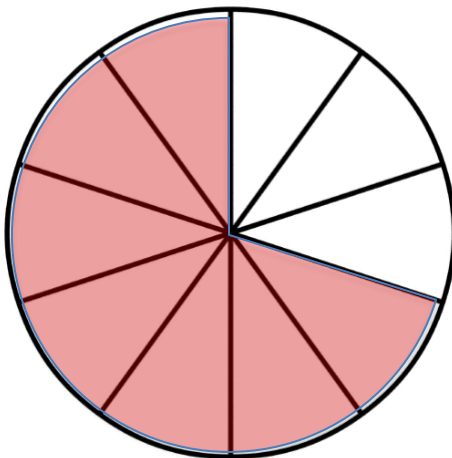
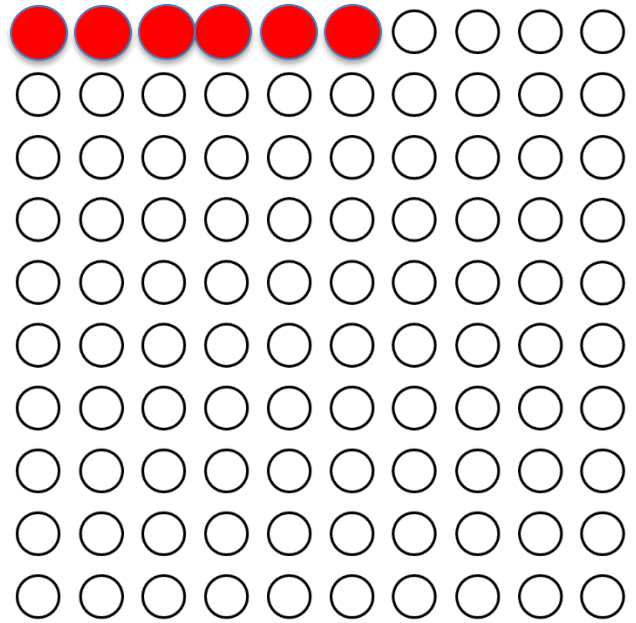
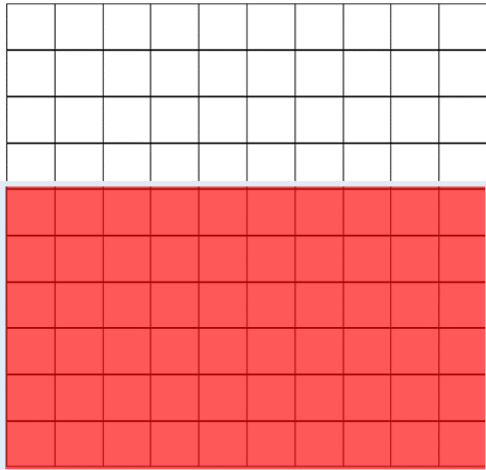
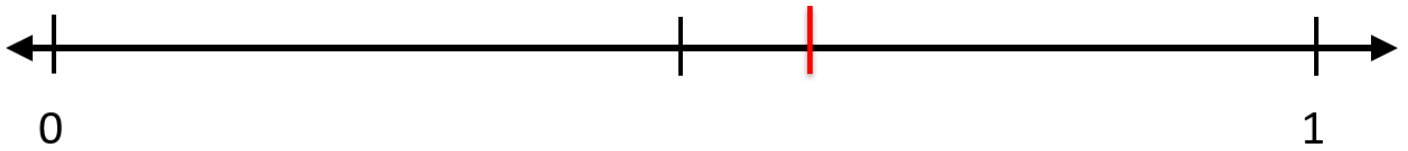


Grade 4+: Number Sense B

Collaborative Task:

Represent each of 0.6 and 0.06 in more than one way using any of the models shown below.



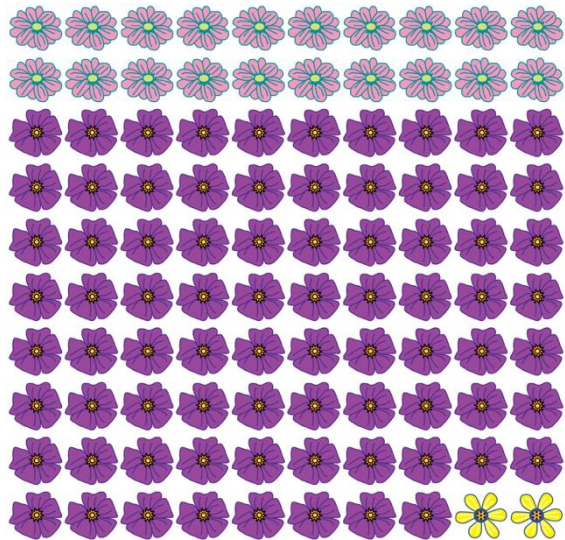
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Collaborative Task: *(teacher projects large image below), student pairs will need 1 student response sheet with questions.*

Image can also be accessed through link:

https://www.tcpres.com/filebin/PDFs/9780807753910_35.pdf

Describe how 0.2 and 0.02 are shown in this arrangement of flowers.



