

Lesson Title: Wheel of Fraction

Lesson objective: Students should be able to identify particular unit fraction models, as well as develop intuition about fraction reduction strategies.

Prerequisites:

Integer addition and multiplication

Materials

Per group:

Printed fraction circles for $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{5}$, $\frac{1}{7}$... (the prime unit fractions)

Scissors, tape or glue

10-minute timer website, and spinner website

Opening

Introduce the name of the lesson without further elaboration. Tell students we will be making our own unit fraction models. Distribute materials for each group, ensure they do not start without directions.

Directions:

“As said, we will be making fraction models. Before you all are a number of premade models. How convenient. You may simply cut these out. But we must also make the other unit fractions, like $\frac{1}{4}$ for example: How might we do that? How can we make $\frac{1}{4}$ model out of the $\frac{1}{2}$ model we have, say?

Pause for potential student suggestions. Demonstrate folding the $\frac{1}{2}$ model or let student demonstrate if they have another idea.

“So, we can make the $\frac{1}{4}$ model from folding the $\frac{1}{2}$... in half. We have $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, next is $\frac{1}{6}$. I will leave it you to decide how to make the $\frac{1}{6}$ model, but don't start yet.”

Open 10-minute timer. Tell students there is a competition.

“It is based on which group can make the largest ‘set of unique unit fractions’ (do not elaborate any further)—for each group, we will weight their score according to this size, then spin a wheel to decide who is the winner. I will start the timer now.”

Competition

Start the timer. Once it begins, go around to groups and check in to see how they are doing. Explain in more detail the specifics of the task if needed.

Wrap-up

Once the timer finishes, tell all the groups to stop.

Write each unit fraction on the board, then (going down the list) ask groups which they have created. Ask them to hold it up.

If it looks correct (and there is no disagreement among groups), write a mark for each group that obtained that fraction.

Once completed, find total number of fractions among all groups. Ask students to then compute how many they have made out of the whole group, in reduced form.

During this time, we open wheel site and set up probabilities for each team,

made no. fractions / total no. of fractions.

Show wheel to students. Ask how many rounds they think should be done. At minimum 3 to demonstrate the uncertainty.

The lesson is concluded once the winner is decided.