IM Featured Fraction Tasks

Grade 3–5 Progression

Alignments to Content Standards:

3.NF.A.3 | 4.NF.A.1 | 5.NF.A.1

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IM Featured Fractions Tasks

3rd Grade

Alignment to Content Standard

3.NF.A.3

Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

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3.NF Ordering Fractions

Task

Arrange the fractions in order from least to greatest. Explain your answer with a picture.

a. $\frac{1}{5}, \frac{1}{7}, \frac{1}{3}$

b. $\frac{2}{5}, \frac{2}{7}, \frac{2}{3}$

c. $\frac{5}{6}, \frac{3}{6}, \frac{1}{6}$

d. $\frac{5}{12}, \frac{8}{12}, \frac{4}{12}$

3.NF Jon and Charlie's Run

Task

Jon and Charlie plan to run together. They are arguing about how far to run. Charlie says,

I run $\frac{3}{6}$ of a mile each day.

Jon says,

I can only run $\frac{1}{2}$ of a mile.

If Charlie runs $\frac{3}{6}$ of a mile and Jon runs $\frac{1}{2}$ of a mile, explain why it is silly for them to argue. Draw a picture or a number line to support your reasoning.
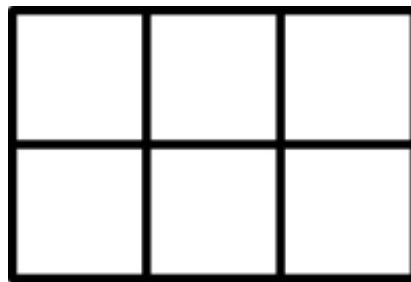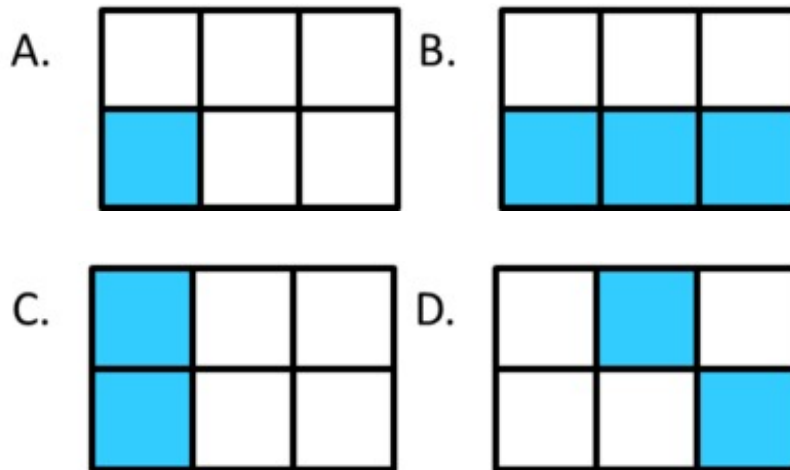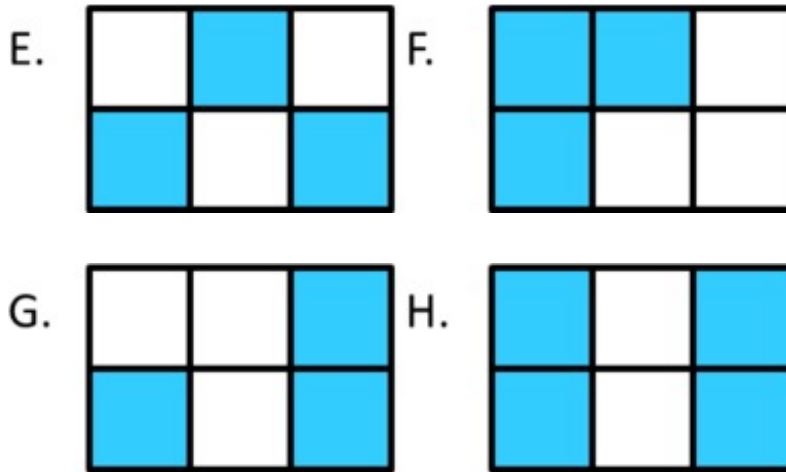
3.MD, 3.G, 3.NF Halves, thirds, and sixths

Task

a. A small square is a square unit. What is the area of this rectangle? Explain.

b. What fraction of the area of each rectangle is shaded blue? Name the fraction in as many ways as you can. Explain your answers.

E. F.

G. H.

c. Shade $\frac{1}{2}$ of the area of rectangle in a way that is different from the rectangles above.

d. Shade $\frac{2}{3}$ of the area of the rectangle in a way that is different from the rectangles above.

