

Curriculum Planning & Assessment Resource

Mathematics Grade 3



The Consortium

Alberta Professional Learning Consortium



Curriculum Planning & Assessment Resource

Mathematics

Grade 3 Measurement 2

About This Document

This Curriculum Planning & Assessment Resource is intended to be a collection of sample activities, assessments, and resources that teachers may wish to use as they develop their unit plans. This document is not intended to be a sequential list of activities. Rather, the intent is that teachers choose from this resource what is appropriate for their context, and sequence it in their planning.

The sample activities, assessments and resources included in this document have undergone an initial review to determine appropriateness and alignment to the curriculum. However, it is expected that teachers use their professional judgment in selecting activities, assessments and resources that are appropriate for their context.

While every attempt has been made to provide credit and receive permissions, some errors or omissions may have occurred. Please contact info@aplc.ab.ca to report any error or omissions.

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			Interactive Numbered Outcomes Document with Skills

Acknowledgements

Thank you to all the teachers, numeracy specialists, and technical expertise from Alberta school divisions and APLC who collaborated to develop, review, and revise these planning and assessment documents to support curriculum implementation.

Grade 3 - Measurement 2

Organizing Idea

Measurement: Attributes such as length, area, volume, and angle are quantified by measurement.

Guiding Question

How can angles broaden an understanding of space?

Learning Outcome

3M2.1 Students interpret angles.

Summative Assessment(s) - Transfer *(In Progress)*

Summative assessments can include the following.

- *Understanding/making sense of a novel context from the real world using one or more concepts (eg. “How are place value and money related?”).*
- *Understanding/making sense of a novel context using one or more understandings (eg. Students use money to model the conversion of base 10 values and relate them to base 10 block’).*
- *Being able to describe why (linking concepts) something is true, a result, or what might be an extension using learned concepts and understandings.*
- *Apply learning (create products; undertake projects; taking action such as creating a campaign) in a novel context or taking action using the understanding(s).*
- *Construct arguments by taking a position and verifying/proving it with known understandings.*

Summative Assessment(s)

[\[understanding surface vs deep vs transfer\]](#)

- [3M2 Sample Summative](#)
- [3M2 Summative ASSESSMENT with Procedures](#)
- [3M2 Summative with Procedures \(French\)](#)



Click to jump!

[KUSP 3M2.1](#)

[KUSP 3M2.2](#)

[Literature Connections](#)

KUSP 3M2.1

Prerequisite Knowledge

Students should have knowledge of:

- labeling the sides (edges) corners (vertices) of shapes
- the differences and similarities between various 2D and 3D shapes/objects

Student Language | Essential vocabulary & concepts

- **Measure:** to determine the size, amount, degree or something, using standard or non-standard units
- **Angle:** formed when two straight lines meet at a common endpoint (vertex)
- **Referent:** an object that can be used to help estimate a measurement
- **Line Segment:** the arm of an angle can be a line segment or ray.

I Know Statements | Metacognition

- I know an angle is where two arms meet with a common vertex.
- I know an angle can represent motion.

Pre-Assessments

Nelson Pre-Assessments 2 & 3: Finding Each Students Pathway

Grade 2:

- 2D Shape Pictures - p.38
- Making 3D Objects with Clay - p.39
- Making 3D Objects - p.40

Grade 3:

- Naming and Sorting 3D Objects - p. 26
- Naming and Sorting 2D Shapes - p. 28
- Sorting 2D Shapes - p. 30

Leaps and Bounds Pages will be referenced in the PreAssessments answer Key for follow up for emerging learners.

