading and practice activities.
- Digital tasks.
- Watching recorded explanations.
- Reflection or short recorded responses.

Balanced Distance Learning

Note: The delivery approach recommended by the Curriculum Team for each lesson, whether **live**, **independent**, or **offline/hands-on**, is intended solely to guide implementation and does not imply that the lesson is excluded from assessment.

Offline and Hands-On Learning

- Creative tasks and projects.
- Drawing, writing, or building models.
- Physical activity or real-life exploration.

Preparing for online learning

The first week should focus on helping students become comfortable with online learning before introducing new academic content.

Focus

- Helping students become familiar with the online platform.
- Establishing simple routines and expectations.
- Practicing how students participate during online lessons.
- Building confidence speaking and interacting online.
- Creating a positive and supportive classroom environment.

Suggested Activities

- Attendance procedures.
- Virtual Think-Pair-Share.
- Multi-Modal Modeling.
- Error Analysis & Critique.
- Virtual Gallery Walks.

Teacher Guidance

Keep activities short, interactive, and enjoyable.

The goal of this week is to build routines and engagement, so students are ready for structured learning in the following weeks.

Monitoring Learning and Providing Feedback

In Distance Learning for **cycle three** students, teachers monitor learning through **interaction, observation, and simple evidence of participation**, rather than relying only on written assignments.

Approach	What Teachers Look For	Example	Providing Feedback
Observation during live sessions	Students explain methods, justify procedures, and interpret results using accurate mathematical vocabulary and representations.	Student explains how the slope of a graph represents rate of change in a given context.	"Your explanation is mathematically sound. Can you extend your response by interpreting what the rate means in the context?"
Observation during live sessions	Students demonstrate understanding through algebraic work, graphs, tables, geometric arguments, or technology-supported representations.	Student solves a system of equations and explains why the point of intersection represents the solution.	"Good work. You found the solution correctly. Now justify why this ordered pair satisfies both equations."
Observation during live sessions	Students defend conclusions, analyze errors, or compare methods through discussion and short written reasoning.	Student identifies an error in simplifying an expression and explains the correct process.	"Excellent analysis. You identified the mistake clearly. Can you compare this incorrect method with the correct one?"
Observation during live sessions	Families may support only with logistics when needed, while students independently present evidence of thinking and completion.	Student uploads a short response explaining the steps used to solve a modelling or statistics task.	"The response shows clear reasoning. Strengthen it further by including a final interpretation or conclusion."

Grade 9 (Advanced)

Term 3 Overview of Learning

Unit Number	Unit Name	Week	Number of Periods per Lesson	Lesson Number	Lesson Name	Learning Outcomes	Delivery Model
M12	Logical Arguments and Line Relationships	1	6	1	Conjectures and Counterexamples	Make conjectures based on inductive reasoning	Live Instruction
						Find counterexamples	
		2	6	2	Statements, Conditionals, and Biconditionals	Determine truth values of negations, conjunctions, and disjunctions	Live Instruction
						Represent conjunctions and disjunctions using Venn diagrams	
						Analyze statements in if-then form	
						Write the converse, inverse, and contrapositive of if-then statements	
						Write and analyze biconditional statements and determine truth values of biconditional statements	

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Grade 9 (Advanced)

Term 3 Overview of Learning

Unit Number	Unit Name	Week	Number of Periods per Lesson	Lesson Number	Lesson Name	Learning Outcomes	Delivery Model
M12	Logical Arguments and Line Relationships	3	6	6	Proving Angle Relationships	Write proofs involving supplementary and complementary angles	Live Instruction
						Write proofs involving congruent and right angles	
			-	7	Parallel Lines and Transversals	Identify the relationships between two lines or two planes	Independent Learning
						Name angle pairs formed by two parallel lines cut by two transversals	
		4	6	8	Slope and Equation of Lines	Use the slope to identify parallel and perpendicular lines	Live Instruction
						Write the equation of a straight line based on graphing information	

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Grade 9 (Advanced)

Term 3 Overview of Learning

Unit Number	Unit Name	Week	Number of Periods per Lesson	Lesson Number	Lesson Name	Learning Outcomes	Delivery Model
M12	Logical Arguments and Line Relationships	5	3	9	Proving Lines Parallel	Use algebra to find angle measurements	Live Instruction
						Prove that two lines are parallel	
			3	10	Perpendiculars and Distance	Find the distance between a point and a line	
						Find the distance between two parallel lines	
M13	Transformations and Symmetry	6	3	1	Reflections	Draw reflections in the coordinate plane	Live Instruction
			3	2	Translations	Draw translations in the coordinate plane	Live Instruction
		7	3	3	Rotations	Draw rotations in the coordinate plane	Live Instruction
			3	6	Symmetry	Identify line and rotational symmetries in two-dimensional figures	Live Instruction

