

MATH SKETCH NOTES

DIVIDE FRACTIONS and MIXED NUMBERS 25

Set 6

Dividing by a fraction is the same as...

...multiplying by the fraction's reciprocal.

$$X \div \frac{a}{b} = X \times \frac{b}{a}$$

STANDARD ALGORITHM

THINK I can use the relationship between reciprocals and inverse operations to divide fractions

Types of factors

Steps to solve

1 Convert all factors to fractions.

2 Keep the 1st fraction the same.

3 Change the sign ($\div$) to multiply ($\times$).

4 Flip the 2nd fraction (reciprocal).

5 Multiply across the fractions.

6 Simplify. Convert to whole or mixed #.

When one or more factors are whole numbers

$$8 \div \frac{3}{4} = \frac{8}{1} \div \frac{3}{4}$$

$$\frac{8}{1} \div \frac{3}{4}$$

$$\frac{8}{1} \times \frac{4}{3}$$

$$\frac{8}{1} \times \frac{4}{3}$$

$$\frac{8}{1} \times \frac{4}{3} = \frac{32}{3}$$

$$\frac{32}{3} = 10 \frac{2}{3}$$

When one or more factors are mixed numbers

$$2\frac{1}{5} \div \frac{5}{6} = \frac{11}{5} \div \frac{5}{6}$$

$$\frac{11}{5} \div \frac{5}{6}$$

$$\frac{11}{5} \times \frac{6}{5}$$

$$\frac{11}{5} \times \frac{6}{5}$$

$$\frac{11}{5} \times \frac{6}{5} = \frac{66}{25}$$

$$\frac{66}{25} = 2 \frac{16}{25}$$

When all the factors are in fraction form

$$\frac{8}{9} \div \frac{2}{3}$$

$$\frac{8}{9} \div \frac{2}{3}$$

$$\frac{8}{9} \times \frac{3}{2}$$

$$\frac{8}{9} \times \frac{3}{2}$$

$$\frac{8}{9} \times \frac{3}{2} = \frac{24}{18}$$

$$\frac{24}{18} = 1 \frac{6}{18} = 1 \frac{1}{3}$$



1 $\frac{6}{7} \div \frac{2}{3}$

2 $9 \div \frac{4}{5}$

3 $3\frac{3}{4} \div \frac{5}{6}$

4 $5\frac{1}{3} \div 2$

1 $\frac{6}{7} \div \frac{2}{3}$
2 $\frac{6}{7} \times \frac{3}{2}$
3 $\frac{9}{7} \times \frac{3}{2}$
4 $\frac{27}{14}$

1 $9 \div \frac{4}{5}$
2 $9 \times \frac{5}{4}$
3 $\frac{45}{4}$
4 $11 \frac{1}{4}$

1 $3\frac{3}{4} \div \frac{5}{6}$
2 $\frac{15}{4} \div \frac{5}{6}$
3 $\frac{15}{4} \times \frac{6}{5}$
4 $\frac{9}{2}$

1 $5\frac{1}{3} \div 2$
2 $\frac{16}{3} \div 2$
3 $\frac{16}{3} \times \frac{1}{2}$
4 $\frac{8}{3}$

GRADE 6

STEP-BY-STEP POWERPOINT

DIVIDE FRACTIONS and MIXED NUMBERS (25)

Dividing by a fraction is the same as multiplying by the fraction's reciprocal.

STANDARD ALGORITHM

THINK I can use the relationship between reciprocals and inverse operations to divide fractions.