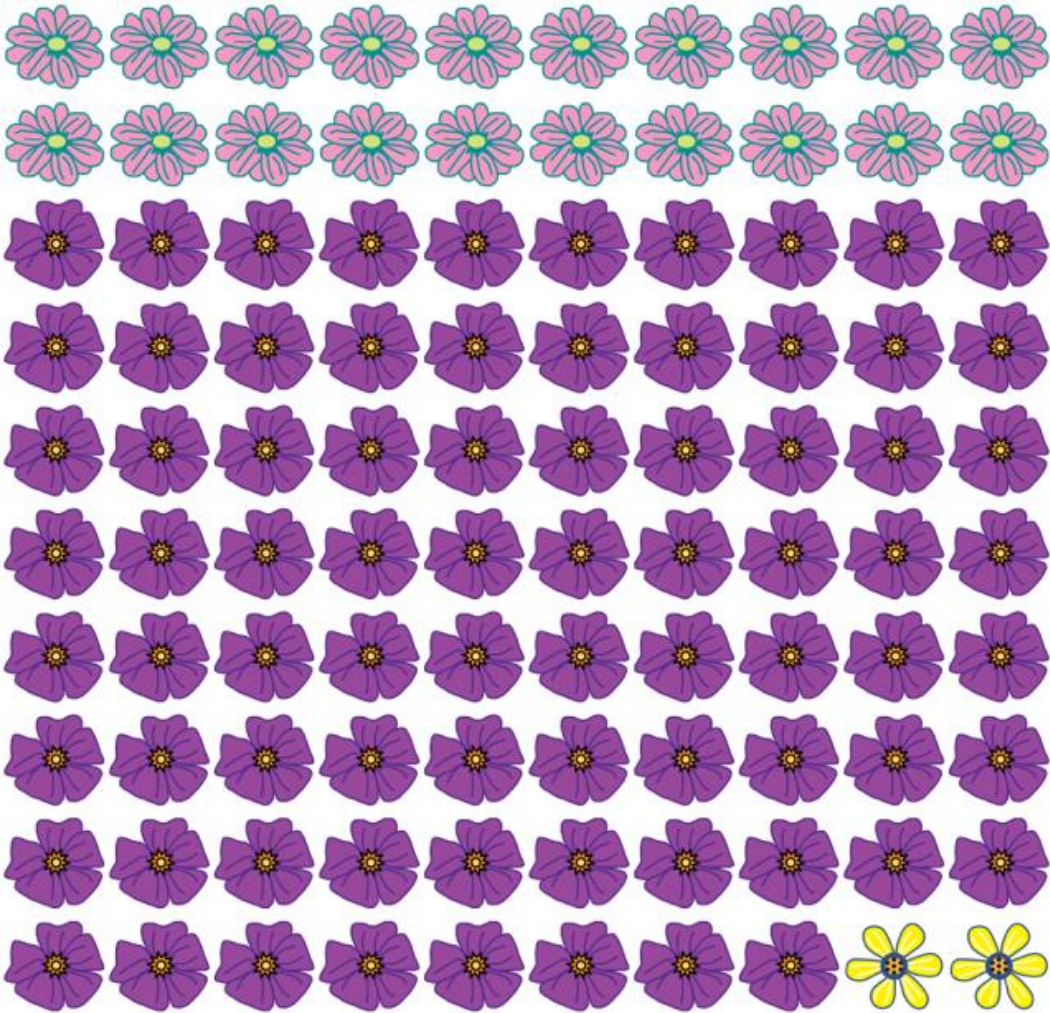
Why are there two ways to use decimals to describe the light pink flowers? *Two rows out of 10 is the same as 20 flowers out of 100., the decimal $0.2 = 0.02$*

Are there two ways to use decimals to describe the two yellow flowers? *It is not possible to write 0.02 as tenths, however 0.02 can be written as 0.020.*

