Equivalent Fractions

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Equivalent Fractions are fractions that look different but have the same value or represent the same part of a whole.

Examples of Equivalent Fractions:

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$$

(All show half of a whole)

$$\frac{2}{3} = \frac{4}{6} = \frac{6}{9}$$

(All are equal in value)

Find to Equivalent Fractions

Multiply or divide both numerator and denominator by the same number

Example (Multiply):

 $\frac{1}{3} \times \frac{2}{2} = \frac{2}{6}$ (Equivalent to $\frac{1}{3}$)

Example (Divide):

 $\frac{6}{9} \div \frac{3}{3} = \frac{2}{3}$ (Equivalent to $\frac{6}{9}$)

Properties of Equivalent Fractions:

i. Equivalent fractions have the same value, even if they look different

$$\frac{3}{6} = \frac{1}{2}$$

- ii. Multiply or divide both parts (numerator and denominator) by the same number
- iii. Used to compare, simplify, and add/subtract fractions
- iv. Can be shown on a number line at the same point

 $\frac{1}{2}$, $\frac{2}{4}$, and $\frac{4}{8}$ lie at the same point

v. Simplest form of a fraction is one of its equivalent fractions

$$\frac{6}{8} = \frac{3}{4}$$
 (simplified form)

Summary:

- Equivalent fractions = Same value
- Multiply or divide numerator and denominator by same number
- Used for simplifying and comparing fractions

Example: $\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$