I Can Statements | Skills

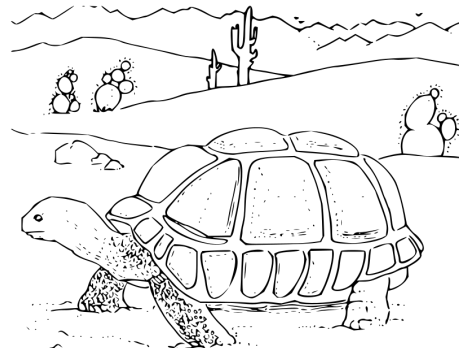
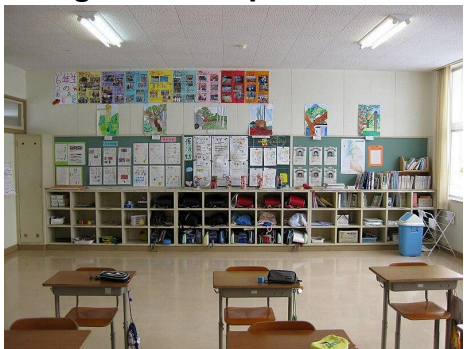
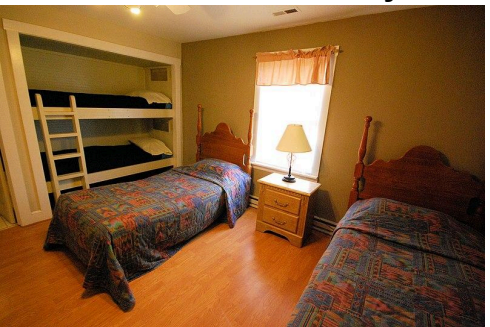
- I can recognize angles in my surroundings.
- I can recognize where an angle can show motion.

Learning Recovery

- *Please consider sharing any great activities and ideas you have!*

Enhancement

- *Please consider sharing any great activities and ideas you have!*

Learning Outcome		3M2.1 Students interpret angles.			
Knowledge	Understanding	Skills & Procedures	Achievement Indicators	Illustrative Examples	Assessments (Explainer)
<p>Angle defines the space in</p> <ul style="list-style-type: none"> • corners • bends • turns or rotations • intersections • slopes <p>The arms of an angle can be line segments or rays.</p> <p>A vertex is the common end point of two arms.</p>	<p>An angle is the union of two arms with a common vertex.</p> <p>An angle can be interpreted as the motion of a length rotated about a vertex.</p>	Recognize various angles in surroundings.	Look at familiar places to recognize angles.	<p>Teacher Note: Students have not yet learned the names of specific angles so this is not an expectation in this section. They are to be able to recognize angles from non-angles. Their referent is a 90 degree angle so answers or larger or smaller than 90 are acceptable.</p> <hr/>  <p>Source: Coloring Book Desert Tortoise by FunDraw_dot_com</p> <p>Where do you see angles in this picture? Circle them.</p>  <p>Source: Hitane Elementary School classroom</p> <p>Look around your classroom. Where do you see angles?</p>  <p>Source: WE Potomac River Retreat kids bedroom</p> <p>What angles do you see in your bedroom? Your kitchen?</p>	<ul style="list-style-type: none"> • Have students walk around the classroom / school / playground area for 3 unique views and have them draw or identify different types of angles - focused on size and location. Combine this with the skill below of "Recognize situations in which an angle can be perceived as motion." • Ask students if they can make an angle with their body. • Ask students if there is an angle they seem to notice the most in their environment (Likely 90 degrees - corners)

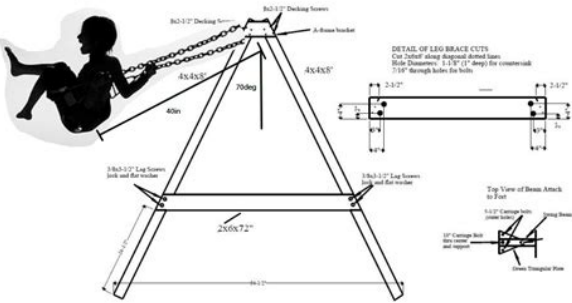
Recognize situations in which an angle can be perceived as motion.

Recognize situations in which an angle is in motion.

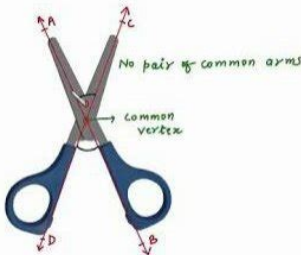
Where on the playground do you see angles in motion?



