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Mathseeds Fractions Grade 3 Student Book

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Resources

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In this book

The Mathseeds program teaches children the core maths and problem solving skills needed to be successful at school.

Each online lesson begins by introducing and modeling a mathematical concept. The child then completes a wide range of activities to practice the new skill. These activities present the content in many different ways, so children learn to use and apply each new skill in a variety of situations.

This book is designed to supplement the online program with more exercises in the core mathematical concepts. Each unit focuses on a topic within the main learning strand, presenting a series of pen and paper activities, word problems, puzzles, and games to practice their skills and understanding.

The topics in this book align with the following components of the State Standards:

3.NF.A.I Understand a fraction I/b as the quantity formed by I part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size I/b.

3.NF.A.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram.

3.NF.A.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

3.G.A.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.



a 🔨

Match.



Unit fractions

Unit fractions are I part of an equally divided shape. Unit fractions have a <u>numerator</u> of I for I part: **1** The <u>denominator</u> tells us how many parts in total: **2**







Sharing and Fractions





Fraction number lines







Compare fractions of collections (Fractions to I)

Color each fraction of the collection.

2 Write the correct symbol in the box: > or <.



Who am I?



Draw a diagram to find each answer.

- Dahlia shares a bag of 20 bouncy balls between 5 people.
 - **a** How many balls does each person get? ____
 - **b** What fraction of the collection does each person get?



Fraction bingo

Play in pairs ©©, small groups, or as a class. You need one 8-sided spinner and one 6-sided spinner (see pages 22 and 23). Each player needs a pen and a copy of page 24.

- I On the 8-sided spinner write the numbers I-8 for numerators. On the 6-sided spinner write 2, 3, 4, 5, 6, 8 for denominators.
- 2 Each player writes 9 different fractions on their sheet.
- 3 Spin both spinners to make a fraction.

If you get a fraction over I, reverse the numerator and denominator, eg $\frac{5}{2} \rightarrow \frac{2}{5}$.

4 All players look for the fraction on their grid.

If they have it, they cross it off.

5 Repeat steps 3 and 4, taking turns to make a Fraction.

The winner is the first person to cross out all their fractions and call out 'Bingo!'

Harder variations:

Include whole number fractions and fractions over I.

Add a third spinner and make mixed numbers.





Whole number fractions





Whole number diagrams



Match the Fractions.



How many wholes?



Complete this sentence using the words <u>numerator</u> and <u>denominator</u>.

To find the number of wholes in a fraction, divide the



Making whole number fractions (Fractions over I)



- Write a fraction for each number of wholes. đ
- Divide the shapes to match. b





(Fractions over I)

I Color the parts to match the fractions.

	a	$\frac{5}{3}$	b	<u>6</u> 4	\Leftrightarrow	\bigoplus	
	С	$ \begin{bmatrix} \frac{7}{2} \\ $	d	<u> 4</u> 5		\bigotimes	
	e	13 8	f	<u> </u> 6			
2	Ci	rcle the correct answer.					
 	a	In the fraction $\frac{5}{3}$, the typ	e of	Fractic	on is (thir	rds) (fifths).	
 	b	In the fraction $\frac{5}{3}$, I colore	ed in	(5) (3) pa	arts.		
3	Complete these sentences using the words <u>numerator</u> and <u>denominator</u> .						
 	a In the fraction $\frac{5}{3}$, 5 is the						
, 	b In the fraction $\frac{5}{3}$, 3 is the						
, 	In a fraction over I						
 	С	the is th	ne nu	mber of	- parts i	n one shape.	
 	d	I the is the number of colored parts.					
 	e	e the is larger than the					

Recognize fractions over I





Fraction number lines over l



Put these fractions in order on the number lines.



Compare fractions over I



Write each fraction. Color the fraction of the food you would rather eat.







Fractions • Grade 3 • Topic 2

Party problems Fractions over There are 6 party bags to fill. Share these items equally. **a** How many lollipops are there? **b** How many go in each party bag? _ c What fraction of the lollipops goes in each bag? **a** How many squares of chocolate are there? **b** How much goes in each bag? _____ pieces c What fraction of the bar goes in each bag? 3 **a** How many stickers? . ♡☆☺♡☆☺ **b** How many in each bag? $\bigcirc \bigcirc \checkmark \checkmark 2 \bigcirc \lor \checkmark \checkmark 2$ **c** What fraction of the stickers goes in each bag? **4** What is in one party bag? Share this cake between 5 8 people. Draw the lines to Draw the contents. cut along.

BIG, BIGGER, BIGGEST Shuffle all the cards and deal I card to each person. of the card if necessary.

2

3

Compare fractions games

GO LARGE

Play in pairs 🙂 🙂. You each need a pen and a copy of page 24. You also need one 8-sided spinner numbered I-8 (see page 22).

Aim of the game:

Make the largest fraction, including fractions over I.

- Each person needs 3 blank fractions for each game. I Hide your sheets from each other.
- 2 Take turns spinning a digit on the spinner.
- Decide which fraction to put the digit in and whether it will be a 3 numerator or denominator. Write the digit in a box. Once written it can't be changed.
- 4 After 6 spins you should both have 3 fractions. Compare them. You may want to draw fraction diagrams. The winner has the largest fraction.

Variation: Aim to make the smallest fraction.

Play as a class. You need 2 class sets of empty fractions (see page 24) cut into separate fraction cards.

- Make a class set of fraction cards:
 - a Give each person 2 cards.
 - b They write a fraction under I.
 - c And a fraction over I.



- Pair up and compare your fractions. Draw a diagram on the back
- If you have the smaller fraction, sit down. 4 If you have the bigger fraction, pair up with someone new.
- Keep pairing up and comparing fractions until one person is left. 5 The winner has the largest fraction.

Variation: The winner has the smallest fraction.





