Subject: Mathematics	**Grade**: Four (4)	**Strand**: Number	**Duration:** 60 Minutes
Topic: Benchmarking Fractions	**Focus Question**: How do I apply fraction ideas to real life situations?		
Standard:	Use the basic operations, number relationships, patterns, number facts, calculators and appropriate software to compute and estimate in order to solve real world problems involving fractions, percentages and decimals.		
Attainment Targets:	Demonstrate an understanding of fraction ideas.		
Benchmarks:	Compute with fractional numbers quickly and accurately; use these skills to find answers in realistic problem situations.		
Materials:	Activity Sheet		

Specific Objectives

- *By the end of the lesson, students will be able to:*
  - identify fractions less than, more than or equal to half;
  - discuss the relationship between the numerator and denominator for fractions less than/more than half.

Prior Learning:

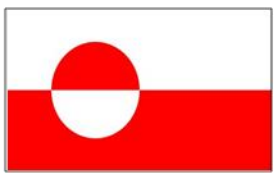
- *Students should already be able to:*
  - Name parts of a using fractions i.e. halves through tenths.
  - Identify the numerator or denominator in a fraction.
  - Identify mixed numbers.

Content Summary

- In a fraction, the denominator tells how many equal pieces the whole has been divided into and the numerator tells how many of those pieces are being considered.
- If a fraction is equal to ½, its denominator is twice the numerator;
- If a fraction is less than ½, its numerator is less than half its denominator
- If a fraction is more than ½, its numerator is more than half its denominator

Engage

Introduce students to the idea of estimating halves by having them estimate whether the red part of each flag below is approximately half, less than half or more than half.


Greenland


United Kingdom


Eritrea


Macedonia

Explore

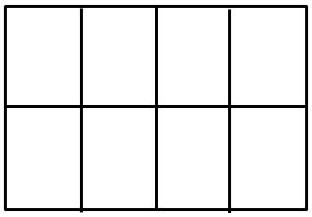
- Discuss with students how they can tell when a fraction is **more than** or **less than** or **equal to** a half:
  - Place students in groups of 4; give each group fraction tiles showing the whole, halves, fifths, eighths, ninths, tenths and twelfths.
  - Allow students to compare various fractional pieces to a half. Ask questions such as
    - How many pieces of eighths are **equal** to half?
    - How many pieces of eighths are **less** than (but close to) half?
    - How many pieces of eighths are **greater** than (but close to) half?
  - Explore other fractional pieces such as ninths, tenths and twelfths. In each case, provide fraction tiles to students who need it.

Explain

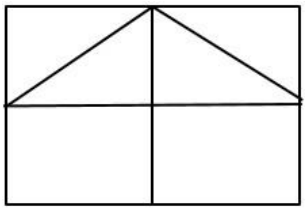
- Allow each student to write a note to a friend (or a song), explaining how they can tell when a fraction is:
  - Less than ½
  - More than ½
  - Equal to ½

Extension

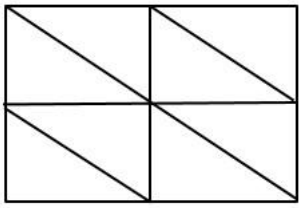
- Extend students' thinking by providing them with the following flags. Ask them to shade a design on each flag to show a fraction that is **almost half** but which is **less than/more than** half and to name the fraction that they have shaded.



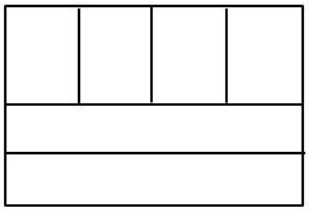
Shade a fraction more



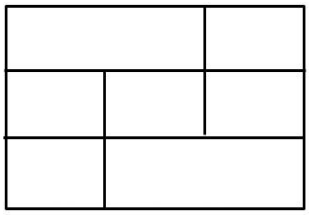
Shade a fraction less



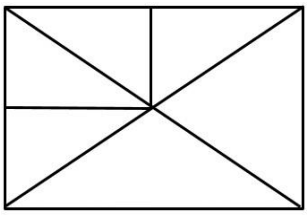
Shade a fraction more than half



Shade a fraction more



Shade a fraction less



Shade a fraction less

Evaluation

Students' Evaluation

Allow students to complete the fractions below to show:

1. fractions that are exactly **equal** to half

$\frac{7}{\square}$ $\frac{10}{\square}$ $\frac{\square}{16}$ $\frac{\square}{24}$

2. fractions that are close to but **more than** half

$\frac{7}{\square}$ $\frac{10}{\square}$ $\frac{\square}{16}$ $\frac{\square}{24}$

3. fractions that are close to but **less than** half

$\frac{7}{\square}$ $\frac{10}{\square}$ $\frac{\square}{16}$ $\frac{\square}{24}$

4. Write two fractions which are equal to half using each of the following numbers both as numerator and denominator.
   (a) 4 (b) 6 (c) 20

5. Write two fractions which are close to but greater than half using each of the following numbers both as numerator and denominator.
   (a) 6 (b) 8 (c) 11

6. Write two fractions which are close to but less than half using each of the following numbers both as numerator and denominator.
   (a) 30 (b) 13 (c) 25

Teacher Evaluation

What percentage of students able to:	**0% - 50%**	**51% - 80%**	**81% - 100%**
Identify fractions equal to half			
Identify fractions less than or more than			
Identify relationship between numerator and denominator for fractions which are less than/greater than half			
Represent fractions more than/less than and equal to a half on a driagram			

Comments:

Areas of strengths

Areas of weaknesses

Actions to be taken