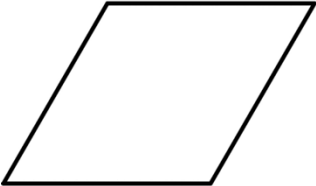
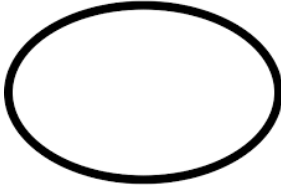

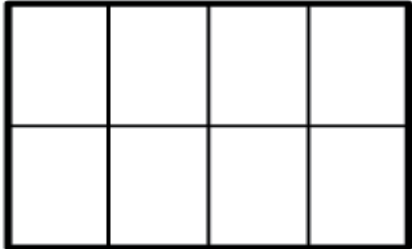
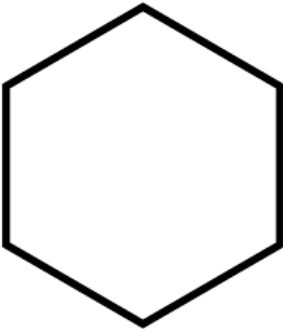
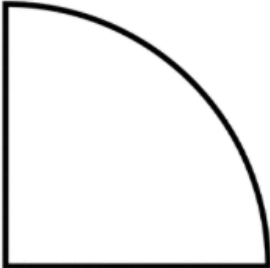

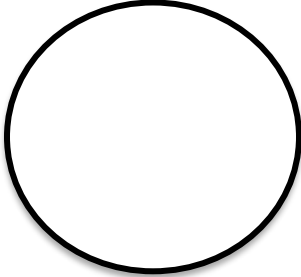
What other decimal numbers can you use to describe the flower arrangement?

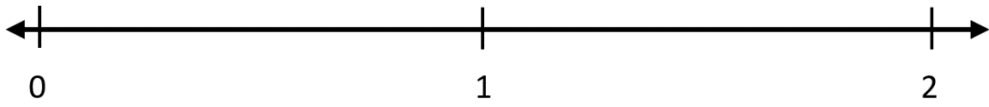


What decimals can describe parts of the picture? *0.5 and 0.05 , 0.02 Which can't? Decimal tenths or hundredths could describe the picture. Students are also likely to realize that decimals greater than 1 are unlikely to be used to describe the picture. It is possible, however, if for example, the students suggested that 2.0 could describe twice as much as half the flowers.*

Marion Small, Eyes on Math, (2013) , page 120

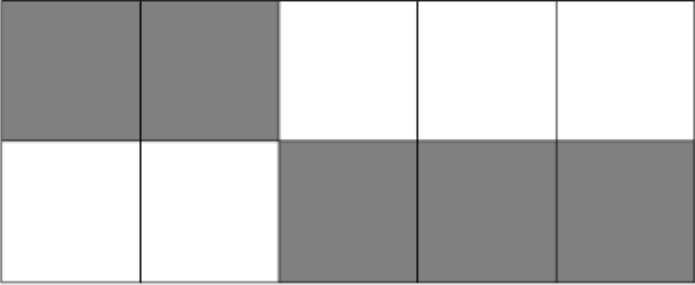


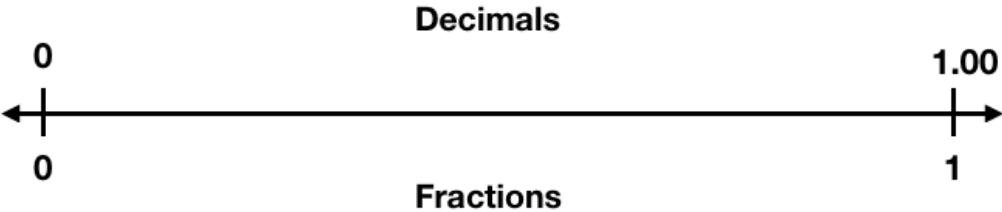
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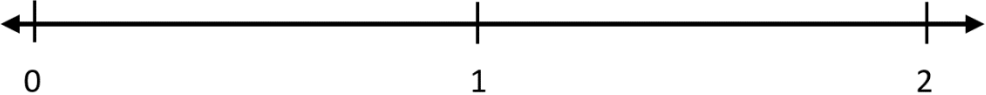
| Assessment Question | Answer Key |
|--|--|
| <p>1. Shade $\frac{3}{4}$ of each shape.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> | <p style="color: red;">Students shade three quarters of each representation.</p> <p>(the one whole bar with 8 parts invites students to represent equivalence; an extension of what would be expected)</p> |
| <p>1. Shade $\frac{1}{3}$ of each shape.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> | <p style="color: red;">Students shade one third of each shape.</p> <p>Adapted from <u>Beyond Pizzas and Pies</u>, McNamara</p> <p>The hexagon image should identify students with the most robust understanding.</p> |