Source: [Playground in Punta Azul](#)



Chegg



Source: [Vertically Opposite Angles](#)



Free Images

- What time is it when the hands of the clock make a 90° angle?
- Look at pattern blocks. Using your referent angle, describe the angles in each of the shapes.

What angles can you see in the clock face?

Resources

Mathology

[APLC Math Little Books for Alberta Curriculum](#)
[Mathology Free Resources on New Learn Alberta](#)

Math UP

Grade 3 Lines and Angles
 o Lesson 1: Investigating Lines and Angles

Existing Texts

Math Makes Sense 6 - Unit 4 - pages 124-129 (naming angles is not part of Grade 3 measurement but the diagrams could be used with different instructions)

Math Focus 6 - Chapter 8 - pages 242 - 244 (naming angles is not part of Grade 3 measurement)

NCETM (teacher guides and resources)

None available

Core Knowledge

[Angles and Angle Measurement](#) Unit 7 (Lessons 1-7 only) [Teachers Guide](#)

Source: [Core Knowledge](#)

Resources Developed by School Divisions/Educational Institutions

[Edmonton Catholic Pacing Guides](#)
[Edmonton Catholic Curriculum Crates](#)
[LearnAlberta Curriculum](#)
 APLC [Curriculum Professional Learning Resources](#)
 Alberta Teachers Association Library [General Mathematics Resources](#)
 Mathematics and Numeracy - [Curriculum Implementation Toolkit, Grades 4-6](#)

Websites and Resources to Support *Planning*

Inclusion - An [inclusive](#) approach to maths teaching
Inclusion - [Good Practices](#) on Inclusive Curricula in Mathematics Sciences
Differentiation: Preview vocabulary and pre teach to students. Use various forms of media to present vocabulary including simplified explanations, visuals in the form of diagrams to label and connect concepts.

Gizmos

New Learn Alberta (Teacher Login Required)
[Perimeters and Areas of Similar Figures](#)
[Polygon Angle Sum](#)

For access to additional resources login to Gizmos account. Request an account alberta@explorellearning.com

Indigenous Lesson Plans and Resources

[Indigenous Culture Based Learning in Alberta Curriculum](#)

Problem Solving

[Tasks](#) - Graham Fletcher
[Tasks](#) - MS CASTILLO'S MATH



Click to jump!

[KUSP 3M2.1](#)

[KUSP 3M2.2](#)

[Literature Connections](#)

KUSP 3M2.2

Assumable Curriculum / Prerequisite Knowledge / Vocabulary

Students should have knowledge of:

- the meaning of angle
- the meaning of *greater than* and *less than*

Student Language | Essential vocabulary & concepts

- **Angle:** formed when two straight lines meet at a common endpoint (vertex)
- **Superimposing:** the process of placing one angle over another to compare angles.
- **Referent:** an object that can be used to help estimate a measurement

