



Montana
Office of Public Instruction
 Denise Juneau, State Superintendent
 In-state toll free 1-888-231-9393

Mathematics Model Teaching Unit Shapes in the Blackfeet Language

Created by Samantha Grant

Grade Kindergarten – Approximate Duration: 60 minutes

Stage 1 Desired Results

Established Goals:

Geometric Reasoning Mathematics Content Standard 3: A student, applying reasoning and problem solving, will understand geometric properties, spatial relationships, and transformation of shapes, and will use spatial reasoning and geometric models to analyze mathematical situations within a variety of relevant cultural contexts, including those of Montana American Indians.

- **3.1 Two-Dimensional Attributes:** Describe, compare, and analyze attributes of two-dimensional shapes.

IEFA: Essential Understandings 1: There is great diversity among the 12 tribal Nations of Montana in their languages, cultures, histories and governments. Each Nation has a distinct and unique cultural heritage that contributes to modern Montana.

Understandings:

Students will understand:

- That the rectangle, circle, square, triangle and rhombus can be given two names, one in the Blackfeet (Pikuni) language and one in English.
- The Blackfeet language is unique to the Pikuni and different from all other tribes.

Essential Questions:

- How are these shapes the same?
- How are these shapes different?
- How many sides do the shapes have?
- How many corners do the shapes have?
- How do we say these shapes in English?
- How do we say these shapes in Blackfeet (Pikuni)?

Students will be able to...

- Say and identify the shapes in English.
- Say and identify the shapes in the Blackfeet (Pikuni) language.
- Make the shapes on the geoboard with rubber bands.

Students will know...

- How the shapes look and are able to identify them.
- How to say the shapes in English and in Blackfeet (Pikuni).
- How to make the shapes on a geoboard as well as the circle on the back of the geoboard.
- The Blackfeet (Pikuni) is one of many Native American Languages.



Stage 2 Assessment Evidence

Performance Tasks: Student will practice and recite the shapes in English and Blackfeet. They will practice the shapes by forming them on a geoboard and by using the circle on the back of the geoboard.

Other Evidence: Students will participate in identifying and saying the names of the shapes in English and Blackfeet (Pikuni). Teacher will observe the students making the shapes on the geoboard and saying the shape in English and Blackfeet (Pikuni).

Stage 3 Learning Plan

Learning Activities: Have materials prepared before lesson and on the tables!

1. 15 minutes: Identify square, circle, rectangle, triangle, and rhombus in English. Show the students pictures of these shapes and have the student identify them. Pass out pattern blocks and attribute blocks of each shape for students to touch and examine.
2. 15 minutes: Identify square, circle, rectangle, triangle, and rhombus in the Blackfeet (Pikuni) Language. Show the pictures of each shape with the Blackfeet (Pikuni) language and English translation on it. Teacher says the shapes in Blackfeet (Pikuni) and has the students repeat it. Talk about how many sides and corners each shape has. How are the shapes alike? How are the shapes different? Emphasize that the Blackfeet (Pikuni) language is the one of many different Native American Languages.
3. 30 Minutes: Students will go to their tables and make the shapes on the geoboards, the students will use the back of the geoboard to make circles. Observe each student and ask them to identify the shape in English and Blackfeet (Pikuni) language. Display the shapes for each student to refer back to.
4. The teacher can go over these shapes in English and the Blackfeet (Pikuni) language everyday during math or calendar. This activity can be a math center with the pictures.

Materials/Resources Needed: Pattern Blocks, attribute blocks, pictures of each shape in English and Blackfeet (Pikuni), geoboards and rubber bands.

Website: Pattern block template (if teacher doesn't have pattern blocks)

<http://www.mathwire.com/index.html>

Go to website, click on A-Z list on top of page, choose P-R, scroll down to pattern block template and print the page out. Teachers can make circles on a word document if none are available.

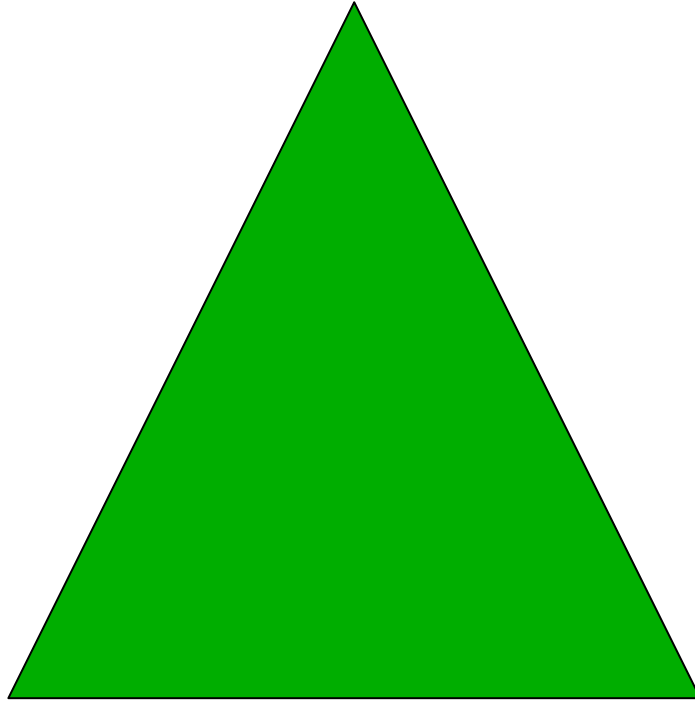
* Teachers are welcomed to download activities to use in the classroom.

