

Numeric Patterns

Overall Expectation

Students will:

- Determine, through investigation using a table of values, relationships in growing and shrinking patterns, and investigate repeating patterns involving translations (5m61)

Specific Expectations

Students will:

- Create, identify, and extend numeric and geometric patterns, using a variety of tools (5m63)
- Build a model to represent a number pattern presented in a table of values that shows the term number and the term (5m64)
- Make a table of values for a pattern that is generated by adding or subtracting a number (i.e., a constant) to get the next term, or by multiplying or dividing by a constant to get the next term, given either the sequence or the pattern rule in words (5m65)
- Make predictions related to growing and shrinking geometric and numeric patterns (5m66)

Lesson	Learning Focus	Specific Expectations
Identify Patterns	<ul style="list-style-type: none"> Identify and extend numeric patterns with a variety of tools (concrete materials, paper pencil, calculators) (repeating, attributes, shrinking, growing) 	5m63
Create Patterns	<ul style="list-style-type: none"> Create and extend numeric patterns with a variety of tools (concrete materials paper pencil, calculators) (repeating, attributes, shrinking, growing) 	5m66
Make Predictions Related to Patterns	<ul style="list-style-type: none"> Make predictions about growing and shrinking numeric patterns 	5m66
Patterns from Tables of Values	<ul style="list-style-type: none"> Build a model to represent a pattern presented in a table of values that shows the term number and the term 	5m64
Tables of Values to Represent Patterns	<ul style="list-style-type: none"> Make a table of values for a pattern that is generated by adding or subtracting a number to get the next term or multiplying or dividing by a constant where the table is generated from a pattern sequence or pattern rule in words 	5m65
Consolidation and Summative Tasks		

Identify Patterns

Specific Expectations: 5m63

	Learning Focus	Blended Learning	Other Resources
		Teacher Guide Unit 4 Activity 1: Patterns and Relationships OERB ID: ELO1476840	Guide to Effective Instruction: Patterning and Algebra Grades 4 – 6 • pp 65 – 76: Grade 5 Learning Activity: Growing Weave Designs mathies • Colour Tiles • Pattern Blocks • Set Tool • Pattern Maker • Representation Match Game (Linear Growing Pattern)
Minds On	<ul style="list-style-type: none"> Review repeating, shrinking and growing patterns 		
Action	<ul style="list-style-type: none"> Identify and extend numeric patterns with a variety of tools (concrete materials, paper pencil, calculators) (repeating, attributes, shrinking, growing) 	Unit 4 Activity 1: Action OERB ID: ELO1476700 • Growing and Shrinking Patterns Part 3 – Predicting Patterns OERB ID: ELO1411180 <i>Note: supplementation required for identifying and extending numeric patterns</i>	
Consolidation		Unit 4 Activity 1: Action • Discussion <ul style="list-style-type: none"> o complete the pattern 	

Create Patterns

Specific Expectations: 5m66

	Learning Focus	Blended Learning	Other Resources
		Teacher Guide Unit 4 Activity 1: Patterns and Relationships OERB ID: ELO1476840	Guide to Effective Instruction: Patterning and Algebra Grades 4 – 6 <ul style="list-style-type: none"> pp 65 – 76: Grade 5 Learning Activity: Growing Weave Designs mathies <ul style="list-style-type: none"> Colour Tiles Pattern Blocks Set Tool Pattern Maker
Minds On	<ul style="list-style-type: none"> Review identifying and extending patterns 		
Action	<ul style="list-style-type: none"> Create and extend numeric patterns with a variety of tools (concrete materials paper pencil, calculators) (repeating, attributes, shrinking, growing) 	Unit 4 Activity 1: Action OERB ID: ELO1476700 <ul style="list-style-type: none"> Assignment 1: Modelling Patterns <ul style="list-style-type: none"> adapt to include only numeric patterns <p><i>Note: supplementation required for creating and extending numeric patterns</i></p>	
Consolidation			