Pre-Assessments

Nelson Pre-Assessments 2 & 3: Finding Each Students Pathway

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Learning Recovery

- *Please consider sharing any great activities and ideas you have!*

I Know Statements | Metacognition

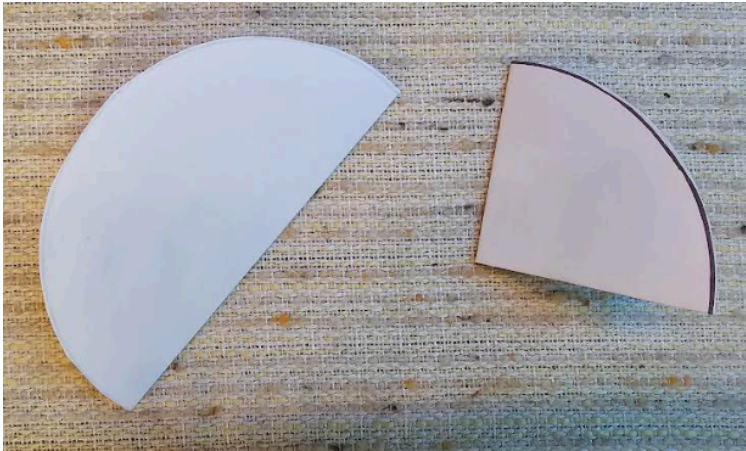
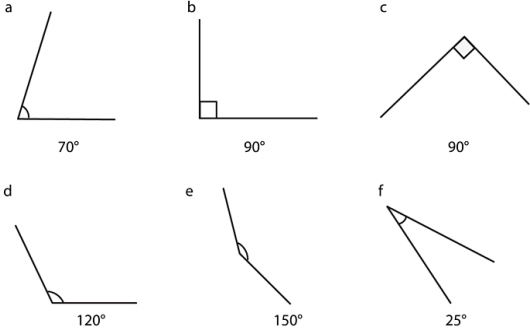
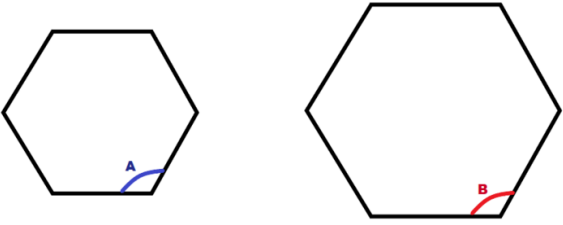
- I know superimposing is placing one angle over another to compare angles.
- I know a referent is a way I can represent a known angle.
- I know two angles can be compared directly and indirectly.

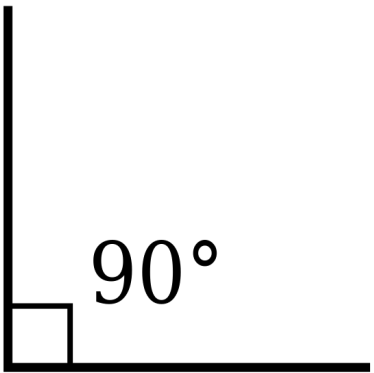
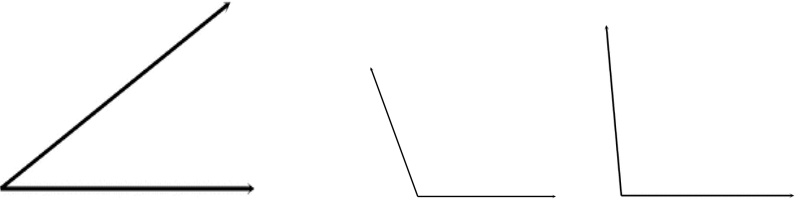

I Can Statements | Skills



- I can compare angles directly by superimposing.
- I can compare angles indirectly by superimposing a third angle.
- I can estimate which angle is greater.
- I can identify a referent for 90°.
- I can identify 90° angles in the environment using a referent.

Enhancement

- *Please consider sharing any great activities and ideas you have!*

Learning Outcome					
3M2.2 Students interpret angles.					
Knowledge	Understanding	Skills & Procedures	Achievement Indicators	Exemplars	Assessments (Explainer)
<p>Superimposing is the process of placing one angle over another to compare angles.</p> <p>A referent is a personal or familiar representation of a known angle.</p>	Two angles can be compared directly or indirectly.	Compare two angles directly by superimposing.	Compare two angles by superimposing.	<p>Provide students with a circle cut out of paper larger enough to easily fold in quarters. This will provide a 90° angle that they can walk around and use as a referent.</p>  <p>Source: APLC created</p> <p>Which angle is greatest? Least?</p>  <p>Bitesize BBC</p>  <p>Wikimedia Commons</p>	<p>It may be advantageous to help students identify 90° angles and a referent for them or a traced diagram to help them identify angles that are larger or smaller. The 90° angle serves as a benchmark to discuss <i>smaller than what?</i> <i>larger than what?</i></p> <p>3M2.2a - Comparing Directly - Surface</p>

