

Percentages and Beads

Subject: Mathematics
Strand: Number

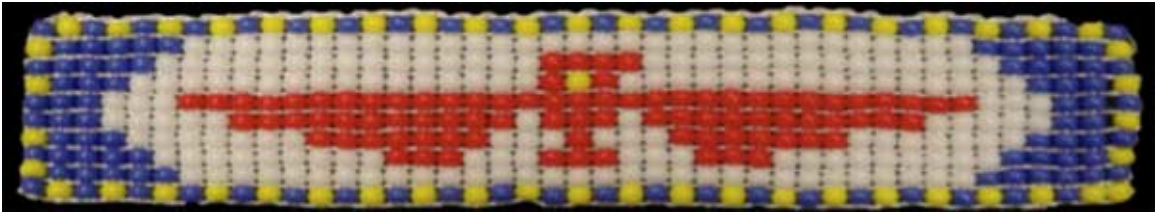
Creator: Ashley Pennington and Harley Weston
Grade: 6

Content (topic)	
Percentages	
Outcomes:	Indicators:
N6.5 Demonstrate understanding of percent (limited to whole numbers to 100) concretely, pictorially, and symbolically.	N 6.5a: Observe and describe examples of percents (whole numbered to 100) relevant to self, family, or community, represent the percent concretely or pictorially (possibly physically), and explain what the percent tells about the context in which it is being used. N 6.5c: Create and explain representations (concrete, visual, or both) that establish relationships between whole number percents to 100, fractions, and decimals. N 6.5d: Write the percent modeled within a concrete or pictorial representation. N 6.5f: Describe a situation in which 0% or 100% might be stated.
Lesson Preparation: Equipment/materials:	
<ul style="list-style-type: none">• One copy of a beading example for each group of students. (Appendix 1.)• One copy of the 100 bead, 50 bead and 25 bead window for each group. (Appendix 2.)• One copy of activity sheet 1 for each student. (Appendix 3)• Graph paper• One copy of activity sheet 2 for each student. (Appendix 4)• Markers or pencil crayons.	
Presentation Development	
<ul style="list-style-type: none">• Have your students watch the PowerPoint slides which gives some background information on beadwork.• Discuss with the students the significance of beads. For example beading	

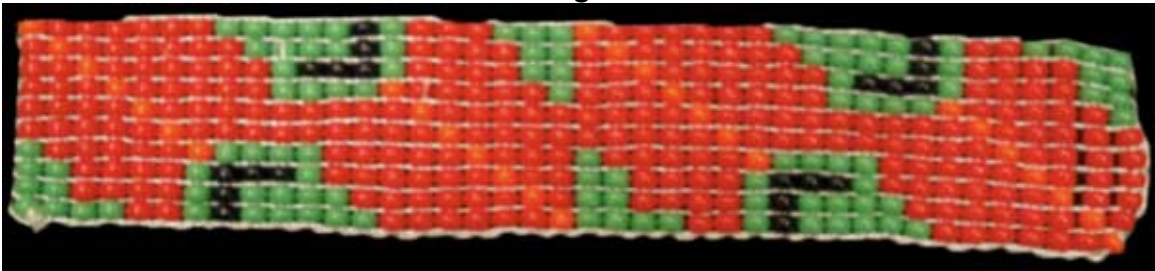
has been an important part of First Nations culture for approximately 8 000 years prior to European contact. Beads were made of shell, pearl, bone, teeth, stone and fossil stems. Glass beads were introduced as part of First Nation and Métis culture when the explorers came from Europe and brought seed and glass beads as trading items.

- Explain to students that each of the tribes had distinct designs, patterns and approaches. Therefore, collections of First Nations beadwork art include many different designs, styles, and stitches. In Saskatchewan, the Plains Cree use symmetrical patterns and distinct geometrical shapes.
- Divide the students into groups of 2 to 4 students and give each student a copy of activity sheet 1.
- Have each student place the appropriate 100-bead window over the beading example so that 100 whole beads are visible and complete question 1 on the activity sheet.
- When the students have completed question 1 have each student place the appropriate 50-bead window over the beading example so that 50 whole beads are visible and complete question 2 on the activity sheet.
- When the students have completed question 2 have each student place the appropriate 25-bead window over the beading example so that 25 whole beads are visible and complete question 3 on the activity sheet.
- With the Ladybug beading and the 25-bead window the window can be placed so that only one color bead is visible. This presents an opportunity to discuss 100% and 0%.
- Give each student a page of graph paper and ask him or her to complete the activity sheet 2.