IM Featured Fractions Tasks

4rd Grade
Alignment to Content Standard
4.NF.A.1

Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
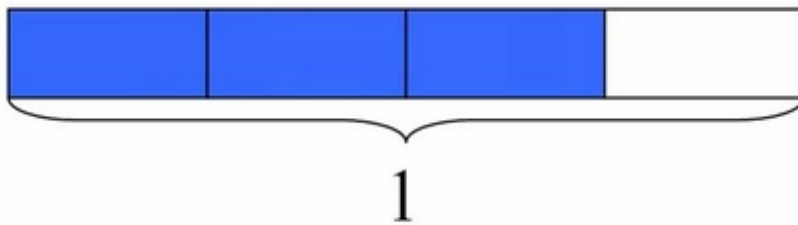
iM Illustrative Mathematics

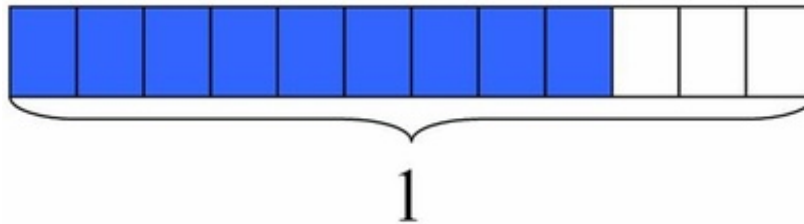*Creating a world where learners know, use, and enjoy mathematics*

4.NF Explaining Fraction Equivalence with Pictures

Task

a. The rectangle below has length 1. What fraction does the shaded part represent?

b. The rectangle below has the same length as the rectangle above. What fraction does the shaded part represent?

c. Use the pictures to explain why the two fractions represented above are equivalent.

4.NF Listing fractions in increasing size

Task

Order the following fractions from smallest to largest:

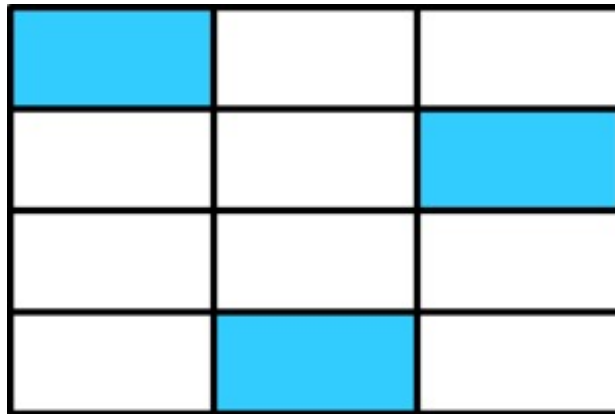$$\frac{3}{8}, \quad \frac{1}{3}, \quad \frac{5}{9}, \quad \frac{2}{5}$$

Explain your reasoning.

4.NF Fractions and Rectangles

Task

a. What fraction of the rectangle below is shaded?

b. Laura says that $\frac{1}{4}$ of the rectangle is shaded. Do you think she is correct? Explain why or why not by using the picture.

IM Featured Fractions Tasks

5th Grade
Alignment to Content Standard
5.NF.A.1

Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

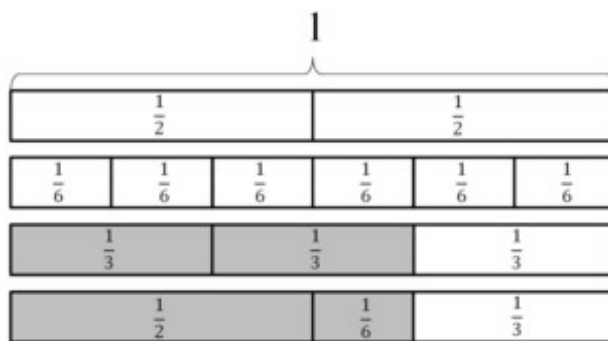# iM Illustrative Mathematics

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5.NF Egyptian Fractions

Task

Ancient Egyptians used unit fractions, such as $\frac{1}{2}$ and $\frac{1}{3}$, to represent all fractions. For example, they might write the number $\frac{2}{3}$ as $\frac{1}{2} + \frac{1}{6}$.

We often think of $\frac{2}{3}$ as $\frac{1}{3} + \frac{1}{3}$, but the ancient Egyptians would not write it this way because they didn't use the same unit fraction twice.

a. Write each of the following Egyptian fractions as a single fraction:

    i. $\frac{1}{2} + \frac{1}{3}$,

    ii. $\frac{1}{2} + \frac{1}{3} + \frac{1}{5}$,

    iii. $\frac{1}{4} + \frac{1}{5} + \frac{1}{12}$.

b. How might the ancient Egyptians have writen the fraction we write as $\frac{3}{4}$?

5.NF Mixed Numbers with Unlike Denominators

Task

Find two different ways to add these two numbers:

$$1\frac{1}{3} + 2\frac{3}{5}$$

5.NF Finding Common Denominators to Add

Task

a. To add fractions, we usually first find a common denominator.

    i. Find two different common denominators for $\frac{1}{5}$ and $\frac{1}{15}$.

    ii. Use each common denominator to find the value of $\frac{1}{5} + \frac{1}{15}$. Draw a picture that shows your solution.

b. Find $\frac{3}{4} + \frac{1}{5}$. Draw a picture that shows your solution.

c. Find $\frac{14}{8} + \frac{15}{12}$.

To view IM Commentary and Solutions, visit the IM Tasks below:

3rd Grade

Ordering Fractions

Jon and Charlie's Run

Halves, thirds, sixths

4th Grade

Explaining Fraction Equivalence with Pictures

Listing fractions in increasing size

Fractions and Rectangles

5th Grade

Egyptian Fractions

Mixed Numbers with Unlike Denominators

Finding Common Denominators to Add

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