If geoboards are not available the teacher can use string, straws, clay and other object for students to form the shapes.

Shapes in Blackfeet: Rectangle: Is-i-nap-innoyi, Triangle: No-toy-ii, Square: A-tak-saa-kssin, Circle: O'taki, Rhombus: II-taa-wa-ko-mo-tsi-iop (Shapes with the Blackfeet name attached at bottom of lesson). **How to say the shapes phonetically, according to Calvin Weatherwax, in Blackfeet: Rectangle: Is-e-nap-in-no-ye, Triangle: no-to-ye, Square: Ah-duc-suc-sin, Circle: OOh-tah-kee, Rhombus: E-tah-wah-ko-mo-tsee-yiop**
Contact Information on pronunciation of the Blackfeet shape words: Browning Public School district # 9 Native American Studies (406) 338-2715 or Blackfeet Community College Native American Studies (406) 338-5441.



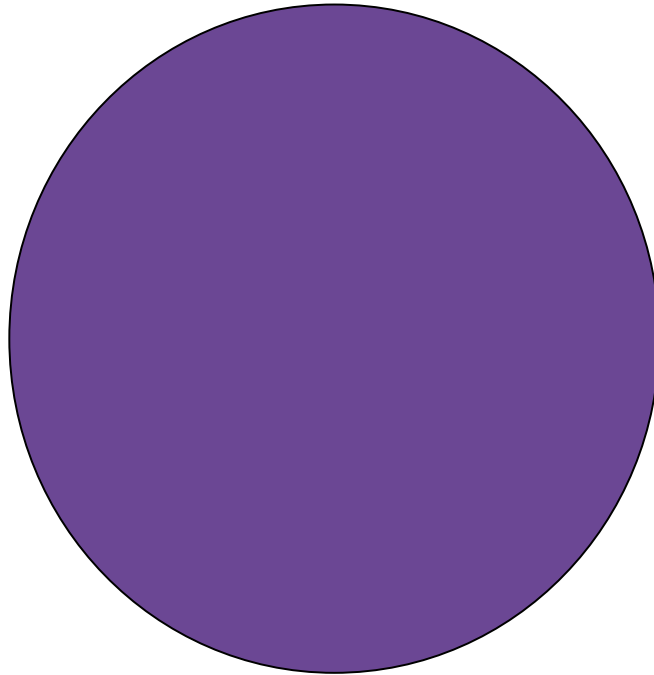
Is-i-nap-innoyi
(Is-e-nap-in-no-yee)
rectangle



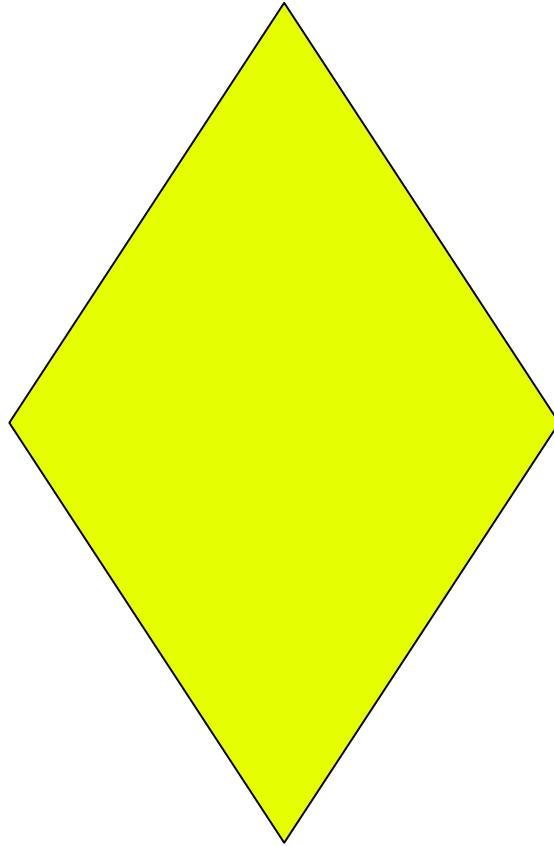
No-toy-ii
(no-to-yee)
Triangle



**A-tak-saa-kssin
(Ah-duc-suc-sin)
square**



O'taki
(OOh-tah-kee)
circle



**II-taa-wa-ko-mo-tsi-iop
(E-tah-wah-ko-mo-tsee-yiop)
rhombus**