Grade 1: Shapes Unit Plan

E1. Geometric and Spatial Reasoning

Link to Storybook "*The Greedy Triangle*" by Marilyn Burns

https://www.youtube.com/watch?v=9Xm3McQ6upw

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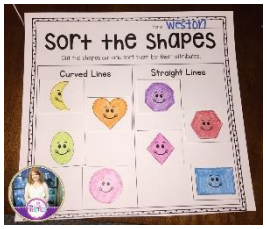
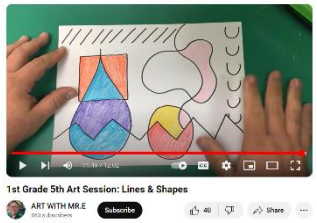
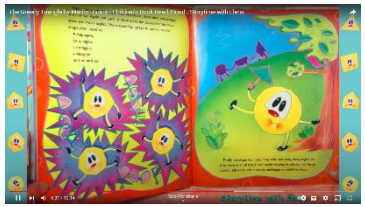
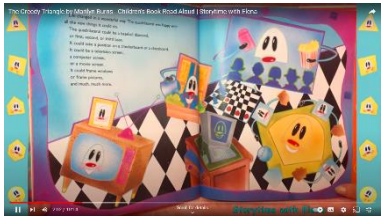
Monday	Tuesday	Wednesday	Thursday	Friday
Day 1 **Introducing Shapes and Feelings through Literacy** **Discussing SEL through the Greedy Tringle book.**	***Day 2*** **Shape Introduction and Diagnostic Assessment** **An introduction to shapes and shape attributes.**	***Day 3*** **Lines and Attributes** **Sorting 2D and 3D shapes by straight and curved sides or faces.**	***Day 4*** **What makes a Polygon** **An introduction to the properties of polygons.**	***Day 5*** **Quadrilaterals and Non-Quadrilaterals** **An introduction to quadrilaterals**
Day 6 **2D Shapes and 3D Objects** **Stamping/ and/or tracing different 3D objects to find 2D shapes.**	***Day 7*** **Shape Land** **Create an imaginary land based on 2D shapes and 3D objects**	***Day 8*** **Shape Scavenger Hunt** **Objects as shapes in the real world.**	***Day 9*** **Buffer/ Review day** **Read the "Greedy Triangle" and review what we now see on each page.**	***Day 10*** **Consolidation Day** **Assessment of attributes, formative assessment of ongoing shape knowledge**

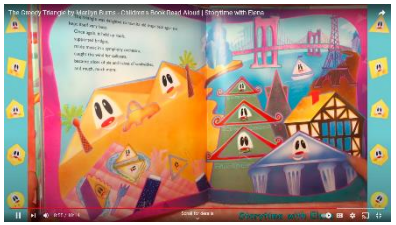
	Day 1
Activities	**Introducing Shapes and Feelings through Literacy** **Read** "The Greedy Triangle" **Discussion** (SEL, Language, and Health questions)
Curriculum expectations	**SEL:** Identify and manage **emotions**; Build **relationships** and communicate effectively. **Math:** **E1.2** - identify 2D shapes within objects. **Language:** **B1.1** - use effective listening skills; **B1.2** - listen to comprehend information; **C1.3** - identify text patterns and features; **C1.4** - relate images to text. **Health:** **D1.3** - body parts and body positive language.
Prompts	**SEL questions:** How else could the triangle have managed his **feelings** of dissatisfaction, without changing who he was? How did the Triangle's **friends** feel about being ignored and left out? What did Triangle learn in the end about being himself and about being a friend? **Language questions:** What was the story about? What **happened repeatedly** (over and over again)? What did the triangle **keep adding** every time? (One more side and one more angle). How did the **pictures** in the book show the shapes that we can find in everyday life? Can you give an example from the book of a shape and its picture? **Math questions:** Which **shapes** did the triangle become? What did those shapes look like (e.g, number of sides)? **Health questions:** The triangle was never happy with its shape and would say "I think if I just had one more side and one more angle... my life would be more interesting". Remember from health class -- is it okay to be our own **body shape**? If we were a triangle, how could we talk **positively** about our body and what it can do?
Previous knowledge	This introductory lesson is meant for easy entry into the discussion. As such, **little previous knowledge is required**. Students should already be **comfortable listening to and understanding stories**. The health questions assume we have **already discussed body parts and body positive language**.
Technology/Materials	**Storybook:** "The Greedy Triangle" by Marilyn Burns.
Assessment	**Checklist and notes** to assess listening skills, strategies and participation.
Rationale	This lesson provides students with an accessible entry into math concepts through cross-curricular conversations about literacy, health, and social-emotional learning.
Pictures	 A picture from the story.