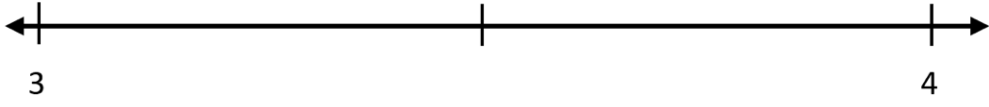
| | |
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| <p>2. Place each common fraction on the number line:</p> <p style="text-align: center;">$\frac{1}{2}$ $\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$</p> <p>Show or explain how you know.</p>  | <p><i>I know $\frac{1}{2}$ is midway between 0 and 1. $\frac{2}{4}$ and $\frac{1}{2}$ are equivalent so they are placed on the same space on the number line.</i></p> |
| <p>3. Shade $\frac{2}{5}$ of this set.</p>  | <p>The whole is considered the set of 5 shapes, each shape is $\frac{1}{5}$. Students shade two fifths of the shapes.</p> <p>The shapes are different in this set to explore student reasoning about part-whole relations.</p> |
| <p>4. How are these fractions alike and how are they different? Use pictures, number and words to show your thinking.</p> <p style="text-align: center;">$\frac{1}{2}$ $\frac{7}{8}$</p>  <p>A student might draw a bar model or number line to represent their thinking.</p> | <p>Alike: both less than one whole, both denominators are even, both numerators are odd, both are common fractions.</p> <p>Both fractions are fairly simple and easy to partition.</p> <p>Different: $\frac{7}{8}$ is close to one whole, $\frac{1}{2}$ can indicate something shared equally between 2 people.</p> <p style="text-align: center;">$\frac{7}{8} > \frac{1}{2}$</p> |
| <p>5. How do people use fractions and decimals in their daily lives? Offer one situation for fractions and another for decimals.</p> <p style="color: red;">Fractions – baking, cup measures, sharing food</p> <p style="color: red;">Decimals- money , statistics, temperature, race times</p> <p style="color: red;"><i>Fractions and decimals are numbers that represent an amount or quantity. Fractions and decimals can represent parts of a region, set, or linear model. Fractional parts and decimals are equal shares or equal-sized portions of a whole or unit.</i></p> | <p>Question is open-ended so students can make personal connections. Responses will vary.</p> |

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| <p>6. Is 0.44 closer to 0.5 or 0.4? Show your thinking.</p> <p>Representing hundredths with fractions, decimals, number line</p> | <p>0.4</p> <p>Students may use a number line, or hundred grid, base ten blocks.</p> <p>Students may share what they know about rounding.</p> |
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| <p>7. What fraction of the diagram is shaded?</p>  | <p>0.5 or $\frac{1}{2}$</p> <p>five tenths</p> <p>students may suggest 50 %</p> |
|---|--|

