SPECIFIC LEARNER OUTCOME – Number

N7 Demonstrate an understanding of fractions by using concrete, pictorial and symbolic representations to:
- create sets of equivalent fractions
- compare fractions with like and unlike denominators.

PROCESSES
Communication (C), Connections (CN), Mental Mathematics and Estimation (ME), Problem Solving (PS), Reasoning (R), Technology (T), Visualization (V)

C, CN, PS, R, V

EVIDENCE the student has achieved the outcomes

Each student will:
- create models of equivalent fractions as part of wholes using manipulatives.
- explain the relationship between two equivalent fractions using drawings, symbols and words.
- illustrate how to find equivalent fractions given the numerator of both fractions.
- provide an example of the importance of the size of the referent whole in comparing fractions.

TEACHER NOTE
- In this assessment task, students will be asked to demonstrate their understanding of fractions as part of a whole (not as part of a set). They will use manipulatives to create models of equivalent fractions and then explain the relationship between the two fractions using drawings, symbols, and words.
- Students should have easy access to manipulatives and grid paper.
- Students must understand that the “whole” must be the same size when comparing or creating equivalent fractions. Students should also connect equivalent fractions to concepts of equal area regardless of the shape.
- Early finishers can write similar problems with equivalent fractions as part of sets.
Math Live – Equivalent Fractions: Assessment Task

There were two pans of lasagna at the school picnic. Parents were careful to cut each pan of lasagna into equal portions. Tanya had 2 portions from one pan, while Daniel took 4 portions from the other pan. They both took the same amount of lasagna. How is this possible?

1. Show how the lasagna was divided into portions so Tanya’s 2 portions are equal to Daniel’s 4 portions. Shade in the portion of lasagna eaten by each child.

What fraction of the lasagna did Tanya eat? ______________

What fraction of the lasagna did Daniel eat? ______________
2. How do you know that these two fractions are equivalent? Explain your thinking using pictures, symbols, and words.

3. Parents also bought two cakes for dessert. This time, Daniel took more cake than Tanya. Draw a picture to show how Tanya and Daniel could have each eaten 1/6 of their cakes. Justify your answer.¹
### Math Live – *Equivalent Fractions*: Scoring Guide

<table>
<thead>
<tr>
<th>Level Criteria</th>
<th>Represents equivalent fractions</th>
<th>Proves that two fractions are equivalent</th>
<th>Provides an example of the importance of the referent whole in comparing fractions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wow!</strong></td>
<td>The student draws accurate representations of the two fractions using referent wholes of the same size.</td>
<td>The student provides clear evidence of both conceptual and procedural understanding, such as reference to the relative size of the parts of the whole and finding common denominators.</td>
<td>The student provides an accurate drawing illustrating sixths of different sizes and states that the size of the referent whole is different for each cake.</td>
</tr>
<tr>
<td><strong>Yes</strong></td>
<td>The student provides clear evidence of both conceptual and procedural understanding, such as “sixths are half of thirds,” as well as procedural knowledge, such as finding common denominators.</td>
<td>The student provides some evidence of conceptual understanding, such as “sixths are half of thirds,” as well as procedural knowledge, such as finding common denominators.</td>
<td>The student provides a drawing to illustrate sixths of different sizes and simply states that one piece of cake is bigger than the other.</td>
</tr>
<tr>
<td><strong>Yes, but…</strong></td>
<td>The student draws representations of the two fractions but may not ensure that the wholes are the same size.</td>
<td>The student provides evidence of only procedural understanding, such as finding common denominators or cross-multiplying to compare the fractions.</td>
<td>The student provides a drawing to illustrate sixths of different sizes and simply states that one piece of cake is bigger than the other.</td>
</tr>
<tr>
<td><strong>No, but…</strong></td>
<td>The student draws inaccurate or confusing representations of the two fractions.</td>
<td>The student provides little evidence of understanding the relationship between equivalent fractions.</td>
<td>The student provides an inaccurate drawing of sixths of different sizes and/or a confused explanation to compare the pieces of cake.</td>
</tr>
<tr>
<td><strong>Insufficient / Blank</strong></td>
<td>No score is awarded due to insufficient evidence of student learning based on the requirements of the assessment task.</td>
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Math Live – Equivalent Fractions: Assessment Task

There were two pans of lasagna at the school picnic. Parents were careful to cut each pan of lasagna into equal portions. Tanya had 2 portions from one pan, while Daniel took 4 portions from the other pan. They both took the same amount of lasagna. How is this possible?

4. Show how the lasagna was divided into portions so Tanya’s 2 portions are equal to Daniel’s 4 portions. Shade in the portion of lasagna eaten by each child.

What fraction of the lasagna did Tanya eat? ________________

What fraction of the lasagna did Daniel eat? ________________
5. How do you know that these two fractions are equivalent? Explain your thinking using pictures, symbols, and words.

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Those fractions are equivalent because if you divide them to their lowest form they would be equal.