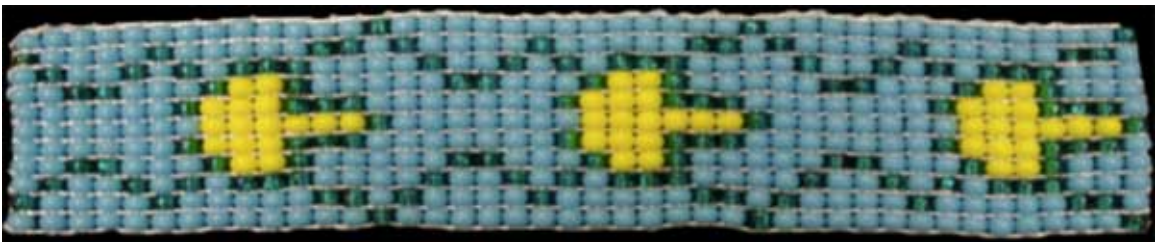
Appendix 1



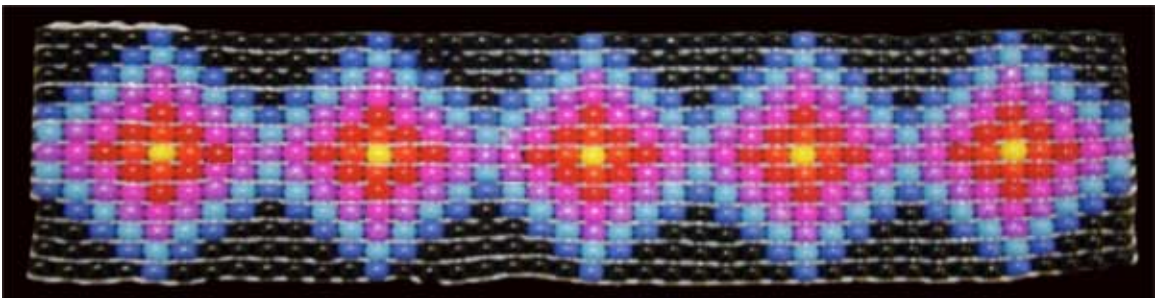
Eagle



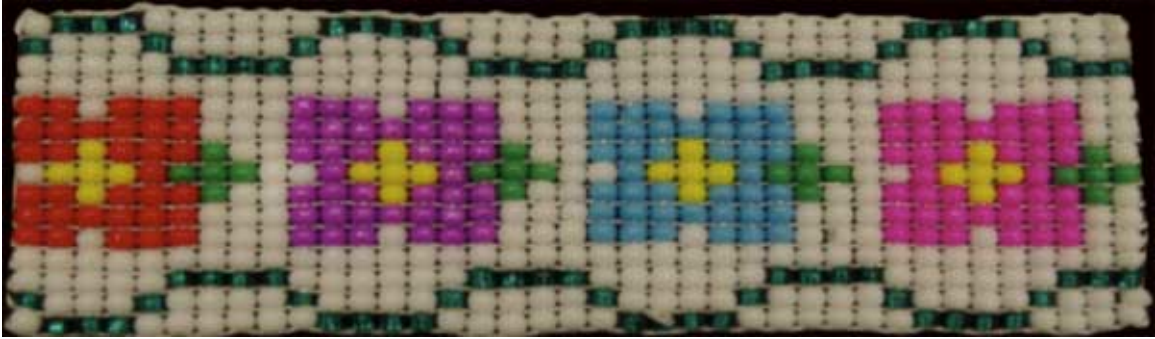
Ladybug



Frog

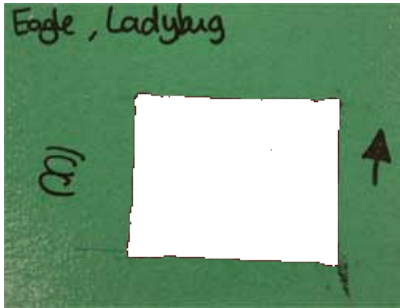


Sunset

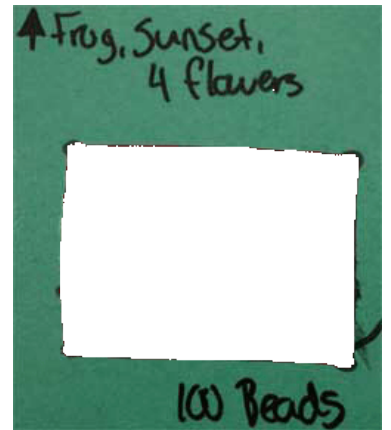


Four flowers

Appendix 2



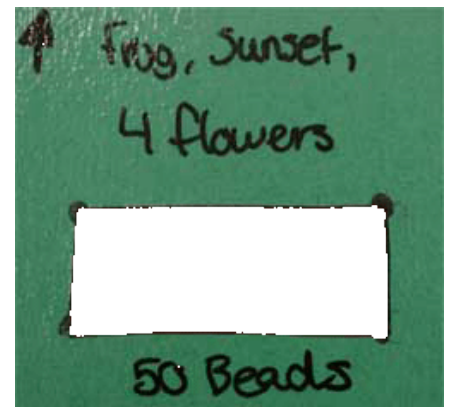
100 bead window



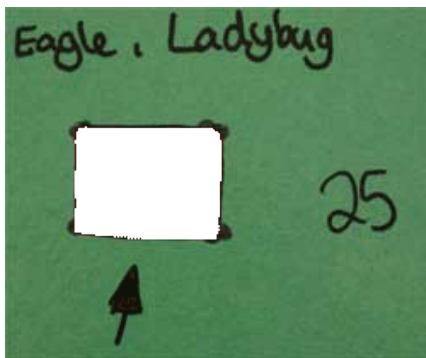
100 bead window



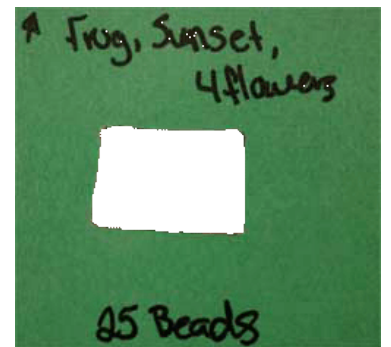
50 bead window



50 bead window



25 bead window



25 bead window

Appendix 3
Activity Sheet 1

Place the 100-bead window over the beading example so that 100 whole beads are visible. Choose a color of bead that is visible in the window.

1. How many beads are there visible given the color you chose?

Number: _____

2. What fraction of the visible beads is the color you chose?

Fraction: _____

Express the fraction as a decimal: _____

3. What percentage of the visible beads is the color you chose?

Percentage _____

Place the 50-bead window over the beading example so that 50 whole beads are visible. Choose a color of bead that is visible in the window.

1. How many beads are there visible given the color you chose?

Number: _____

2. What fraction of the visible beads is the color you chose?

Fraction: _____

Express the fraction as a decimal: _____

3. What percentage of the visible beads are the color you chose?

Percentage _____

Place the 25-bead window over the beading example so that 25 whole beads are visible. Choose a color of bead that is visible in the window.

1. How many beads are there visible given the color you chose?

Number: _____