		<p>Compare two angles indirectly by superimposing a third angle.</p> <p>Estimate which of two angles is greater.</p>	<p>Use a third angle as a referent to indirectly compare two angles.</p> <p>Estimate which angle is greater or less than.</p>	<p>Can you cut out the smaller hexagon and match it with an angle on the larger hexagon (by superimposing)?</p> <p>Look at this 90 degree angle.</p>  <p>Source: Right Angle</p> <p>Use this angle to identify if the following are less than 90 degrees or more than 90 degrees.</p> 	<p>3M2.2b - My Right Friend - Deep</p>
		<p>Identify referents for 90°.</p>	<p>Identify referents for 90° angle</p>	<p>Look around your classroom. Where do you see a referent for a 90° angle?</p>  <p>Wikimedia Commons</p> <p>Playground?</p>	<p>Have students identify what they could quickly use to draw a right angle, without having to measure to know it is 90°. (corner of a book, folded piece of paper, possibly table top etc). Have students keep a right angle as a referent with which to measure other items.</p>

				 <p>Wikimedia Commons</p>	
		<p>Identify 90° angles in the environment using a referent.</p>	<p>Identify 90° angles in the environment, using a referent.</p>	 <p>Wikimedia Commons Adobe Stock Images</p> <p>Can you think of another time on a clock where the angle would be 90° ?</p> <p>Infusing Indigenous Knowledge <u>Main Website:</u> Grade 3</p> <p>Explore angles using examples such as:</p> <ul style="list-style-type: none"> • Directions, such as northwest, etc. • Stomach bags and uses • Where animals store food • Location of sun in the sky • Grouse pouch (rattles) • Compare various Indigenous structures such as tipis and igloos. • Identify and compare angles in bridges and shelters (estimate the angle in the sleeping area). • Integrate with shape concepts and polygons. 	<p>3M2.2c - Finding My Right Angled Friends - Deep</p>

Resources

Mathology

[APLC Math Little Books for Alberta Curriculum](#)
[Mathology Free Resources on New Learn Alberta](#)

Math UP

- AB Lines and Angles
 - o Lesson 1: Investigating Lines and Angles
 - o Lesson 2: Comparing Angles

Existing Texts

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Math Focus 6 - Chapter 8 - pages 242 - 244 (naming angles is not part of Grade 3 measurement)

NCETM (teacher guides and resources)

The Powerpoint "[Angles](#)" could be used to model the different sizes of angles beginning with the referent of 90.
Note: Students do not learn the names acute/obtuse or reflex.

Resources Developed by School Divisions/Educational Institutions

[Edmonton Catholic Pacing Guides](#)

[Edmonton Catholic Curriculum Crates](#)

[LearnAlberta Curriculum](#)

APLC [Curriculum Professional Learning Resources](#)

Alberta Teachers Association Library [General Mathematics Resources](#)

Mathematics and Numeracy - [Curriculum Implementation Toolkit, Grades 4-6](#)

Websites and Resources to Support *Planning*

Inclusion - An [inclusive](#) approach to maths teaching

Inclusion - [Good Practices](#) on Inclusive Curricula in Mathematics Sciences

Differentiation: Preview vocabulary and pre teach to students. Use various forms of media to present vocabulary including simplified explanations, visuals in the form of diagrams to label and connect concepts.

Gizmos

New Learn Alberta (Teacher Login Required)
 None for this Outcome

Indigenous Lesson Plans and Resources

[Indigenous Culture Based Learning in Alberta Curriculum](#)