Make Predictions Related to Patterns

Specific Expectations: 5m66

	Learning Focus	Blended Learning	Other Resources
		Teacher Guide Unit 4 Activity 1: Patterns and Relationships OERB ID: ELO1476840	Guide to Effective Instruction: Patterning and Algebra Grades 4 – 6 <ul style="list-style-type: none"> pp 65 – 76: Grade 5 Learning Activity: Growing Weave Designs mathies <ul style="list-style-type: none"> Exploring Different Representations Robot Rule Game Colour Tiles Pattern Blocks Set Tool Pattern Maker
Minds On	<ul style="list-style-type: none"> Review growing and shrinking patterns 		
Action	<ul style="list-style-type: none"> Make predictions about growing and shrinking numeric patterns 	Unit 4 Activity 1: Action <ul style="list-style-type: none"> Growing and Shrinking Patterns Part 2 – What's My Value? OERB ID: ELO1411140 <p><i>Note: supplementation required for making predictions</i></p>	
Consolidation			

Patterns from Tables of Values

Specific Expectations: 5m64

	Learning Focus	Blended Learning	Other Resources
		Teacher Guide Unit 4 Activity 1: Patterns and Relationships OERB ID: ELO1476840	Guide to Effective Instruction: Patterning and Algebra Grades 4 – 6
Minds On	<ul style="list-style-type: none"> Review patterns in tables 		<ul style="list-style-type: none"> pp 65 – 76: Grade 5 Learning Activity: Growing Weave Designs
Action	<ul style="list-style-type: none"> Build a model to represent a pattern presented in a table of values that shows the term number and the term 	Unit 4 Activity 1: Action <ul style="list-style-type: none"> Patterns <p><i>Note: supplementation required for building a model to represent a pattern from a table of values</i></p>	mathies <ul style="list-style-type: none"> Exploring Different Representations Representation Match Game (Linear Growing Pattern) Colour Tiles Pattern Blocks Set Tool Pattern Maker
Consolidation			

Tables of Values to Represent Patterns

Specific Expectations: 5m64

	Learning Focus	Blended Learning	Other Resources
		Teacher Guide Unit 4 Activity 1: Patterns and Relationships OERB ID: ELO1476840	Guide to Effective Instruction: Patterning and Algebra Grades 4 – 6 <ul style="list-style-type: none"> pp 65 – 76: Grade 5 Learning Activity: Growing Weave Designs mathies <ul style="list-style-type: none"> Exploring Different Representations Representation Match Game (Linear Growing Pattern) Colour Tiles Pattern Blocks Set Tool Pattern Maker
Minds On	<ul style="list-style-type: none"> Review patterns in tables 		
Action	<ul style="list-style-type: none"> Make a table of values for a pattern that is generated by adding or subtracting a number to get the next term or multiplying or dividing by a constant where the table is generated from a pattern sequence or pattern rule in words 	Unit 4 Activity 1: Action <ul style="list-style-type: none"> Discussion <ul style="list-style-type: none"> L pattern OERB ID: ELO1476700 <i>Note: supplementation required for making a table of values to represent patterns</i>	
Consolidation		Unit 4 Activity 1 <ul style="list-style-type: none"> Assignment 2: Square Numbers OERB ID: ELO1476700	

Consolidation & Summative Tasks

Specific Expectations: 5m63, 5m64, 5m65, 5m66

Blended Learning	Other Resources

Identify Patterns

Resource	URL
Teacher Guide: Unit 4 Activity 1: Patterns and Relationships	https://download.elearningontario.ca/repository/14/1476840000/GRD5MTHEU06A07/content.html
Growing and Shrinking Patterns Part 3 – Predicting Patterns	https://download.elearningontario.ca/repository/14/1411180000/McCrory_Gr5Pt3PredictingPatterns.html
Unit 4 Activity 1: Action	https://download.elearningontario.ca/repository/14/1476700000/GRD5MTHEU04/GRD5MTHEU04/GRD5MTHEU04A01/content_2.html
Guide to Effective Instruction: Patterning and Algebra Grades 4 – 6	http://oame.on.ca/eduproject/ontariomathedresources/files/Patterning%20and%20Algebra%204-6.pdf
mathies : Colour Tiles	http://mathies.ca/learningTools.php
mathies : Pattern Blocks	http://mathies.ca/learningTools.php#Pp0
mathies: Set tool	http://mathies.ca/learningTools.php#Ss1
mathies : Pattern Maker	http://mathies.ca/learningTools.php#Pp0
mathies : Representation Match Game (Linear Growing Pattern)	http://mathies.ca/games.php#Rr0
mathies : Robot Rule Game	http://mathies.ca/games.php