When one or more factors are in mixed numbers

When all the factors are in fraction form

$1\frac{1}{5} \div \frac{5}{6} = \frac{11}{5} \div \frac{5}{6}$	$\frac{8}{5} \div \frac{2}{3} = \frac{8}{5} \times \frac{3}{2}$
$\frac{11}{5} \times \frac{6}{5} = \frac{66}{25}$	$\frac{8}{5} \times \frac{3}{2} = \frac{24}{10}$
$\frac{66}{25} = 2\frac{16}{25}$	$\frac{24}{10} = 2\frac{12}{5}$

1. $\frac{8}{1} \div \frac{4}{3} = \frac{32}{3}$

2. $\frac{32}{3} = 10\frac{2}{3}$

3. $\frac{6}{5} \div \frac{2}{3} = \frac{18}{10} = 1\frac{9}{5}$

4. $9\frac{4}{12} \div \frac{3}{4} = \frac{108}{12} \div \frac{3}{4} = \frac{108}{12} \times \frac{4}{3} = \frac{432}{36} = 12$

5. $3\frac{3}{4} \div \frac{5}{6} = \frac{27}{4} \div \frac{5}{6} = \frac{27}{4} \times \frac{6}{5} = \frac{162}{20} = 8\frac{1}{5}$

6. $5\frac{1}{2} \div 2 = \frac{11}{2} \div 2 = \frac{11}{2} \times \frac{1}{2} = \frac{11}{4} = 2\frac{3}{4}$

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DIVIDE FRACTIONS and MIXED NUMBERS 25

Dividing by a fraction is the same as... multiplying by the fraction's reciprocal.

$$X \div \frac{a}{b} = X \times \frac{b}{a}$$

STANDARD ALGORITHM

THINK I can use the relationship between reciprocals and inverse operations to divide fractions.

Types of factors

	When one or more factors are whole numbers	When one or more factors are mixed numbers	When all factors are fractions
1 Convert all factors to fractions.	$8 \div \frac{3}{4} = \frac{8}{1} \div \frac{3}{4}$	$2\frac{1}{5} \div \frac{5}{6} = \frac{11}{5} \div \frac{5}{6}$	$\frac{8}{3} \div \frac{5}{6}$
2 Keep the 1 st fraction the same.	$\frac{8}{1} \div \frac{3}{4}$	$\frac{11}{5} \div \frac{5}{6}$	$\frac{8}{3} \div \frac{5}{6}$
3 Change the sign	$\frac{8}{1} \times \frac{4}{3}$	$\frac{11}{5} \times \frac{6}{5}$	$\frac{8}{3} \times \frac{6}{5}$

Steps to solve

- 1 Convert all factors to fractions.
- 2 Keep the 1st fraction the same.
- 3 Change the sign

DIVIDE FRACTIONS and MIXED NUMBERS 25

Dividing by a fraction is the same as... multiplying by the fraction's reciprocal.

$$X \div \frac{a}{b} = X \times \frac{b}{a}$$

STANDARD ALGORITHM

THINK I can use the relationship between reciprocals and inverse operations to divide fractions.

Types of factors

	When one or more factors are whole numbers	When one or more factors are mixed numbers	When all the factors are in fraction form
1 Convert all factors to fractions	$8 \div \frac{3}{4} = \frac{8}{1} \div \frac{3}{4}$	$2\frac{1}{5} \div \frac{5}{6} = \frac{11}{5} \div \frac{5}{6}$	$\frac{8}{3} \div \frac{5}{6}$
2 Keep the 1 st fraction the same	$\frac{8}{1} \div \frac{3}{4}$	$\frac{11}{5} \div \frac{5}{6}$	$\frac{8}{3} \div \frac{5}{6}$
3 Change the sign	$\frac{8}{1} \times \frac{4}{3}$	$\frac{11}{5} \times \frac{6}{5}$	$\frac{8}{3} \times \frac{6}{5}$

Steps to solve

- 1 Convert all factors to fractions
- 2 Keep the 1st fraction the same
- 3 Change the sign

2 SIZES: STANDARD US 8.5 x 11 & COMPOSITION NOTEBOOK



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STANDARD ALGORITHM

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THINK I can use the relationship between reciprocals and inverse operations to divide fractions