2. What fraction of the visible beads is the color you chose?

Fraction: _____

Express the fraction as a decimal: _____

3. What percentage of the visible beads is the color you chose?

Percentage _____

Appendix 4
Activity Sheet 2

Outline a 10 by 10 region on the graph paper.

1. Using one marker or pencil crayon shade 50% of the squares in your outlined region. You may use any pattern you choose
2. Using a marker or pencil crayon of a different color shade 30% of the squares in your outline region. You may use any pattern you choose
3. Using a marker or pencil crayon of a third color shade the remaining squares. What percentage of the squares is shaded in the third color?

Percentage: _____

Outline a 10 by 5 region on the graph paper.

1. Using one marker or pencil crayon shade 30% of the squares in your outlined region. You may use any pattern you choose
2. Using a marker or pencil crayon of a different color shade 60% of the squares in your outline region. You may use any pattern you choose
3. Using a marker or pencil crayon of a third color shade the remaining squares. What percentage of the squares is shaded in the third color?

Percentage: _____

Outline a 5 by 5 region on the graph paper.

1. Using one marker or pencil crayon shade 40% of the squares in your outlined region. You may use any pattern you choose
2. Using a marker or pencil crayon of a different color shade 36% of the squares in your outline region. You may use any pattern you choose
3. Using a marker or pencil crayon of a third color shade the remaining squares. What percentage of the squares is shaded in the third color?

Percentage: _____