Problem Solving

[Tasks](#) - Graham Fletcher

[Tasks](#) - MS CASTILLOSMATH






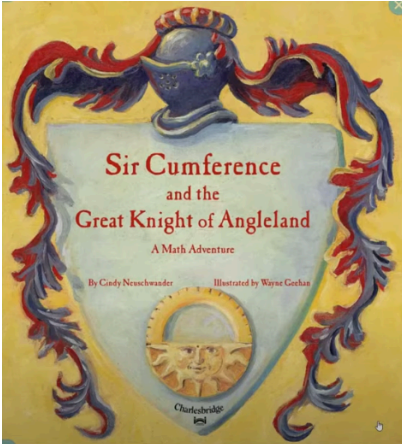
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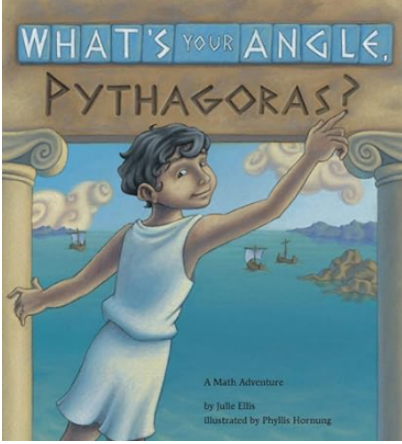

KUSP 3M2.1

KUSP 3M2.2

[Literature Connections](#)

Literature Connections

Title & Author	Format (Picture Book, Novel, Non-fiction, other)	Publisher & ISBN	Reference
<p><i>Savo Finds the Right Angle</i> by Ramya Pai</p> <p>Fatima wants to finish her homework on right angles. But her brother Savio drags her out to the beach. Will an afternoon outdoors help Fatima with her homework.</p>	<p>Picture Book</p>	<p>Pratham Books, 2019</p>  <p>This book is CC-BY-4.0 licensed. https://www.storyweaver.org.in/terms_and_conditions Some rights reserved.</p>	 <p>Savo Finds the Right Angle <small>Author: Ramya Pai Illustrator: Sunaina Coelho</small></p> <p>Level 3</p> <p>Data.booksie</p>  <p>This book is CC-BY-4.0 licensed.</p>
<p><i>Sir Cumference and the Great Knight of Angleland</i> by Cindy Neuschwander</p> <p>Join Sir Cumference, Lady Di of Ameter, and their son Radius for wordplay, puns, and problem solving in this angle-packed math adventure. In the third installment of the beloved Sir Cumference series, Radius must prove himself on his quest for knighthood by rescuing a king. Sent off with the family medallion for luck, Radius dodges dangers and dragons. The ultimate challenge lies in a mysterious castle with a maze of many angles.</p>	<p>Picture Book</p>	<p>Charlesbridge</p> <p>10-157091169X, 13-978-1570911699</p>	 <p>Sir Cumference and the Great Knight of Angleland <small>A Math Adventure</small> <small>By Cindy Neuschwander Illustrated by Wayne Coles</small></p> <p>Read Aloud Rachel Mattock EPIC</p>

<p><i>What's Your Angle, Pythagoras?</i> by Julie Ellis</p> <p>Children can test their math skills and learn the Pythagorean Theorem alongside young Pythagoras in this STEM adventure. Pythagoras' curiosity takes him from Samos to Alexandria, where he meets a builder named Neferheperhersekeper, who introduces him to the right angle. While building, Pythagoras uses geometry to learn how to measure angles and discovers all he needs to know about right triangles. With playful puns and wordplay Ellis creates the perfect STEM/STEAM resource for introducing young readers to a fundamental mathematical equation. A fun and accessible way to get young minds asking "what's your angle?".</p>	<p>Picture Book</p>	<p>Charlesbridge</p> <p>10 - 9781570911507 13 - 978-1570911507</p>	 <p>Read Aloud by Mrs. Pak</p>
<p><i>The Adventures of the Angles</i> by Kristie Carpenter</p> <p>Angles become more than just a math lesson as a bored student takes an adventure to a land where Angles come alive. He'll have fun while learning how important a role Angles play in his life.</p>	<p>Picture Book</p>	<p>CreateSpace Independent Publishing Platform</p> <p>10 - 1453804226 13 - 978-1453804223</p>	 <p>Written by Kristie Carpenter Illustrated by Bonnie Fennell</p>