	Day 2
Activities	**Shape Introduction and Diagnostic Assessment** **Re-Read** "The Greedy Triangle" **Co-construct Anchor charts** based on shape attributes (e.g., length, area, colour, texture, ability to roll, number of sides, curves, straight lines) **Explore** shape **manipulatives,** and practise sorting them in different ways.
Curriculum expectations	**Math: B1.1** - representing whole numbers (e.g., number of sides in a shape); **E1.1** - sorting shapes based on attributes; **E1.2** - identifying 2-dimensional shapes.
Prompts	**Math questions:** Can you name the shape on this page of the book? Where are these shapes seen in everyday life? How many sides does this shape have? How are these shapes similar to each other, and how are they different from each other? How can we group these shapes by ways they are similar? (e.g., all these shapes have 4 sides, or all these shapes have curved sides).
Previous knowledge	This lesson acts as a **diagnostic assessment** to determine previous knowledge. Students will hopefully remember some **basic shapes** from kindergarten (e.g., triangle, square). **Kindergarten expectations:** 17. describe, sort, classify, build, and compare two-dimensional shapes and three-dimensional figures, and describe the location and movement of objects through investigation
Technology/Materials	**Storybook:** "The Greedy Triangle" by Marilyn Burns. **Chart paper** for anchor charts.
Assessment	**Notes** to assess students' previous knowledge.
Rationale	This lesson is meant as a diagnostic lesson, to determine where students are at in their learning.
Pictures	 Shape attribute anchor chart (co-construct with students).

	Day 3
Activities	**Lines and Attributes** **Video Re-Aloud:** "Once Upon a Line": https://www.youtube.com/watch?v=O0R1WXDORWE to review straight and curved lines. **Sorting** 2D and 3D shapes by straight and curved sides or faces (using worksheets and manipulatives). **Art** extension with lines and shapes: https://www.youtube.com/watch?v=-W5ahSdRjE8
Curriculum expectations	**Language: B1.1** - use effective listening skills; **B1.2** - listen to comprehend information **Math: E1.1** - sorting shapes based on attributes; **E1.2** - identifying 2-dimensional shapes. **Art: D1.1** create two and three-dimensional works of art.
Prompts	**Language questions:** What was the story about? How was this story about the line, similar to the story about the triangle? **Math questions:** Which shapes did you see in the book? Which shaped had curved lines? Which shaped had straight lines? **Art questions:** Which shapes in your art have curved lines? Which ones have straight lines? Why did you choose the different shapes and how do they make you feel?
Previous knowledge	Students should know what **"curved"** means and what **"straight"** means. Revisit this idea as needed, using lots of gestures and examples.
Technology/Materials	**Storybook:** "Once Upon a Line" **Art supplies** (paper, pencils, coloured pencils, rulers)
Assessment	Art should have at least **one curved**-sided shape and **one straight**-sided shape present within it. (Assessed with a **checklist**). Students will be given a **worksheet** to sort two dimensional shapes. They can sort three-dimensional **objects**. Students will be given **feedback** based on the accuracy of their sorting.
Rationale	This lesson is meant to give students **practise sorting shapes** by an attribute. In this lesson, the attribute of focus is "curved" or "straight" sides.
Pictures	 "Once Upon a Line" story.  Sorting 2D shapes by straight and curved lines (worksheet).  Line and shape art extension task.

