



Roots of Reason
rootsofreason.org

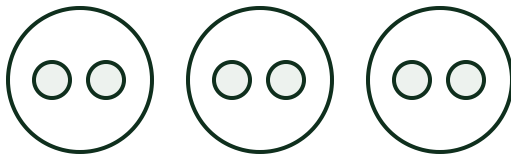
Ready for Fractions?

Stuck?
Scan for the
anchor chart



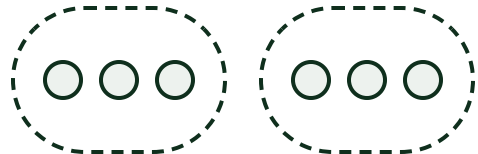
Before fractions, we check two things you already know.
If you can **draw** both, you are ready.

1 Division makes equal groups



3 equal groups

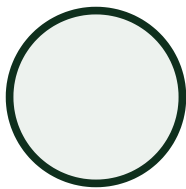
or



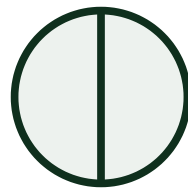
groups of 3

$6 \div 3$ says both. Two pictures, one fact.

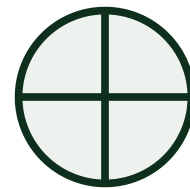
2 One whole can be cut into equal parts



one whole



2 equal parts



4 equal parts

A fraction cuts **one** thing, a sandwich, a pizza, an hour, into equal pieces.

The rule for this whole packet: *"If you can't draw it, you don't get it."* So we draw everything.

Roots of Reason

Ready for Fractions · Check 1

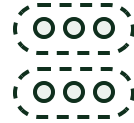
Name _____

Date _____

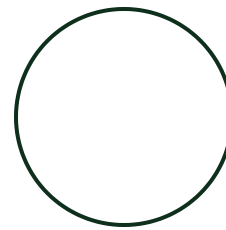
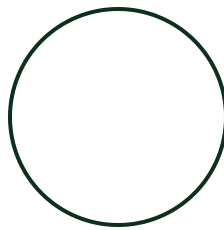
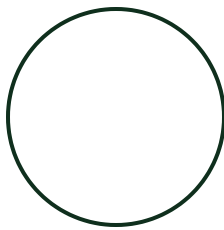
Division Two Ways


 $6 \div 3$ has **two different pictures**.

Can you draw them both?



- 1. Picture one:** split 6 buttons into **3 equal groups**. Draw the buttons inside the circles. Deal them out fairly.

Each group gets buttons.

- 2. Picture two:** take 6 buttons and make **groups of 3**. Draw a loop around every group of 3.

I made groups. Both pictures say $6 \div 3 =$

Roots of Reason

Ready for Fractions · Check 2

Name _____

Date _____

Cutting One Whole



fair

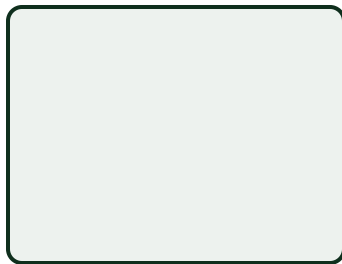
Now there is only **one** brownie. Your knife must be fair:



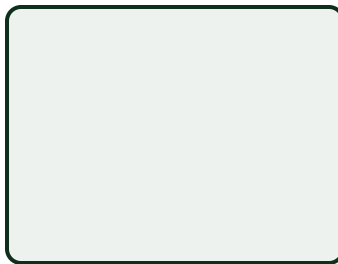
not fair

every piece exactly the same size.

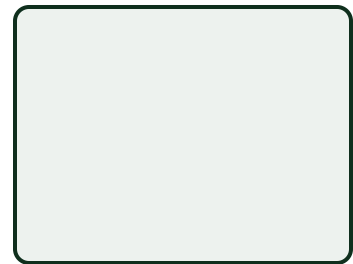
1. Draw straight lines to cut each brownie. Use a ruler if you like.