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Grade 9 (Advanced)

Term 3 Overview of Learning

Unit Number	Unit Name	Week	Number of Periods per Lesson	Lesson Number	Lesson Name	Learning Outcomes	Delivery Model
M14	Triangles and Congruence	8	4	1	Angles of Triangles	Apply the Triangle-Sum Theorem	Live Instruction
						Apply the Exterior Angle Theorem	
						Prove the corollaries to the Triangle Angle-Sum Theorem and apply the corollaries to solve problems	
		9	2	2	Congruent Triangles	Name and use corresponding parts of congruent polygons	Live Instruction
			2			Prove triangles congruent using the definition of congruence	
			4	3	Proving Triangles Congruent – SSS, SAS	Use the SSS Postulate to test for triangle congruence	Live Instruction
						Use the SAS Postulate to test for triangle congruence	
			4	4	Proving Triangles Congruent – ASA, AAS	Use the ASA Postulate to test for triangle congruence	Live Instruction
						Use the AAS Postulate to test for triangle congruence	
			2	5	Proving Right Triangles Congruent	Use the right triangle congruence theorems to prove relationships in geometric figures	Live Instruction

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Grade 9 (Advanced)

Term 3 Overview of Learning

Unit Number	Unit Name	Week	Number of Periods per Lesson	Lesson Number	Lesson Name	Learning Outcomes	Delivery Model
M14	Triangles and Congruence	11	2	5	Proving Right Triangles Congruent	Use the right triangle congruence theorems to prove relationships in geometric figures	Live Instruction
			4	6	Isosceles and Equilateral Triangles	Use properties of isosceles triangles	Live Instruction
						Use properties of equilateral triangles	

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Distance Lesson Plan Exemplar

Grade	5	Curriculum	Reveal	Term	3	Unit name	Divide Fractions	Lesson name	Relate Fractions to Division
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1. Learning Outcomes	
- I can represent the quotient of a division equation as a fraction or mixed number. - I can explain why the quotient of a division equation can always be expressed as a fraction. - I can explain why division of whole numbers can be written as a multiplication expression.	
2. Introduction	
1. Number Routine: Is the value of the expression greater than, or less than $\frac{1}{2}$? How do you know? A. $\frac{4}{8} + \frac{3}{10}$ B. $\frac{1}{4} + \frac{1}{5}$ 2. The teacher presents a simple sharing situation and asks students how division can describe the situation. The teacher then guides students to notice that division can also be written as a fraction and explains that today they will explore how fractions and division are connected.	Vocabulary - Denominator - Dividend - Divisor - Numerator - Quotient
3. Explore	
- The teacher presents the scenario: “A farmer pours 5 gallons of water equally into 4 buckets.” The teacher asks students how they can determine how much water will be in each bucket and encourages them to represent the situation with a drawing, model, or equation. - The teacher asks guiding questions such as: “What operation helps us share equally?” and “How can we show this division as a fraction?” while recording different student strategies on the board. Students work in pairs to model the situation using drawings or fraction strips, showing how 5 gallons can be shared equally among 4 buckets. Students explain their thinking by connecting the division expression $5 \div 4$ to the fraction $\frac{5}{4}$ and discuss how the quotient can also be written as the mixed number $1\frac{1}{4}$.	

4. Practice & Independent Work
- The teacher assigns independent practice through Reveal Math “On My Own” problems, a short worksheet from Reveal Math, or ALEKS Platform, asking students to solve division situations and write the quotient as a fraction or mixed number. - The teacher monitors students’ progress in real time through the digital platform, reviews student responses, provides written or verbal feedback, and highlights common errors during the session. Students work independently online to solve the assigned problems, writing division expressions as fractions or mixed numbers and showing their steps as per to the questions. Students submit their work digitally and share or explain one solution in the chat or discussion board, comparing strategies with classmates and reflecting on how division can be represented as a fraction.
Common Misconceptions
1. Students may initially be confused as the amount they are dividing is less than the amount they are dividing by. Remind them that they can still write a division equation or fraction that is equal to a number less than 1.
5. Suggested resources
I know it Khan Academy IXL
6. Conclusion & Exit Ticket
- The teacher summarizes the key idea that division can be written as a fraction and reviews one or two examples with the class. The teacher then assigns a short digital Exit Ticket through the Reveal Math Platform. Students complete the Exit Ticket independently online, solving problems that connect division expressions to fractions and simple word problems. - Students submit their responses digitally and complete a short self-reflection (confidence check) about their understanding of how division can be represented as a fraction.