

★ Equivalent Fractions

Children use proportional reasoning to link pictorial images with abstract methods to find equivalent fractions. They look at the links between equivalent fractions to find missing numerators and denominators. They look for patterns between the numerators and denominators to support their understanding of why fractions are equivalent.

On this sheet, they will complete stem sentences according to the given pictorial representation.

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Complete the table.		
Pictorial representation	Fraction	Words
	$\frac{1}{2}$	One half is equivalent to two eighths.
	$\frac{2}{4}$	Two quarters is equivalent to four eighths.
	$\frac{4}{8}$	Four eighths is equivalent to eight eighths.
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Reasoning & Problem Solving

Equivalent Fractions

Children continue working on their understanding of equivalent fractions by answering reasoning tasks.

Equivalent Fractions		Reasoning & Problem Solving
<p>Zach has shaded a fraction.</p> <p>Esia says,</p> <p>I am thinking of an equivalent fraction to the shaded fraction where the numerator is 16.</p> <p>Is this possible? Explain why.</p>		<p>Always, Sometimes, Never?</p> <p>If a fraction is equivalent to one half, the denominator is double the numerator.</p> <p>If the denominator is divisible by 3, the fraction is equivalent to one third.</p>



Complete the table.

Pictorial representations	Fraction	Words
	$\frac{2}{3} = \frac{4}{6}$	Two thirds is equivalent to four sixths.
		_____ is equivalent to _____
		_____ is equivalent to _____
		_____ is equivalent to _____
		_____ is equivalent to _____
		_____ is equivalent to _____
		_____ is equivalent to _____
		_____ is equivalent to _____


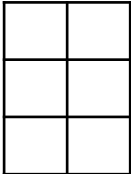
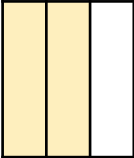
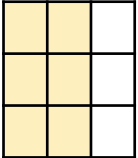
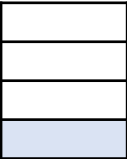
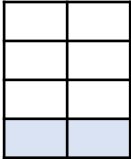

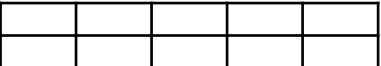
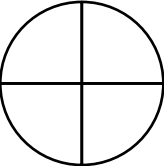
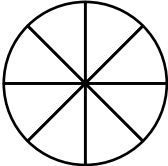
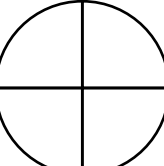
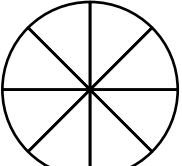
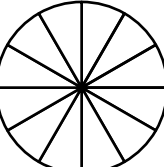
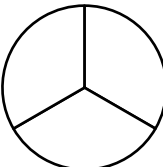
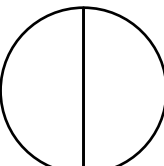
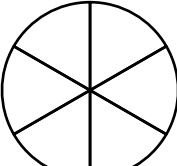


Complete the table.

Pictorial representations	Fraction	Words
	$\frac{2}{3} = \frac{4}{6}$	Two thirds is equivalent to four sixths.
	$\frac{1}{2} = \frac{2}{4}$	<u>One half</u> is equivalent to <u>two quarters.</u>
	$\frac{3}{4} = \frac{6}{8}$	<u>Three quarters</u> is equivalent to <u>six eighths.</u>
	$\frac{1}{5} = \frac{2}{10}$	<u>One fifth</u> is equivalent to <u>two tenths.</u>
	$\frac{1}{4} = \frac{2}{8}$	<u>One quarter</u> is equivalent to <u>two eighths.</u>
	$\frac{2}{4} = \frac{4}{8}$	<u>Two quarters</u> is equivalent to <u>four eighths.</u>
	$\frac{1}{2} = \frac{2}{4}$	<u>One half</u> is equivalent to <u>two quarters.</u>
	$\frac{1}{2} = \frac{3}{6}$	<u>One half</u> is equivalent to <u>three sixths.</u>


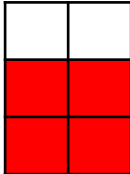
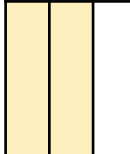
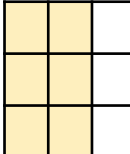
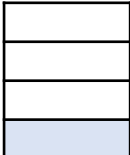
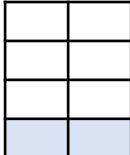


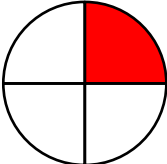
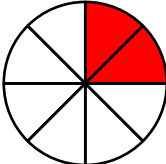
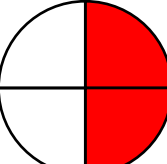
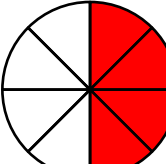
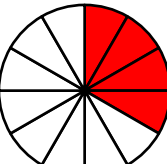
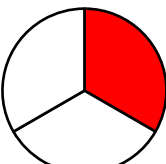
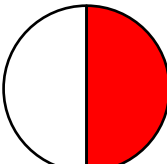
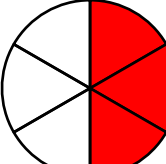


