CONT933 Module 3 Culminating Task Template

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Title of Lesson: *Star Quilt Fractions*

Adapted from : http://aboriginalperspectives.uregina.ca/workshops/workshop2010/pdf/Decimal%20Fractions%20and%20Star%20Quilts.pdf

	Mathematics	**Applied Design, Skills, and Technologies**
Grade Level:	4	
First Peoples' Principle(s) of Learning Focus:	• Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place). • Learning recognizes the role of Indigenous knowledge. • Learning is embedded in memory, history, and story. • Learning involves patience and time.	
Big Idea(s):	• Fractions and decimals are types of numbers that can represent quantities.	• The choice of technology and tools depends on the task. • Skills are developed through practice, effort, and action.
Curricular Competencies:	• Develop mental math strategies and abilities to make sense of quantities • Use technology to explore mathematics • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local	• Use materials, tools, and technologies in a safe manner, and with an awareness of the safety of others, in both physical and digital environments • Identify the skills required for a task and develop those skills as needed • Use familiar tools and technologies to extend their capabilities when completing a task • Choose appropriate technologies to use

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	community, and other cultures • Communicate mathematical thinking in many ways • Represent mathematical ideas in concrete, pictorial, and symbolic forms • Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts	for specific tasks • Demonstrate a willingness to learn new technologies as needed
Curriculum Content:	• decimals to hundredths • ordering and comparing fractions	

Purpose:	Students will practice their skills in making symmetrical patterns, determining fractions of wholes, ordering fractions from least to greatest and converting fractions out of 100 to decimals.
Objectives:	**I need to** • use smaller diamonds to create larger ones • Use diamonds to make a star pattern **I must** • Work with my group to create a star pattern using different coloured diamonds • Work with my group to create a symmetrical diamond • Count the number of diamonds of each colour **I can** • Write the number of little diamonds of each colour as a fraction • Write the number of little diamonds of each colour as a decimal **I could** • Convert each of my fractions to lowest terms **I can try to** • Write the number of little diamonds of each colour as a percentage
Description of Activity:	students will work collaboratively to make paper star quilts. Once the quilts are constructed students will count the number of sections of each colour and determine the fraction of the whole each colour represents. Students

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	will then convert the fractions to decimals.
Accommodations/ Adaptations for Students:	**ELL:** • Word bank • Sentence stems • Illustrated word wall **Learning Disability:** • Templates for building on with pattern blocks • Pre-cut diamonds • Calculator **Gifted:** • Calculate percentages as well as fractions and decimals • Practice reducing fractions to lowest terms
Technology Integration	**Low Tech** • Rulers • pattern blocks • calculators **teacher tech** • smart board/ projector • computer **BYOD / Any Device** students take a photo and upload their image to my blueprint then add a voice over explaining the image and explain the process and how they contributed. **Platform** Teams / My Blue Print **Social Media** Teacher could share images of the student created quilts on a class or school Instagram explaining the math concepts covered. Fractions, decimals, symmetry.

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Assessment	Completed math for the quilts. Voice over on my blueprint Student reflections on their learning in their math journals

http://aboriginalperspectives.uregina.ca/workshops/workshop2010/decimalfractions1.shtml

Lesson segment	Activity	Technology	Materials	Adaptations
Introduction	• Introduce students to the idea of star quilts using the power point from the Aboriginal Perspectives math website Star Quilt Fractions lesson	• Smart board • Projector and laptop		• Print out images • Word banks • Sentence frames • Visual / illustrated word wall
Warm up	• On the smart board demonstrate using the small diamonds to make a larger diamond • Use pattern blocks to make a star pattern • Students use pattern blocks in pairs to make smaller diamonds at their desk. Make diamonds with 4, 10, 12, 25	• Smart board • Diamond pattern blocks	• Pattern blocks (blue diamonds)	• Templates or larger diamonds for laying pattern blocks out on

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Lesson segment	Activity	Technology	Materials	Adaptations
Work block 1	• Divide the class into eight small groups and hand out the supplies to each group: one template of a large diamonds and one smaller diamonds for each student. • Ask the students in each group to use the small templates to trace diamonds on white paper until each group has 25 small diamonds. • Have each of the groups create a design for a star quilt by coloring some of the small diamonds and placing them on the large diamond. When each of the group has created a design. • Document the process with photos	• Device to take photos • Myblueprint and teams to share photos with the teacher	• Diamond tracers (small) • Large Dimond templates • Construction paper • Scissors • Glue sticks	• Pre cut diamond shapes
Discussion 1	• Each group shares their design with the class • Stars and wishes for each design • From the 8 designs created by the students decide which will be used for the class star quilt, this can be done for example through a vote or a draw.	• Smart board with smart notebook • Pre load the students photos	• Board • Way to record student thinking	• Sentence stems • Word bank
Work block 2 (day 2)	• Once a design is chosen have each of the 8 groups cut out 25 more small diamonds and duplicate the chosen design. Have each group glue the 25 small diamonds onto their large diamond and form the 8 large diamonds into a star quilt. • Upload photos of finished sections to my blueprint or teams	• Projector for chosen design • Device with a camera to take pictures	• Diamond tracers (small) • Large Dimond templates • Construction paper • Scissors • Glue sticks	• Pre cut diamond shapes •

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Lesson segment	Activity	Technology	Materials	Adaptations
Discussion 2	• What worked with this section? • What did you notice? • What was a challenge?	• Smart board with smart notebook • Pre load the students photos	• Projector • Smart board • Star Quilt	• Sentence stems • Word bank
Work block 3	• Cover up or remove half the star quilt and observe that the half remaining is composed of 100 small diamonds. Write each color used in the star quilt on the board and ask the students to discover the fraction of each color both as a fraction and a decimal. • Use the half star quilt to explore fractions and decimals both orally and in written form.	• Smart board with smart notebook • Pre load the students photos	• Projector • Smart board • Star Quilt	• Sentence stems • Word bank
Independent work	• Complete the chart for each colour on the quilt showing the number of diamonds of each colour, as a fraction out of 100, the fraction in lowest terms, as a decimal and if possible as a precent	• Projected sample • Calculator	• Student work sheets • Pencils • Erasers	• Partially complete the work sheet • Remove sections as needed •
Reflection	• Take a photo of the star quilt • On my blueprint create a voice over for the photo explaining the process of how the quilt was made. Students should discuss the steps, what worked, what didn't work, how they felt about it and what they would keep the same or change if we did it again.	• Device that can connect to the internet • Reliable internet	• Device with internet access	• Sentence stems • Word bank

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