Grade 4:Comparing Fractions And Decimal Tenths
Approximate Length: 1 - 60 minute lessons

Learning Goal: We want students to understand…
Represent, compare and order fractions in two different fair share scenarios
Read, represent, compare and order decimal tenths

Success Criteria:
I can represent, compare and order fractions in two different fair share scenarios involving any combinations
I can read, represent, compare and order decimal tenths, in various contexts.

Expectations:

Grade 4:

B1.5 use drawings and models to represent, compare, and order fractions representing the individual portions that result from two different fair-share scenarios involving any combination of 2, 3, 4, 5, 6, 8, and 10 sharers

B1.7 read, represent, compare, and order decimal tenths, in various contexts

Big Ideas (from Marian Small):

1. Fractions can represent parts of regions, parts of sets, parts of measures, division, or ratios. These meanings are equivalent (ex: 1/3 of a region is 1 whole divided into 3 equal parts).
2. A fraction is not meaningful without knowing what the whole is.
3. Renaming fractions is often the key to comparing them or computing with them. Every fraction can be renamed in an infinite number of ways.
4. There are multiple models and/or procedures for comparing and computing with fractions, just as with whole numbers.
5. There is usually more than one way to show a number or relationship and each of those ways might make something more obvious about that number relationship.

Source: Adapted from: *Small, M. (2013) Making Math Meaningful to Canadian Students, K-8. Nelson Education (pp.620-621)*

Diagnostic: Grade 3 2020 Curriculum Expectations
Fair share fractions
Knowledge Hook Mission: https://app.knowledgehook.com/app/Activity/5e2f99c6-325b-eb11-974f-0050568c42b6

Minds On

Source: Small, M. Open Questions for the Three Part Lesson. Grades 4-8 NumberSense and Numeration.
Open Questions:
What fractions do you find easy to model with pattern blocks? What fractions do you find less easy to model with pattern blocks?
Sample response
I think ½ is easy since it's a red block if the yellow is the whole. I also think ⅓ is easy-its blue- and ⅙ is easy-it's green. OR I think any fraction is easy since the denominator tells you how many blocks to take and the numerator tells you how many shows are one kind of block. For example, ⅖ could be 2 blue blocks and 3 red blocks since ⅖ of the blocks are blue.
Which fraction do you think does not below: 3/10, ⅜, ⅛ or ⅔? Why?

Sample Response

3/3 since it’s a whole OR ⅛ since there is no 3 OR ⅔ since it's greater than half but not a whole.

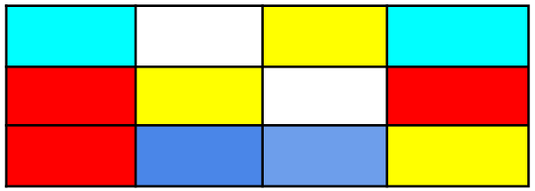
Action

Open Questions:

Design a piece of art that is ⅓ blue and ¼ yellow and uses at least two other colours. Tell what fractions the other colours are and how you know. Repeat several different ways.

Sample Response

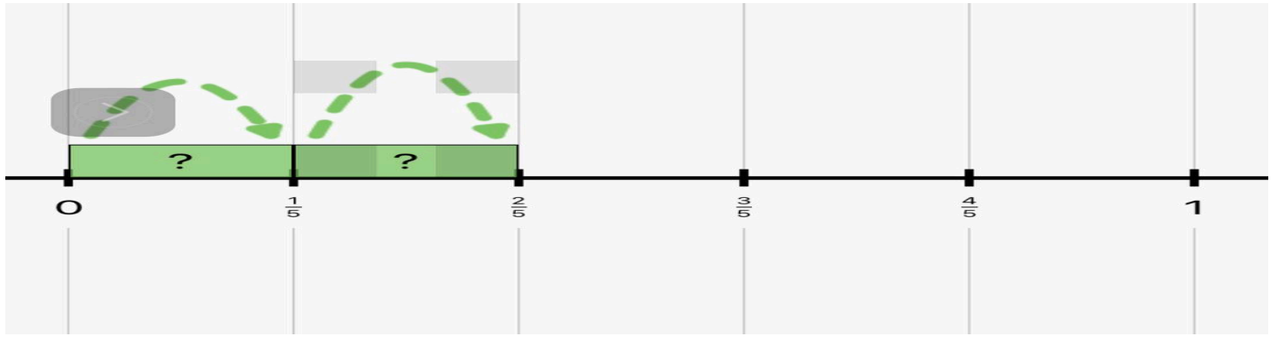
The painting is ⅛ white and ¼ red in area.



2) Choose a fraction other than ½, ⅓, or 1/4 . Create three or more representations of that fraction; at least two of the representations should be a lot alike. Tell why they are alike. Why are the other representations different from these two?

Sample response

I think that the rectangle in five parts with two coloured parts coloured. I could put two of the 10 circles on each part of the rectangle and it would look like five parts with two coloured. I think that two jumps of ⅛ on a number line look a lot different from these since the number line has 10 colours.

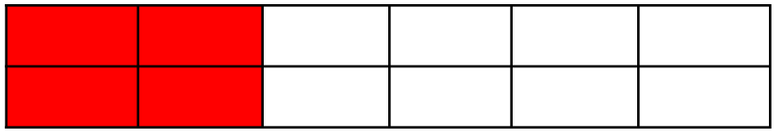


3. Choose three fractions you can show as decimal tenths. Use a diagram to show how the decimals and fractions are equal. Choose three fractions that you cannot show as decimal tenths.

Sample Response

You can use a rectangle divided into 10 sections. You can show that ½= 0.5 by colouring five of the 10 directions and show by doing this that there are equal coloured sections. You can show that 1/10 = 0.1 by colouring one section. You can show that ⅖ = 0.4 by dividing the 10 sections into five groups and colouring into two groups which is 4 sections.

⅖ = 0.4



You can't show ⅓, ⅔ or 1/7 as decimal tenths because you can't turn them into fractions with a denominator of 10.

Technology: Number Line App

Fraction Strips App

Consolidation:

Source: Small, M. Open Questions for the Three Part Lesson. Grades 4-8 NumberSense and Numeration.

Using a Fraction Strip that has fifths and tenths.

ask: Which fractions can you write as decimals. Together fill in the fraction strip with the decimals that the students can write for tenths.

Sample response

I can write fractions where the denominator is ten. For example, 1/10 is 0.1 and 2/10 is 0.2. OR I can write fractions where the denominator is ten, but I can also write fractions that are equal to tenths, like 1/2 , since it is 5/10 or like ⅘, since it's 4/10.

Other open questions:

1. A fraction and a decimal are quite close on a number line. What might the two numbers be?

Sample Response

5/10 and 0.6

2. Choose a number of the form _._. How can it be written as ___ tenths?

Sample Response

3.4= 34 tenths OR 9.0=90 tenths

Manipulatives and Tools: relational rod app, pattern blocks app

Independent Practice:

Link to independent practice tasks: https://docs.google.com/document/d/1VZdjv7hoHnw9eTOw8mJT46vmBYsFm1FkRQsp3rZlnPI/edit?usp=shari