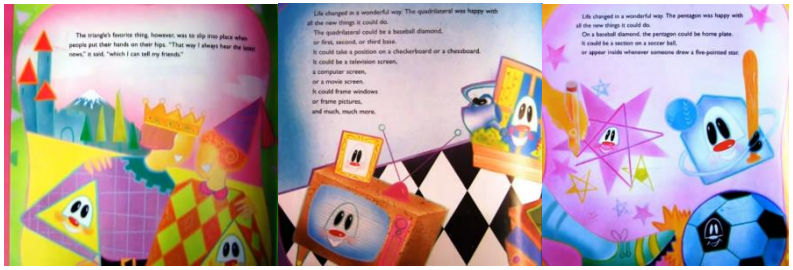
	Day 4
Activities	**What makes a Polygon** **Re-Read** "The Greedy Triangle" **Create** a picture using only polygons (the shapes are pre-cut) **List** the number and name the polygons used **Write** a small component that describes the picture, or **verbally** present their picture.
Curriculum expectations	**Math: B1.1** - representing whole numbers (e.g., number of sides in a shape); **E1.2** - identifying two-dimensional shapes. **Language: A3.1** - apply knowledge and skills to support learning in other subjects; **D2.1** - draft short simple texts.
Prompts	**Math questions:** What is a polygon? What polygons did you use? How many sides does it have? How many did you use in your picture? **Language questions:** What was the story about? What polygon shapes did you see in the book?
Previous knowledge	Students should know the **basic shapes** and how many **straight sides** they have (e.g., triangle, has 3). Students should know and be comfortable on how to **count past 10.**
Technology/Materials	**Storybook:** "The Greedy Triangle" by Marilyn Burns. **Pre-cut polygon shapes** **Art Supplies** (paper, glue, pencils, colour pencils)
Assessment	Picture should include **multiple** polygons. (Assessed with a **checklist**) Students should be able to **define** a polygon, **name** the polygon, **count** the number of sides, **count** the number of polygons used in picture. Students should be able to **write** a component that describe the picture OR **verbally present** their picture.
Rationale	This lesson is meant to **introduce the properties of polygons** while using the appropriate vocabulary to describe the picture.
Pictures	 A picture from the story.

	Day 5
Activities	**Quadrilaterals and Non-Quadrilaterals** **Re-Read/Show** "The Greedy Triangle" **Find** different 2D shapes in the classroom. **Organize/Sort** the different shapes as a quadrilateral or a non-quadrilateral **Count and tally** the number of quadrilaterals and non-quadrilaterals
Curriculum expectations	**Math:** **D1.1** - sorting things according to one attribute; **D1.5** - analyse different sets of data, (e.g., using tally); **E1.1** - sorting two-dimensional shapes. **Language:** **A3.1** - apply knowledge and skills to support learning in other subjects; **D2.1** - draft short simple texts.
Prompts	**Math questions:** What shapes did you find? How did you know that is a quadrilateral/non-quadrilateral? How many sides does it have? How many quadrilaterals and non-quadrilaterals did you find? Did you find more quadrilaterals/non-quadrilaterals? Are they polygons? **Language questions:** What shapes are quadrilaterals in the book? How many sides do they have? What shapes are the others (non-quadrilaterals)?
Previous knowledge	Students should **know different polygons** (e.g., square, triangle). Students should be able to **count and tally** the number of sides.
Technology/Materials	**Storybook:** "The Greedy Triangle" by Marilyn Burns. **Paper/Tables** for tallying. **2D shapes in the classroom**
Assessment	Students should be able to correctly **identify** quadrilaterals, non-quadrilaterals/other polygons (**written** or **verbally**). Students will be given a worksheet to **draw and tally** the difference between quadrilaterals and non-quadrilaterals.
Rationale	This lesson is meant to **introduce quadrilaterals and its properties**. Focusing on “4 straight” sides in a closed shape.
Pictures	 A picture from the story.

