Same Amount, Different Fractions

Teacher		**Class**	Year 3
Subject	Maths	**Topic**	Equivalent fractions
Date		**Room**	
Lesson length	60 minutes	**Country**	United Kingdom

Students learn that different fractions can show the same amount. They make and compare bar diagrams to find matching pairs.

Curriculum links

- recognise and show, using diagrams, equivalent fractions with small denominators

Learning objectives

- Students will recognise equivalent fractions with small denominators as the same amount.
- Students will make same-size bar models to show equivalent fraction pairs.
- Students will explain why different fractions can show the same shaded part.

Success criteria

- I can say if two fractions match by comparing shaded amounts.
- I can draw bars to show a match like 1/2 equals 2/4.
- I can explain what is the same and what is different.

What students already know

Show a bar with 1 of 2 equal parts shaded. Ask: What fraction is shaded? What if I cut each half again? Listen for 1/2 and 2 quarters.

Key words

equivalent	having the same amount or value as something else [2]
numerator	top number in a fraction that counts parts used [3]
denominator	bottom number that tells how many equal parts the full shape has [3]
bar model	long rectangle picture used to show a fraction amount [3]
whole	one full shape before it is cut into equal parts [3]

Materials

- Slides 1-12 on whiteboard
- Video clip 1 (0:00–5:00) ready on slide 6
- squared paper with two same-size rectangles per student
- colouring pencils, child-safe scissors, glue
- pre-split halves and quarters rectangles for support
- printed copies of Worksheet Task D
- partner whiteboard for listing pairs

Before the lesson

- Print Worksheet Task D for each student - Fraction bars: Shade the same amount on more parts to show equivalent fractions.
- Prepare squared paper with two same-size empty bars and pre-split halves and quarters versions for support.
- Test Video clip 1 (0:00–5:00) on slide 6 for sound and picture.

- Set out colouring pencils, child-safe scissors, glue and tidy boxes for cuttings.
- Display fraction bars for 1/2 and 2/4 side by side in the same colour.

Lesson outline

0–5 min **Starter** 5 min · Whole class

To recall halves and hook students into spotting same-amount fractions.

YOU DO

1. Show Slide 1: Same Amount, Different Slices! and read the title together.
2. Give the hook: You are going to be fraction artists — same coloured amount, totally different fractions.
3. Show Slide 2: Today we will… and read the objectives together.
4. Hold up a bar with 1/2 shaded and ask what fraction it shows.

STUDENTS DO

1. Look at the title slide and listen to the art challenge.
2. Answer what fraction shows one shaded part out of two equal parts.
3. Repeat the success steps: I can say if two fractions match.

Say: You are going to be fraction artists — same coloured amount, totally different fractions. Today we will spot fractions that show the same amount. First, tell me what you already know about halves.

Ask: This bar is cut into 2 equal parts with 1 part coloured. What fraction is that? (1/2, one half.) · If we cut each half again, how many equal parts will the same bar have? (4 equal parts, quarters.)

Check understanding: Hands up for 1/2. If unsure, point to the 2 equal parts and count the 1 coloured part together again.

Support: Keep the 1/2 bar visible and point to the 2 parts while counting: 1, 2, coloured 1. **Stretch:** Ask: If we cut into 8 equal tiny parts, how many eighths might match 1/2?

Use: Slides 1–2

5–17 min **Teaching** 12 min · Whole class

To model that equivalent fractions have the same shaded length in same-size bars.

YOU DO

1. Show Slide 3 and read: Equivalent means same amount, even if slices look different.
2. Show Slide 4 steps and draw two same-size bars, splitting one into 2 and one into 4 equal parts.
3. Colour 1/2 on one and 2/4 on the other, then line them up to show the coloured length matches.
4. Show Slide 7 to compare 1/2 and 2/4 with 1/2 and 1/4.

STUDENTS DO

1. Watch the teacher draw, split and colour the two same-size bars.
2. Chant with teacher: same coloured length means equivalent.
3. Say with a partner what is the same and what is different in 1/2 and 2/4.

Say: Equivalent means they are equal and have the same value [2]. I draw two bars the same size. I colour the same length in each. Same coloured length means equivalent!

Worked example: Draw Bar A the same size as Bar B. Split Bar A into 2 equal parts, colour 1 part to show 1/2. Split Bar B into 4 equal parts, colour 2 parts to show 2/4. Line up the bars: the coloured length is exactly the same, so 1/2 and 2/4 are equivalent [3]. For 1/2 and 1/4, the coloured lengths are different, so they are not equivalent.

