

The **Fractions: Mixed Numbers** simulation allows students to engage with and compare multiple representations of fractions, including a mixed number.

Intro Screen

In the Intro screen, students can build their own fraction and see it represented as a pie, rectangle, cylinder, cake, or number line, and compare it to the numerator and denominator of an improper fraction and a mixed number.

VIEW different fraction representations

ADJUST the number of containers

EQUATE two forms of a fraction

$2 \frac{2}{3} = \frac{8}{3}$

INCREASE/DECREASE the numerator and denominator of an improper fraction

$\frac{8}{3}$

Mixed Number

SHOW the mixed number representation

Fractions: Mixed Numbers

Intro Game Lab

PhET

Game Screen

This Game screen can also be found in the [Build a Fraction](#) simulation.

RETURN to the level selection screen

RESET to get a new set of challenges

ADD/REMOVE containers

BUILD fractions that match the targets

PARTITION container

Level 3

$3 \frac{3}{4}$

$3 \frac{1}{4}$

$1 \frac{1}{4}$

Fractions: Mixed Numbers

Intro Game Lab

PhET

Lab Screen

The Lab screen can also be found in the [Build a Fraction](#) simulation.

The screenshot shows the PhET 'Fractions: Mixed Numbers' Lab screen. The central display shows the mixed number $2\frac{7}{8}$. Below it are four circular fraction pieces: a full red circle, a circle with 3/4 red, a circle with 1/2 red, and a circle with 1/4 red. A yellow arrow points to the top of the first circle, and a green arrow points to the bottom of the last circle. The top toolbar contains various icons for adding and removing pieces and containers. The bottom toolbar contains a numeric keypad with digits 1-8, a fraction bar, and a refresh button. The PhET logo and navigation icons are at the bottom.

REMOVE most recently added piece

ADD fractional pieces or new containers

ADD/REMOVE containers

ADD numerals or new fraction container

PARTITION container

Suggestions for Use

- Allow students to explore the Intro screen, then facilitate a discussion about the relationship between the improper fraction and mixed number forms. Use this discussion to invent a strategy for interpreting either form and converting between forms.
- Assign specific Game levels to address your learning goals.

Sample Challenge Prompts

- Play on the Intro screen. What does the top number of the fraction mean? What does the bottom number mean? In a mixed number, what does the large number mean? What do the top and bottom numbers mean?
- If you are building a fraction, where can you place the fraction pieces? Does it matter which container you put it in?
- Using the Lab screen, create multiple fractions that are equal. Challenge yourself to use differently sized pieces.

See all published activities for Fractions: Mixed Numbers [here](#).

For more tips on using PhET sims with your students, see [Tips for Using PhET](#).