Equal Parts and Unit Fractions

Learn: A fraction describes equal parts of one whole. The denominator tells how many equal parts make the whole; the numerator tells how many of those parts are being considered. A unit fraction has numerator 1. The whole must be divided into equal parts before a piece can be called one fourth, one sixth, or another unit fraction.

Example: Imagine one rectangle divided into 4 equal strips. One strip is 1/4 of the rectangle. Three strips are 3/4, or three copies of 1/4. Four strips make the whole.

1. A whole is split into 6 equal pieces. What fraction is one piece?

2. How many 1/4 pieces make 3/4?

3. Draw one whole divided into 8 equal pieces and shade 3/8.

4. A rectangle is cut into four unequal pieces. Can any piece automatically be called 1/4 of the whole? Explain.

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Fractions on a Number Line

Learn: The interval from 0 to 1 can represent one whole. To show fourths, divide that interval into 4 equal lengths. The first mark is 1/4, the second is 2/4, and the third is 3/4. A fraction's numerator tells how many unit lengths to count from zero.

Example: Draw a line from 0 to 1, make four equal intervals, and label the marks 0, 1/4, 2/4, 3/4, 1. The point 3/4 is three lengths of 1/4 from zero.

1. Into how many equal intervals should 0 to 1 be divided to show sixths?

2. How many 1/6 lengths from zero reach 5/6?

3. Draw and label a number line from 0 to 1 in thirds. Mark 2/3.

4. On a number line in eighths, which comes first from zero: 3/8 or 6/8? Explain.

Equivalent Fractions and Whole Numbers

Learn: Equivalent fractions name the same amount when the whole is the same size. On a number line, equivalent fractions land at the same point. A fraction with the same numerator and denominator names one whole, provided the denominator is not zero.

Example: A whole divided into 4 equal parts reaches its end after 4 parts: 4/4 = 1. If two identical strips are divided into halves and fourths, one half covers the same length as two fourths: 1/2 = 2/4.

1. Complete 6/6 = __ whole.

2. Complete 1/2 = __/4 using equal-sized wholes.

3. Draw equal-length bars to show why 2/4 and 1/2 are equivalent.

4. Are 3/3 and 4/4 equal? Explain using a whole or number line.

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Compare Fractions of the Same Whole

Learn: When fractions describe the same whole and have the same denominator, each piece is the same size: compare how many pieces are counted. For the same numerator, more equal pieces in the whole make each piece smaller. Use a drawing or number line to justify comparisons; the wholes must be equal in size.

Example: For the same whole, 2/6 < 5/6 because two sixths are fewer than five sixths. Also 1/8 < 1/4: dividing the same whole into eight equal pieces makes each piece smaller than dividing it into four.

1. Compare 3/8 and 5/8 using <, >, or =.

2. Compare 1/3 and 1/6 for the same whole using <, >, or =.

3. Explain with a drawing why 2/4 is less than 3/4.

4. Why is the same-size whole important when comparing shaded fractions?

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Independent Fraction Check

Learn: Work independently. Draw equal-sized wholes or number lines when asked. An adult may read the directions but should not give the solutions.

Example: Use denominators 2, 3, 4, 6, and 8. Show or explain how the equal parts support at least one answer.

1. A whole is divided into 8 equal parts. What fraction is one part?

2. Draw a number line from 0 to 1 in fourths and label 3/4.

3. Complete 2/2 = __ whole.

4. Compare 1/4 and 1/8 for the same whole. Explain your choice.