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| <p>8. A fraction and a decimal are quite close together on a number line. What might the two numbers be? Record your choice of one decimal and one fraction on the number line.</p>  | <p>Possible answers:</p> <p>$\frac{1}{2}$ and 0.6</p> <p>$\frac{7}{8}$ and 0.8</p> <p>$\frac{1}{4}$ and $\frac{2}{10}$</p> <p>Note <i>if</i> and <i>how</i> students use benchmarks to communicate their reasoning.</p> <p>Decimals and fractions are labels on this double number line as scaffolding.</p> |
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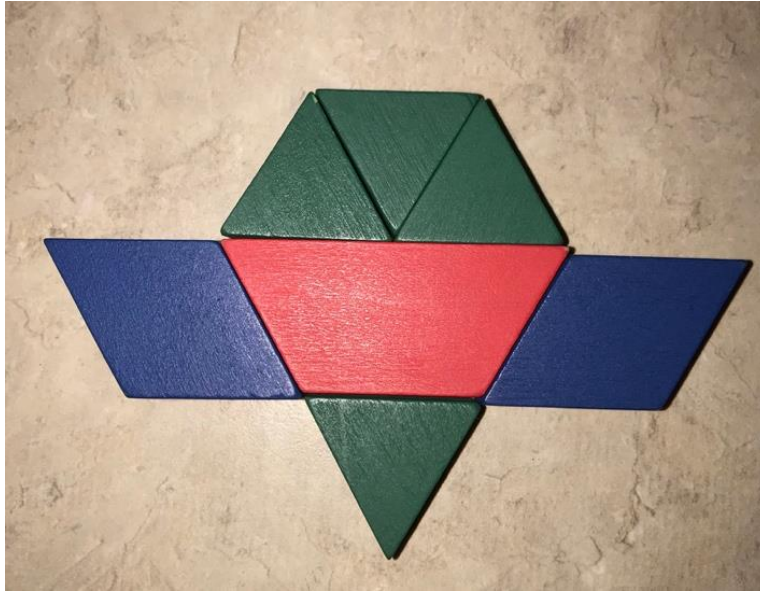
| | |
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| <p>9. Place each common fraction on the number line: $\frac{1}{3}$ $\frac{2}{3}$ $\frac{5}{6}$</p> <p>Show or explain how you know.</p>  | <p><i>I know one one-third and 2 one-thirds are equal distance on the number line. I know 5/6 is close to one whole. All these common fractions are an amount between 0 and 1. Sixths are $\frac{1}{2}$ of a third.</i></p> |
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| | |
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| <p>10. Place each decimal number on the number line: 3.5 , 3.12 , 3.4 , 3.75 Show or explain how you know.</p>  <p>A horizontal number line with arrows at both ends. There are three vertical tick marks. The leftmost tick mark is labeled '3' and the rightmost tick mark is labeled '4'. A third tick mark is located exactly halfway between 3 and 4, representing 3.5.</p> | <p>3.12, 3.4, 3.5, 3.75 Note whether students place their own benchmarks beyond the $\frac{1}{2}$ <i>I know that 3.5 is the same as $3 \frac{1}{2}$. $\frac{5}{10}$ is equal to $\frac{1}{2}$. 3 and 12 hundredths is slightly larger than 3 and one tenth.</i></p> |
| <p>11. You add two numbers and the answer is 4.1. What might the numbers be?</p> | <p><i>3.6 + 0.5 2.5 + 1.6 4 + 0.1 3 + 1.1</i></p> |

Grade 4+: Number Sense B

Performance Task:

What fractions do you see in this picture? [project photo below](#)



What fractions do you find easy to model with pattern blocks? $\frac{1}{2}$ $\frac{2}{3}$ $\frac{1}{6}$

What fractions are *not* as easy to model? $\frac{1}{4}$ $\frac{5}{8}$ $\frac{3}{10}$