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Pictorial representations	Fraction	Words
 	$\frac{2}{3} = \frac{4}{6}$	Two thirds is equivalent to four sixths.
 		_____ is equivalent to _____
 		_____ is equivalent to _____
 	$\frac{3}{5} = \frac{6}{10}$	_____ is equivalent to _____
 	$\frac{1}{4} = \frac{2}{8}$	_____ is equivalent to _____
 		Two quarters is equivalent to four eighths.
 	$\frac{4}{12} = \frac{1}{3}$	_____ is equivalent to _____
 		One half is equivalent to three sixths.



Complete the table.

Pictorial representations	Fraction	Words
 	$\frac{2}{3} = \frac{4}{6}$	Two thirds is equivalent to four sixths.
 	$\frac{2}{3} = \frac{6}{9}$	<u>Two thirds</u> is equivalent to <u>six ninths.</u>
 	$\frac{1}{4} = \frac{2}{8}$	<u>One quarter</u> is equivalent to <u>two eighths.</u>
 	$\frac{3}{5} = \frac{6}{10}$	<u>Three fifths</u> is equivalent to <u>six tenths.</u>
 	$\frac{1}{4} = \frac{2}{8}$	<u>One quarter</u> is equivalent to <u>two eighths.</u>
 	$\frac{2}{4} = \frac{4}{8}$	Two quarters is equivalent to four eighths.
 	$\frac{4}{12} = \frac{1}{3}$	<u>Four twelfths</u> is equivalent to <u>One third.</u>
 	$\frac{1}{2} = \frac{3}{6}$	One half is equivalent to three sixths.



Complete the table.

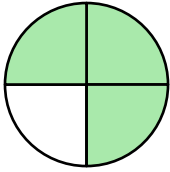
Pictorial representations	Fraction	Words
	$\frac{\boxed{}}{\boxed{}} = \frac{3}{6}$	Three sixths is equivalent to _____
	$\frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$	_____ is equivalent to _____
	$\frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$	_____ is equivalent to _____
	$\frac{4}{5} = \frac{\boxed{}}{10}$	_____ is equivalent to _____
	$\frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{8}$	_____ is equivalent to six eighths.
	$\frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$	One whole is equivalent to _____ or to _____
	$\frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$	_____ is equivalent to _____
	$\frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$	Six twelfths is equivalent to _____



Complete the table.

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	$\frac{1}{2} = \frac{3}{6}$	Three sixths is equivalent to <u>one half.</u>
	$\frac{1}{3} = \frac{4}{12}$	<u>One third</u> is equivalent to <u>four twelfths.</u>
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	$\frac{4}{5} = \frac{8}{10}$	<u>Four fifths</u> is equivalent to <u>eight tenths.</u>
	$\frac{3}{4} = \frac{6}{8}$	<u>Three quarters</u> is equivalent to six eighths.
	$\frac{4}{4} = \frac{8}{8}$	One whole is equivalent to <u>four quarters</u> or to <u>eight eighths.</u>
	$\frac{2}{3} = \frac{6}{9}$	<u>Two thirds</u> is equivalent to <u>six ninths.</u>
	$\frac{6}{12} = \frac{1}{2}$	Six twelfths is equivalent to <u>one half.</u>

Zach has shaded a fraction.



Esin says,



I am thinking of an equivalent fraction to the shaded fraction where the numerator is 16.

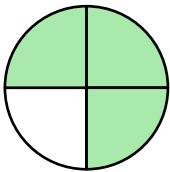
Is this possible?
Explain why.

Always, Sometimes, Never?

If a fraction is equivalent to one half, the denominator is double the numerator.

If the denominator is divisible by 3, the fraction is equivalent to one third.

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Esin says,



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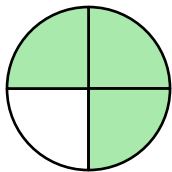
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Esin says,



I am thinking of an equivalent fraction to the shaded fraction where the numerator is 16.

Is this possible? Explain why.

This is impossible.

Esin may have mistaken the numerator for the denominator and be thinking of $\frac{12}{16}$, which is equivalent to $\frac{3}{4}$.

Always, Sometimes, Never?

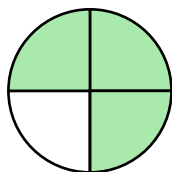
If a fraction is equivalent to one half, the denominator is double the numerator.

Always, children could also think of the numerator as being half of the denominator.

If the denominator is divisible by 3, the fraction is equivalent to one third.

Sometimes. Note that $\frac{3}{9}$ is equivalent to one third, but $\frac{3}{15}$ is not equivalent to one third.

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Esin says,



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