Types of factors

When one or more factors are whole numbers

When one or more factors are mixed numbers

When all the factors are in fraction form

Steps to solve

- 1 Convert all factors to fractions.
- 2 Keep the 1st fraction the same
- 3 Change the $\div$ to multiply
- 4 Flip the 2nd fraction (reciprocal)
- 5 Multiply across the fractions.
- 6 Simplify. Convert to whole or mixed #.

$$8 \div \frac{3}{4} = \frac{8}{1} \div \frac{3}{4}$$

$$2\frac{1}{5} \div \frac{5}{7} = \frac{11}{5} \div \frac{5}{7}$$

$$8 \div 2$$

DETAILED ANSWER KEY

$$\frac{8}{1} \times \frac{4}{3} = \frac{32}{3}$$

$$\frac{11}{5} \times \frac{6}{5} = \frac{66}{25}$$

$$\frac{8}{9} \times \frac{3}{2} = \frac{24}{18}$$

$$\frac{32}{3} = 10\frac{2}{3}$$

$$\frac{66}{25} = 2\frac{16}{25}$$

$$\frac{24}{18} = 1\frac{6}{18} = 1\frac{1}{3}$$

$$1 \quad \frac{6}{7} \div \frac{2}{3}$$

$$2 \quad 9 \div \frac{4}{5}$$

$$3 \quad 3\frac{3}{4} \div \frac{5}{6}$$

$$4 \quad 5\frac{1}{3} \div 2$$

1 $\frac{5}{7} \div \frac{2}{3}$
 $\frac{5}{7} \times \frac{3}{2} = \frac{15}{14}$
 $\frac{15}{14} = 1\frac{1}{14}$

2 $\frac{4}{5} \times \frac{5}{4}$
 $\frac{4}{5} \times \frac{5}{4} = \frac{20}{20} = 1$

3 $\frac{3}{4} \times \frac{6}{5}$
 $\frac{3}{4} \times \frac{6}{5} = \frac{18}{20} = \frac{9}{10}$

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

5 $\frac{15}{14} \times \frac{2}{3}$
 $\frac{15}{14} \times \frac{2}{3} = \frac{30}{42} = \frac{5}{7}$

MATH SKETCH NOTES

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These 6th-grade math sketch notes (AKA doodle pages) are a powerful learning and teaching tool. They cover essential math concepts and procedures for students in a visually appealing way. You can use this resource to supplement any math curriculum, and they are perfect for previewing/pre-teaching or reviewing/reinforcing.

These sketch pages are like mini anchor charts that your students actively create and can be referred to in the future.

WHAT'S INCLUDED:

- Blank student note page
(two sizes: 8.5 x 11 & composition notebook size for INBs)
- Detailed answer key
- Step-by-step PowerPoint

GUIDED NOTE-TAKING

Guiding your students through the note-taking process is so easy and requires almost zero preparation!

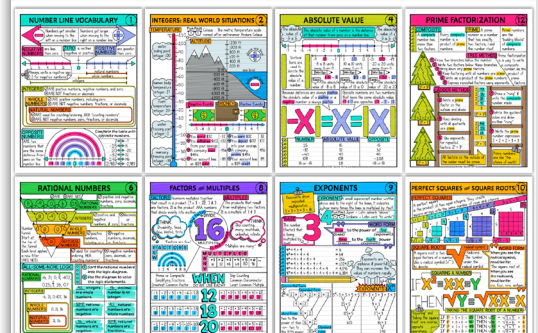
1. PowerPoint: Each sketch note page comes with a step-by-step PowerPoint that you can use to guide your students as they complete their notes.
2. Document Camera: Use a document camera to project a blank copy of the notes. Use the answer key provided to complete the note page in front of your students.

WHY SKETCH?

Sketch notes present your students with a meaningful and engaging activity they will love. Doodle note-taking activates verbal and visual modalities to capture concepts. The whole brain is absorbed in hearing, synthesizing, and retaining ideas. This high level of engagement helps students retain the content and leaves little room for distraction.

GET THE BUNDLE!!!

SIXTH GRADE MATH GUIDED SKETCH NOTES



GROWING BUNDLE