Ask: Why are 1/2 and 2/4 equivalent even though the numbers are different? (Because the coloured part is the same size; they have the same value [2].) · Why are 1/2 and 1/4 not equivalent? (Because the coloured part is a different size; the amounts do not match.) · What must stay the same when we draw the two bars? (The whole bars must be the same size and length [3].)

Check understanding: Mini whiteboards: write E if 1/2 and 2/4 match, N if 1/2 and 1/4 match. Reteach lining up bars if many choose wrongly.

Support: Show the two bars side by side with shading in the same colour and give starter: The coloured part is... **Stretch:** Ask what would happen if the whole was cut into 6 equal pieces but the same amount was shaded.

Use: Slides 3–4, 7

17–25 min **Video spotter** 8 min · Whole class

To see more same-size bar pieces lining up as equivalent pairs.

YOU DO

1. Show Slide 6 and explain: See how bar pieces line up.
2. Play Video clip 1 (0:00–5:00) and pause once to point to matching shaded lengths.
3. Show Slide 10 and read the three pairs: 1/2 = 2/4, 1/3 = 2/6, 2/3 = 4/6.
4. Ask students to say which shaded sizes match and which have more parts.

STUDENTS DO

1. Watch the clip and track the shaded length with a finger in the air.
2. Call out when two different fractions cover the same length.
3. Read the three handy matches with the teacher and point to equal shaded amounts.

Say: Listen for same amount means equivalent. Watch how the bar pieces line up. Notice same shaded size, more parts. The shaded area remains the same, but each model has been divided into a different number of parts [2].

Ask: On the wall, 1/2 is equivalent to 2/4 and 3/6 [3]. How do you know? (They line up exactly and the shaded length is the same.) · Equivalent fractions look different because the whole is divided into a different number of equal parts [6]. What is same and what is different? (Same shaded size, different number of pieces.)

Check understanding: Thumbs up if 2/3 and 4/6 cover the same length. Replay the lining-up part if unsure.

Support: Limit focus to 1/2 = 2/4 only and model pointing to the end of the shaded part. **Stretch:** Challenge to spot two different matches for 2/3 on the wall picture.

Use: Slides 6, 10, Video clip 1 (0:00–5:00)

25–50 min **Main activity** 25 min · Pairs

To make area models that prove equivalent pairs cover the same amount.

YOU DO

1. Show Slide 9: Draw two same-size bars. Colour 1/2 on one and 2/4 on the other. Check with your partner: same length?
2. Hand out squared paper, colouring pencils, scissors and glue and model colouring 1 part of 2 and 2 parts of 4.
3. Model cutting and layering one bar over the other to prove the shaded area matches.
4. Give Worksheet Task D for students to shade the same amount on more parts.

STUDENTS DO

1. Colour two same-size rectangles: 1 part of 2 and 2 parts of 4 in the same colour.
2. Cut, layer and stick the models, then label 1/2 = 2/4 and check same length with partner.
3. Complete Worksheet Task D: shade the same amount on more parts to show equivalent fractions.

Say: Draw two bars the same size. Colour 1/2 on one and 2/4 on the other. Check with your partner: same length? Cut carefully and lay one shaded part over the other to prove the match.

Worked example: Rectangle 1: split into 2 equal parts, colour 1 to make 1/2. Rectangle 2, same size: split into 4 equal parts, colour 2 to make 2/4. Cut out Rectangle 1 and lay it on Rectangle 2: the coloured blue length covers exactly, so 1/2 = 2/4. Stick both models in books and label them 1/2 and 2/4 with an equals sign between.

Ask: How do you prove your two pictures match? (The coloured lengths are exactly the same when lined up.) · What is different about your two models? (One is split into 2 parts, the other into 4 parts; the number of pieces changed.)

Check understanding: Pairs hold both strips together and explain which two fractions show the same coloured length. If lengths differ, remake bars the same size together.

Support: Provide rectangles already split into halves and quarters so students focus on colouring the correct number of parts. **Stretch:** Make a third rectangle to show 3/6 or 4/8 as another twin for 1/2.

Use: Slide 9, Worksheet Task D

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50–60 min **Plenary** 10 min · Whole class

To name matches found and check who can recognise and show equivalents.