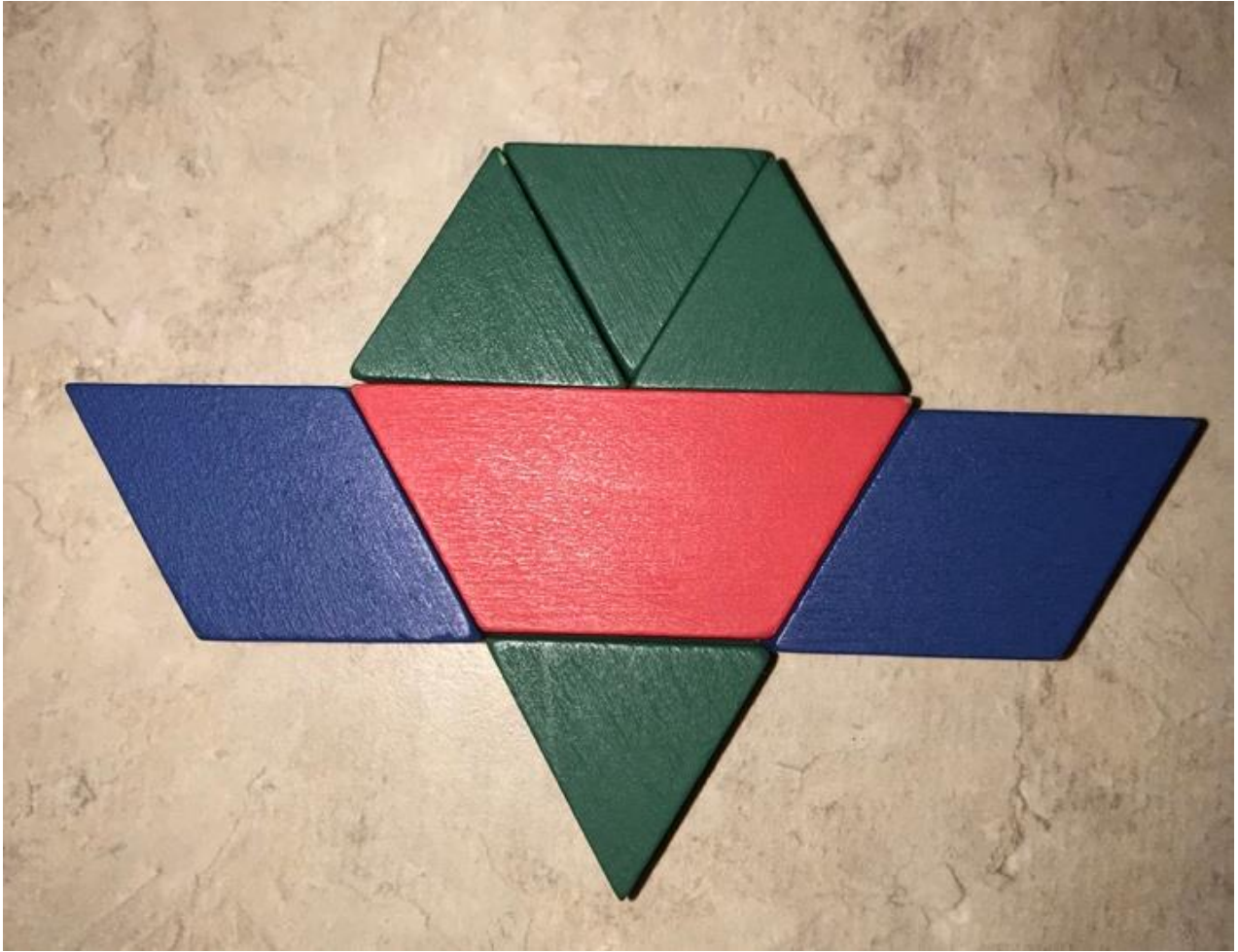
Name three fractions less than one half. How do you know they are less than one half?

One fraction less than $\frac{1}{2}$ is $\frac{1}{3}$ since if you cut a whole into three parts, these three parts are smaller than if there were two parts.

Another fraction is $\frac{3}{100}$ since it is only a small part of a whole compared to half of it.

$\frac{4}{10}$ since 4 is less than 5 and 5 is half of 10

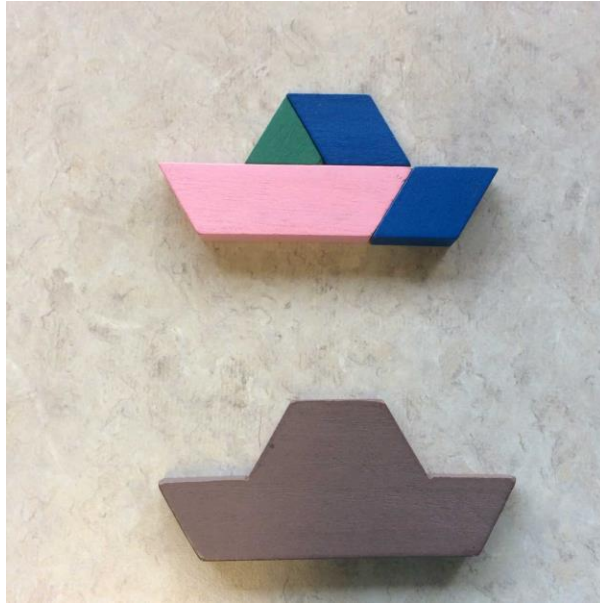
Credit Marian Small, WNCP Number Strand, page 39, 44



Island Numeracy Assessment

Grade 4+: Number Sense B

Performance Task



If the **brown block represents one whole**, name and describe the fraction parts of the coloured blocks using common fractions and decimals.

Share your reasoning using both fraction and decimal understanding.

The pink block is $\frac{1}{2}$ or $\frac{5}{10}$ of the whole.

The two blue rhombi make up 0.4 of the whole.

The green triangle in this instance is not one one-sixth but rather represents $\frac{1}{10}$ of the whole.

$\frac{1}{2}$ the coloured blocks are pink.

$\frac{4}{10}$ or $\frac{2}{5}$ of the blocks are blue.

The pink block is equivalent to the other coloured blocks.

The green triangle is one-tenth of the whole.

Deci-blocks provide an extension to decimal understanding of tenths.