	Day 6
Activities	**2D and 3D shapes** **Re-Read** "The Greedy Triangle" **Stamp/trace** the sides of different 3D objects using paint/pencils (e.g., square based pyramid) **Label/name** each 3D object and **identify** different 2D shapes found in each object (e.g., square and rectangle found in a square based prism)
Curriculum expectations	**Math: E1.2** - identify two-dimensional shapes within an object **Art: D1.3** - use elements of design to communicate ideas
Prompts	**Math questions:** What shapes do you see in your 3D object? Can you make these objects without 2D shapes? Can you name your 3D object. **Art questions:** What elements of design did you use? What colours did you use?
Previous knowledge	Students should be familiar on how to **name and identify 2D shapes** (e.g., triangle, square, etc.) and some 3D objects. *Note: They should have reviewed these daily in previous lessons.* Students should **know** the different elements of design such as line, shape, and colour.
Technology/Materials	**Storybook:** "The Greedy Triangle" by Marilyn Burns. **3D objects to stamp and trace** (e.g., prisms, pyramids, spheres, etc.) **Art supplies** (paper, paint, pencils, colour pencils)
Assessment	Students should have **a page** of multiple 2D shapes stamped/traced from 3D objects. Students should be able to **identify** and **write** the names of different 2D shapes and 3D objects. Students should **use** different colours and elements of design to emphasize the shapes.
Rationale	This lesson is meant to **look at the differences of 2D shapes and 3D objects**. Focusing on how 3D objects are made up of 2D shapes.
Pictures	 A picture from the story.

	Day 7
Activities	**Shape Land** **Show** "The Greedy Triangle" - cityscape **Make** an imaginary land that has different 2D shapes and 3D objects using (e.g., Play-Doh, toothpicks, and Lego) **Write** a small component that describes the shape land, or **verbally** present.
Curriculum expectations	**Math: E1.2** - identify two-dimensional shapes within an object; **E1.3** - describe two-dimensional and three-dimensional objects with matching halves. **Art: D1.1** - creating three-dimensional works of art that express ideas; **D1.4** - use a variety of materials, tool, and techniques. **Language: A3.1** - apply knowledge and skills to support learning in other subjects; **D2.1** - draft short simple texts.
Prompts	**Create an imaginary land using 2D and 3D shapes/objects.** **Math questions:** Which shapes did you use? What 2D shapes do you see in your 3D object? **Art questions:** What materials did you use? What does your imaginary land have? **Language questions:** What is your land called? Describe it.
Previous knowledge	Students should **know**: **2D shape** names and attributes, **3D objects** names and attributes. Students can **count** the sides and corners. Students can **identify 2D and 3D shapes/objects** used.
Technology/Materials	**Storybook:** "The Greedy Triangle" by Marilyn Burns. **Building supplies** (Play-Doh, toothpicks, Lego) **Art supplies** (pencil, eraser, scissors)
Assessment	Students will be using tools available to create a unique "Shape Land" (Assessment using a **checklist**). Students will **description** their shape land and the shapes found within the land. Students will **write** a small component that describes their land or verbally present.
Rationale	It is important that students can **build 3D objects**, and the Shape Land activity will allow them to apply their knowledge in an art context. Students will then **use their new vocabulary to describe the shapes** they have created in their Shape Land creation. This allows students to see shapes in the real world.
Pictures	 The cityscape land from the book.