YOU DO

1. Display posters and read Slide 10 pairs: Half a bar matches two quarters, One third matches two sixths, Two thirds matches four sixths.
2. Run Slide 11 vote: Which picture helps you most to see matches? Long bars, Circles, Number line.
3. Show Slide 12 exit ticket and collect one match and one question from each student.
4. Praise clear same-size bars with equal parts and matching shading.

STUDENTS DO

1. Do a gallery walk, pointing to where shaded amounts are equal.
2. Vote for the most helpful picture and say why.
3. Write exit ticket: One match I found today was… One question I still have…

Say: Fractions are equivalent if they are of equal value [3]. Show me one match you found today. Tell me one question you still have. We will use your matches to start next time.

Ask: Which pair did you prove today and how? (1/2 = 2/4 because the coloured length is the same.) · Is 1/3 = 2/6? How do you know? (Yes, one third matches two sixths with the same shaded size.)

Check understanding: Read exit tickets for correct matches like 1/2 = 2/4. Re-model same-size bars next lesson if many name non-matching pairs.

Support: Give a frame with two empty same-size bars already drawn, so students only divide and shade.
Stretch: Add a second example on the back using a circle or number line split into small equal parts.

Use: Slides 10–12

Common mistakes

Mistake	How to spot it	How to fix it
Thinking 1/2 and 1/4 match because both have 1 on top.	Student keeps pairs with same numerator but different coloured lengths.	Line up same-size bars and compare coloured length; different size means not equivalent [3].
Changing only the top or only the bottom number to make a match.	Student writes 1/2 = 2/3 or colours 2 parts without re-splitting the whole.	Remind: whatever you do to the numerator, you must also do to the denominator [6]; you only multiply or divide, never add or subtract, to get an equivalent fraction [8].
Thinking more pieces always means a bigger amount.	Student says 2/4 must be bigger than 1/2 because 4 is bigger than 2.	Show the shaded area remains the same, but each model has been divided into a different number of parts [2].

Support

- Provide rectangles already split into halves and quarters so students focus on colouring the correct number of parts.

Stretch

- Make a third rectangle to show 3/6 or 4/8 as another twin for 1/2.

For the LSE or teaching assistant

Stay with the main activity table. Help pre-split bars, count equal parts aloud, and prompt layering to check same coloured length.

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Safety

- Use child-safe scissors, cut away from fingers, and tidy cuttings to avoid slips.

Check for understanding

Question	Answer
Are 1/2 and 2/4 equivalent? How do you know?	Yes, the coloured length is the same size in same-size bars.
Are 1/2 and 1/4 equivalent?	No, the coloured parts are different sizes.
Draw two same-size bars to show 1/3 = 2/6.	One bar split into 3 with 1 shaded, second same-size bar split into 6 with 2 shaded, same shaded length.

Homework

Draw two same-size bars at home to show one equivalent pair and label both fractions.

Sources

1. Tuesday Maths equivalent fractions decimals and percentages · slingsby.n-yorks.sch.uk · http://www.slingsby.n-yorks.sch.uk/wp-content/uploads/2021/01/Tuesday-Maths-equivalent-fractions-decimals-and-percentages.pdf
2. Equivalent fractions - KS2 Maths resources for Year 4 - BBC · bbc.co.uk · https://www.bbc.co.uk/bitesize/articles/zbqkvwx
3. How to find equivalent fractions - BBC Bitesize · bbc.co.uk · https://www.bbc.co.uk/bitesize/articles/zhbxxbk
4. Kids Math: Equivalent Fractions - Ducksters · ducksters.com · https://www.ducksters.com/kidsmath/fractions_equivalent.php
5. Flexi answers - How can you tell if a fraction is equivalent? | CK-12 Foundation · ck12.org · https://www.ck12.org/flexi/cbse-math/types-of-fractions/how-can-you-tell-if-a-fraction-is-equivalent/
6. Equivalent Fractions For Kids | Fractions With The Same Value · learnwithsitesforkids.com · https://learnwithsitesforkids.com/subjects/math/fractions/equivalent-fractions/
7. Equivalent Fractions Explained | Definition, Examples & Quiz ... · workybooks.com · https://www.workybooks.com/resources/math-vocabulary/equivalent-fractions
8. Equivalent Fractions · mathsisfun.com · https://www.mathsisfun.com/equivalent_fractions.html%7D