Create Patterns

Resource	URL
Teacher Guide: Unit 4 Activity 1: Patterns and Relationships	https://download.elearningontario.ca/repository/14/1476840000/GRD5MTHEU06A07/content.html
Assignment 1: Modelling Patterns	https://download.elearningontario.ca/repository/14/1476700000/GRD5MTHEU04/GRD5MTHEU04/GRD5MTHEU04A01/assignment.html
Guide to Effective Instruction: Patterning and Algebra Grades 4 – 6	http://oame.on.ca/eduproject/ontariomathresources/files/Patterning%20and%20Algebra%204-6.pdf
mathies : Colour Tiles	http://mathies.ca/learningTools.php
mathies : Pattern Blocks	http://mathies.ca/learningTools.php#Pp0
mathies: Set tool	http://mathies.ca/learningTools.php#Ss1
mathies : Pattern Maker	http://mathies.ca/learningTools.php#Pp0

Make Predictions Related to Patterns

Resource	URL
Teacher Guide: Unit 4 Activity 1: Patterns and Relationships	https://download.elearningontario.ca/repository/14/1476840000/GRD5MTHEU06A07/content.html
Growing and Shrinking Patterns Part 2 – What's My Value?	https://download.elearningontario.ca/repository/14/1476700000/GRD5MTHEU04/GRD5MTHEU04/GRD5MTHEU04A01/mme/Gr5_Math_PA_WhatsMyValue/Object%20Files/McCory_Gr5Pt-2WhatsMyValue.html
Guide to Effective Instruction: Patterning and Algebra Grades 4 – 6	http://oame.on.ca/eduproject/ontariomathedresources/files/Patterning%20and%20Algebra%204-6.pdf
mathies: Exploring Different Representations	http://mathies.ca/learningTools.php#Ee0
mathies: Robot Rule Game	http://mathies.ca/games.php
mathies : Colour Tiles	http://mathies.ca/learningTools.php
mathies : Pattern Blocks	http://mathies.ca/learningTools.php#Pp0
mathies: Set tool	http://mathies.ca/learningTools.php#Ss1
mathies : Pattern Maker	http://mathies.ca/learningTools.php#Pp0

Patterns from Tables of Values

Resource	URL
Teacher Guide: Unit 4 Activity 1: Patterns and Relationships	https://download.elearningontario.ca/repository/14/1476840000/GRD5MTHEU06A07/content.html
Patterns	http://www.learnalberta.ca/content/me5l/html/math5.html?goLesson=11
Guide to Effective Instruction: Patterning and Algebra Grades 4 – 6	http://oame.on.ca/eduproject/ontariomathedresources/files/Patterning%20and%20Algebra%204-6.pdf
mathies: Exploring Different Representations	http://mathies.ca/learningTools.php#Ee0
mathies : Representation Match Game (Linear Growing Pattern)	http://mathies.ca/games.php#Rr0
mathies : Colour Tiles	http://mathies.ca/learningTools.php
mathies : Pattern Blocks	http://mathies.ca/learningTools.php#Pp0
mathies: Set tool	http://mathies.ca/learningTools.php#Ss1
mathies : Pattern Maker	http://mathies.ca/learningTools.php#Pp0

Tables of Values to Represent Patterns

Resource	URL
Teacher Guide: Unit 4 Activity 1: Patterns and Relationships	https://download.elearningontario.ca/repository/14/1476840000/GRD5MTHEU06A07/content.html
Unit 4 Activity 1: Action	https://download.elearningontario.ca/repository/14/1476700000/GRD5MTHEU04/GRD5MTHEU04/GRD5MTHEU04A01/content_2.html
Assignment 2: Square Numbers	https://download.elearningontario.ca/repository/14/1476700000/GRD5MTHEU04/GRD5MTHEU04/GRD5MTHEU04A01/assignment.html
Guide to Effective Instruction: Patterning and Algebra Grades 4 – 6	http://oame.on.ca/eduproject/ontariomathedresources/files/Patterning%20and%20Algebra%204-6.pdf
mathies: Exploring Different Representations	http://mathies.ca/learningTools.php#Ee0
mathies : Representation Match Game (Linear Growing Pattern)	http://mathies.ca/games.php#Rr0
mathies : Colour Tiles	http://mathies.ca/learningTools.php
mathies : Pattern Blocks	http://mathies.ca/learningTools.php#Pp0
mathies: Set tool	http://mathies.ca/learningTools.php#Ss1
mathies : Pattern Maker	http://mathies.ca/learningTools.php#Pp0