2 equal parts



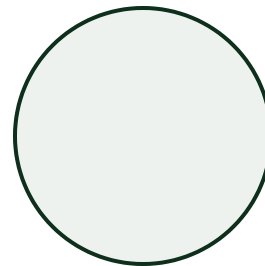
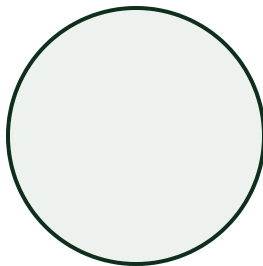
4 equal parts



3 equal parts

Check yourself: would every friend be happy with any piece?

2. Cut the pancake into **2 equal parts**. Then cut the second pancake into **4 equal parts**.



4 equal parts means each part is called one _____

Roots of Reason

Ready for Fractions · Check 2, part two

Name _____ Date _____

Equal Parts Detective

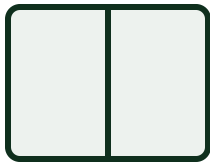


equal

Some of these cuts are fair. Some only **look** fair.Circle **equal** or **not equal** under each one.

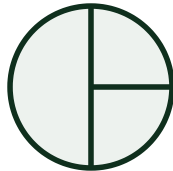
not equal

1. Look closely at the sizes of the pieces, not just how many pieces there are.



equal

not equal



equal

not equal



equal

not equal



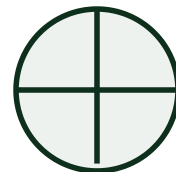
equal

not equal



equal

not equal



equal

not equal

2. **Fix the trick.** Shape C above is a circle cut into 3 pieces, but the pieces are not equal. Draw your own circle cut into **3 truly equal parts**. Hint: it looks like a peace sign, not a T.

Roots of Reason

Ready for Fractions · Putting it together

Name _____

Date _____

Sharing One Thing



equal groups

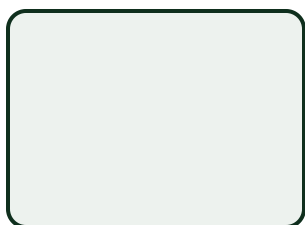
Here is the bridge: sharing 12 cookies makes equal **groups**.



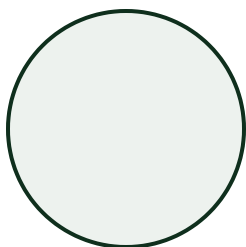
equal parts

Sharing 1 sandwich makes equal **parts**. Both are division.

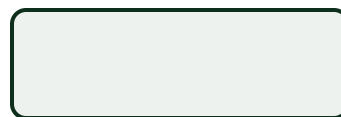
1. Draw the fair cuts. **2 friends** share 1 sandwich. **4 friends** share 1 pizza. **3 friends** share 1 granola bar.



sandwich · 2 friends



pizza · 4 friends



granola bar · 3 friends

Each friend's piece of pizza is one _____ of the whole pizza.

2. **Think about it.** Finish the sentence in your own words: "A fraction is what you get when you divide one whole into..."



Real-life photo: something cut into equal parts

Fractions live in every kitchen.



FRACTION FOUNDATIONS · SET 1 OF 4 · GRADE 3

Answer Key and Teacher Notes

Division two ways (page 2)

1. Each group gets **2** 2. **2** groups; $6 \div 3 = 2$. Task 1 is sharing into a known number of groups (partitive); task 2 is measuring out groups of a known size (quotative). Students should draw both without prompting.

Cutting one whole (page 3)

1. Any straight fair cuts count: 2 parts (1 line), 4 parts (2 lines), 3 parts (2 lines, evenly spaced) 2. Each part of the 4-cut pancake is one *fourth (quarter)*

Equal parts detective (page 4)

1. A *equal* · B *not equal* (a half and two quarters) · C *not equal* · D *not equal* · E *equal* (4 matching triangles) · F *equal* 2. Three cuts from the center, evenly spaced, like a peace sign or pie chart. Reading order: A B C on the top row, D E F on the bottom.

Sharing one thing (page 5)

1. Fair cuts as above; each pizza piece is one *fourth (quarter)* 2. Accept any version of *"equal parts"*

This set is a formative assessment, not a lesson. A student who draws both division pictures on page 2 and cuts fairly on pages 3 and 4 is ready for numerators and denominators. Watch shape C on page 4: many students, even middle schoolers, accept a circle cut into a half and two quarters as "thirds" because they count 3 pieces. Piece count is not the concept; equal size is. If pages 2 or 3 wobble, review division meanings before starting fractions.