

Student Handout (Grades 6 - 8)

Introduction:

In the book we are reading, Ojiiig's quilt is made of many shapes and patterns. The First Nations University in Saskatchewan also has a patterned floor. Today, we're going to explore these patterns and create some of our own using tangram tiles!

Part 1: Observing Patterns

- Look at Ojiiig's Quilt:



- What shapes and patterns can you find in the quilt?

- Make an estimate of the size of the quilt as a whole. Explain your reasoning.

- Based on your estimate of the quilt size, make an estimate of the perimeter of the main star pattern.

- **Challenge Question:** Based on your estimates, can you guess how much thread would be required to stitch the entire star pattern together? Explain your reasoning.



- Look at the First Nations University Floor



- What shapes and patterns do you see?

- What are the similarities and differences between the quilt and the floor patterns?

Part 2: Creating Tessellations

- **What is a Tessellation?** Tessellations are patterns made of shapes that fit together without any gaps or overlaps.
- **Using Tangram Tiles:** Use the tangram tiles (physical or online) to create your own tessellation pattern.
 - Create a pattern that is meaningful to you and tell your classmates about it.

Part 3: Deeper Thinking

- Do you see any symmetry in the quilt, the floor, or your own design?

- Are there any patterns or symbols that are important to you, your family, or your culture?

- Where else have you seen tessellations or patterns in the world?

- Look at the different triangles in all the patterns (Ojiig's quilt, the FNU floor, and your own patterns). Can you find equilateral, isosceles, scalene, and right triangles? Explain them to your classmates.
- Use estimations and reasoning to calculate the area and perimeter of the various shapes (Ojiig's quilt, the FNU floor, and your own patterns) you find.

