

CONT933 Module 3 Culminating Task

Name: *Candace Ivanco*

Date: *July 15, 2020*

Title of Lesson: *Exploring Area and Perimeter*

	Mathematics	Applied Design, Skills, and Technologies
Grade Level:	5	5
First Peoples' Principle(s) of Learning Focus:	<p>Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place).</p> <p>Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts.</p>	Learning involves patience and time.
Big Idea(s):	Closed shapes have area and perimeter that can be described, measured, and compared.	The choice of technology and tools depends on the task.
Curricular Competencies:	<p><i>Reasoning and analyzing</i></p> <ul style="list-style-type: none"> • Use reasoning to explore and make connections <p><i>Understanding and solving</i></p> <ul style="list-style-type: none"> • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Visualize to explore mathematical concepts • Develop and use multiple strategies to engage in problem solving <p><i>Connecting and reflecting</i></p> <ul style="list-style-type: none"> • Reflect on mathematical thinking • Connect mathematical concepts 	<p><i>Applied Technologies</i></p> <ul style="list-style-type: none"> • Use familiar tools and technologies to extend their capabilities when completing a task • Choose appropriate technologies to use for specific tasks • Demonstrate a willingness to learn new technologies as needed

	to each other and to other areas and personal interests	
Curriculum Content:	<p>Relationships between area and perimeter</p> <ul style="list-style-type: none"> • measuring area of squares and rectangles, using tiles, geoboards, grid paper • investigating perimeter and area and how they are related to but not dependent on each other • use traditional dwellings • Invite a local Elder or knowledge keeper to talk about traditional measuring and estimating techniques for hunting, fishing, and building. 	<p><i>Students are expected to use the learning standards for Curricular Competencies from Applied Design, Skills, and Technologies 4-5 in combination with grade-level content from other areas of learning in cross-curricular activities to develop foundational mindsets and skills in design thinking and making.</i></p>

Purpose:	Students learn about area and perimeter through inquiry.
Objectives:	Students demonstrate that they can make connections to area and perimeter through inquiry, using different technologies to demonstrate learning and effectively communicate their understanding of this mathematical concept using different strategies for problem solving.
Description of Activity:	<p><i>Activate and Engage: (Document camera, Khan Academy, YouTube)</i></p> <p><i>Introduce Perimeter</i> to the class by holding up four small sticks. Thinking aloud, ask, “What shape can I make with these four sticks?” {Response should be square.} Place the four sticks under the document camera, making a square. “Let’s talk about perimeter, can anyone tell me what they think perimeter is?” Students offer their suggestions and when the discussion ends, write the correct response on the whiteboard, drawing a picture sticks beside it. Highlight/outline the perimeter using a different coloured marker. Return to the document camera and take out a ruler. “Let’s measure each side of this square.” As you measure each side, point out that you are using centimetres on the ruler and write each measurement on the whiteboard beside your drawing.</p> <p>The perimeter is the distance around something. “Let’s add the measurements of all sides to see what the perimeter is. “</p>

Watch: <https://www.khanacademy.org/math/basic-geo/basic-geo-area-and-perimeter/basic-geo-perimeter/v/introduction-to-perimeter>

Introduce Area: (This may be an additional follow up lesson to perimeter.)

Let's go back to our square we made with sticks. "If I asked you to find the area of the square, what do you think I want you to do?" After the discussion, show this YouTube Video:

<https://www.youtube.com/watch?v=uKKl8R1xBM#:~:text=an%20introduction%20to%20area%20area,measure%20area%20we%20use%20squares.>

Have students talk to their elbow partner about what they think the area of the square is. Encourage students to share their partner's response with the rest of the class.

Explore and Discover: (Rulers, tape measure, calculator)

PARTNER ACTIVITY: With your table partner, find an object in the classroom and measure the perimeter. Can you also find the area?

What do you think the perimeter of the classroom is? How could we measure it?

Measure the classroom and provide students with the measurements of each side.

INDIVIDUAL ACTIVITY: Ask students to record these numbers in their Math Journals and draw an outline of the classroom. (Do this on the whiteboard as well to support all learners.)

Suggest to students that they use a calculator to determine what the perimeter would be. What would the area be? Write down one example of a space at your home that you could find the area and perimeter for.

Organize and Integrate: (BYOD, Calculators)

Your task for next class:

Take a picture of the place you thought of (in the last task) and bring it with you to class. This photo could be taken on an iPod, iPhone, iPad, or computer. Measure the space you have chosen and record the measurements on your online student portfolio, under file "Student Inquiry: Perimeter and Area". Next day, you will be placed into random groups of three, where you will share the space you chose and the measurements. Together, you will calculate the perimeter and area of each space and discuss your answers. Once completed you will share this information with another group.

Closure: (Showbie)

CLASS DISCUSSION: What similarities did you observe in your group? What were the differences? Did you have any challenges calculating the perimeter and area

	<p>of your chosen space?</p> <p>Write about this learning experience in your online student portfolio and include the following details:</p> <p>I learned that perimeter is _____.</p> <p>I learned that area is _____.</p> <p>I chose to measure _____ that had the measurements of _____, _____, _____, and _____. The perimeter of this space is _____ and the area is _____.</p> <p>One thing I found challenging was _____.</p> <p>One thing that I enjoyed about this lesson was _____.</p>
<p>Accommodations/ Adaptations for Students:</p>	<p>ELL:</p> <ul style="list-style-type: none"> • Provide visuals and vocabulary cards. • Think-a-loud, model what you want students to do, describing what you are thinking as you go. • Provide sentence starters for inquiry. <p>Learning Disability:</p> <ul style="list-style-type: none"> • Provide written instructions with visuals for learning tasks. • Integrate manipulatives to support learning. • Create graphic organizers to record thoughts and ideas. <p>Gifted:</p> <ul style="list-style-type: none"> • Create open ended questions for further inquiry. • Ask questions for deeper thinking.
<p>Assessment Methods:</p>	<p>Formative:</p> <ul style="list-style-type: none"> • Group discussions – communication and collaboration • Problem solving – partner and individual during activities • Self-assessment – reflection in online student portfolios <p>Summative:</p> <ul style="list-style-type: none"> • Math Journals • Graphic Organizers

Resources: <https://curriculum.gov.bc.ca/curriculum/mathematics/5>
https://www.open.edu/openlearncreate/pluginfile.php/134950/mod_resource/content/3/EM10_AIE_Final.pdf