	Day 8
Activities	**Shape Scavenger Hunt** Objects as shapes in the real world
Curriculum expectations	**SEL: Connection:** Connection to everyday objects; **Reasoning and proving:** Giving reasons for choosing that object **Math: B1.1 -** representing whole numbers (e.g., number of sides in a shape); **B2.1 -** Counting shape sides and corners; **E1.1** - sorting shapes based on attributes; **Language: B1.1** - use effective listening skills; **B1.2** - listen to comprehend information; **B1.5 -** Use appropriate word choice, including new vocabulary, grammar, and cohesive phrases and sentences when speaking and communicating ideas.
Prompts	**Find shapes found around the classroom named by the teacher.** **SEL questions:** What made you choose the shape that you chose? What is your real-life object that makes that shape? **Math questions** What attributes do you see that made you choose that shape? Is it a 2D or 3D shape? If 3D, what 2D shapes do you see? **Language questions:** Describe what you see.
Previous knowledge	**Naming** 2D and 3D shapes/objects **Counting** sides and corners of shapes **Finding** 2D shapes within 3D objects **Using** new vocabulary (e.g. polygon, quadrilateral, etc.)
Technology/Materials	**None**
Assessment	Allow students to **explore** the 2D and 3D shapes around the classroom and **find** the ones that the instructor names. **Discuss** the shapes found and their properties, emphasizing their relevance in the real world. Have students **discuss** the object that they found and share their rationale using their new vocabulary Take a picture and post it on the board for **review**.
Rationale	It is important for students to **understand that 2D and 3D shapes are found everywhere**. Being able to name and locate them leads to the next part of the unit where students will have to give directions using shapes as stopping points for further directions.
Pictures	**None**

	Day 9
Activities	**Buffer/ Review Day** **Read:** the “Greedy Triangle” and review what we now see on each page.
Curriculum expectations	**Math: B1.1 -** representing whole numbers (e.g., number of sides in a shape); **E1.1** - sorting shapes based on attributes; **E1.2** - identify two-dimensional shapes within an object.
Prompts	**Review information covered to date in this unit:** 1. What attributes can we use to organize shapes? 2. What are the similarities and differences of 2D and 3D shapes/objects? 3. Where do we see shapes in real life? 4. Which 2D and 3D shapes/objects do we see? 5. How do we see them in real-life context? 6. What 2D shapes are found within the 3D objects?
Previous knowledge	**Naming** 2D and 3D shapes/objects **Counting** sides and corners of shapes **Finding** 2D shapes within 3D objects
Technology/Materials	**Projector** to display images of each page for discussion. **Storybook:** "The Greedy Triangle" by Marilyn Burns
Assessment	**Formative:** Students notice patterns in shapes Students can count the number of sides Students can count number of corners Students can defend their knowledge
Rationale	This day allows the class to **catch up on incomplete lessons** or it allows the students to ask questions and the teacher to consolidate based on how the students performed in the previous consolidation activities.
Pictures	 Pictures from the “The Greedy Triangle”

	Day 10
Activities	**Consolidation Day** Summative assessment of attributes, formative assessment of ongoing shape knowledge
Curriculum expectations	**SEL: Problem solving:** Determine the best shapes based on the attribute you chose; **Reasoning and proving:** Provide reasons for your organization strategy. **Math: B1.1 -** Read and represent whole **numbers** up to and including 50 and describe various ways they are used in everyday life; **D1.1 -** sort sets of data about people or things according to one attribute, and describe rules used for sorting; **E1.1 - S**ort three-dimensional objects and two-dimensional shapes according to one attribute at a time and identify the sorting rule being used; **B2.1 -** Counting shape sides and corners. **Language: A3.1** - apply knowledge and skills to support learning in other subjects; **B1.1 -** use effective listening skills; **B1.2** - listen to comprehend information; **B1.5 -** Use appropriate word choice, including new vocabulary, grammar, and cohesive phrases and sentences when speaking and communicating ideas.
Prompts	**Creating an Anchor Chart with the students, ask:** What are the attributes we can use to organize shapes? **Review:** Number of lines, Number of corners, 2D or 3D, 2D Shapes within 3D shapes, Shapes of lines, Polygons, Quadrilaterals **Post-Assessment Discussion with Teacher:** What attribute did you use to organize your shapes? What shapes did you choose? How did you choose it?
Previous knowledge	Types of line, number of lines, number of corners, 2D and 3D shape names and attributes, Polygons, Quadrilaterals,
Technology/Materials	**Jars for organizing** (2 per student) **Basket of 2D and 3D shapes** (1 per group) **Worksheets**
Assessment	Students can use attribute **anchor chart** What attribute did you use to organize your shapes? Defend your answer. *(See Image below)*
Rationale	This **demonstrates the students' ability to organize shapes** based on one attribute, Allows them to **communicate their understanding** of organizing and naming shapes.
Pictures