Ex. \(\frac{8}{12} : \frac{3}{9} = \frac{4}{6} : \frac{2}{3}\) that's the lowest form

Ex. \(\frac{16}{24} : \frac{2}{3} = \frac{8}{12} : \frac{4}{6} \frac{2}{3}\) that's the lowest form

Both of the lowest form fractions are equal.

If I were to erase every other line in #2 the pieces would be equivalent to \(\frac{1}{2}\). The wholes are the same size but cut into different size parts.

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6. Parents also bought two cakes for dessert. This time, Daniel took more cake than Tanya. Draw a picture to show how Tanya and Daniel could have each eaten \(\frac{1}{6}\) of their cakes. Justify your answer.

In my picture both of the cakes were different sizes so the pieces in Tanya's cake are smaller than Daniel's, therefore \(\frac{1}{6}\) is a smaller amount in Tanya's cake than it is in Daniel's cake.
Math Live – *Equivalent Fractions: Assessment Task*

There were two pans of lasagna at the school picnic. Parents were careful to cut each pan of lasagna into equal portions. Tanya had 2 portions from one pan, while Daniel took 4 portions from the other pan. They both took the same amount of lasagna. How is this possible?

1. Show how the lasagna was divided into portions so Tanya’s 2 portions are equal to Daniel’s 4 portions. Shade in the portion of lasagna eaten by each child.

What fraction of the lasagna did Tanya eat?  \(\frac{2}{3}\)

What fraction of the lasagna did Daniel eat?  \(\frac{4}{6}\)
2. How do you know that these two fractions are equivalent? Explain your thinking using pictures, symbols, and words.

[Diagram of fractions showing equivalence]

3. Parents also bought two cakes for dessert. This time, Daniel took more cake than Tanya. Draw a picture to show how Tanya and Daniel could have each eaten 1/6 of their cakes. Justify your answer.

[Diagram showing fraction comparison]

If the cakes were different sizes then it affects the pieces and the sixths would be different sizes.
Math Live – *Equivalent Fractions: Assessment Task*

There were two pans of lasagna at the school picnic. Parents were careful to cut each pan of lasagna into equal portions. Tanya had 2 portions from one pan, while Daniel took 4 portions from the other pan. They both took the same amount of lasagna. How is this possible?

1. Show how the lasagna was divided into portions so Tanya’s 2 portions are equal to Daniel’s 4 portions. Shade in the portion of lasagna eaten by each child.

- What fraction of the lasagna did Tanya eat?
- What fraction of the lasagna did Daniel eat?

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Tanya must have had two big portions and Daniel had 4 smaller portions, since 2 is half of 4. I made one pan 4 big portions and the other 8 smaller portions. Therefore, making 4 the same as 8/8.

What fraction of the lasagna did Tanya eat? \(\frac{2}{4}\)

What fraction of the lasagna did Daniel eat? \(\frac{4}{8}\)
2. How do you know that these two fractions are equivalent? Explain your thinking using pictures, symbols, and words.

Example #1

Daniel \( \frac{4}{8} \)

Tanya \( \frac{2}{4} \)

I know these two fractions are alike because I crossed multiplied.

\[
\frac{2 \times 2 = \frac{4}{2}}{\frac{4}{2} \div 2 = \frac{2}{1}}
\]

\( 2 \times 2 \) would equal into 4 therefore making them equivalent.

Example #2

3. Parents also bought two cakes for dessert. This time, Daniel took more cake than Tanya. Draw a picture to show how Tanya and Daniel could have each eaten 1/6 of their cakes. Justify your answer.

First cake

\( \frac{3}{11} \)- Daniel

Second cake

\( \frac{6}{12} \)- Tanya

They could both had \( \frac{1}{6} \) but Daniels piece could have been bigger or Daniels cake was cut into bigger slices than Tanya’s.
Math Live – *Equivalent Fractions: Assessment Task*

There were two pans of lasagna at the school picnic. Parents were careful to cut each pan of lasagna into equal portions. Tanya had 2 portions from one pan, while Daniel took 4 portions from the other pan. They both took the same amount of lasagna. How is this possible?

1. Show how the lasagna was divided into portions so Tanya’s 2 portions are equal to Daniel’s 4 portions. Shade in the portion of lasagna eaten by each child.

What fraction of the lasagna did Tanya eat? $\frac{1}{2}$

What fraction of the lasagna did Daniel eat? $\frac{1}{2}$
2. How do you know that these two fractions are equivalent? Explain your thinking using pictures, symbols, and words.

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They are equivalent because they are 2 apart from each other. When you \( \times 2 \times 2 \) it = 9
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3. Parents also bought two cakes for dessert. This time, Daniel took more cake than Tanya. Draw a picture to show how Tanya and Daniel could have each eaten \( \frac{1}{6} \) of their cakes. Justify your answer.

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Well Tanya only ate 1 piece out of 1/6 then Daniel only ate 5 pieces.
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