Reasoning and Problem Solving
Step 4: Compare Fractions

National Curriculum Objectives:

Mathematics Year 3: (3F3) Compare and order unit fractions and fractions with the same denominators
Mathematics Year 3: (3F10) Solve problems that involve the above objectives

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Explain reasons for agreeing or disagreeing with a statement. Comparing unit fractions or fractions with the same denominator. Halves, quarters and thirds only. With pictorial support.
Expected Explain reasons for agreeing or disagreeing with a statement. Comparing unit fractions or fractions with the same denominator within twelfths. Some pictorial support.
Greater Depth Explain reasons for agreeing or disagreeing with a statement. Comparing unit fractions or fractions with the same denominator within twelfths using knowledge of equivalent fractions. Some pictorial support.

Questions 2, 5 and 8 (Problem Solving)
Developing Complete the sequence. Comparing unit fractions or fractions with the same denominator. Halves, quarters and thirds only. With pictorial support.
Expected Complete the sequence. Comparing unit fractions or fractions with the same denominator within twelfths. Some pictorial support.
Greater Depth Complete the sequence. Comparing unit fractions or fractions with the same denominator within twelfths using knowledge of equivalent fractions. Some pictorial support.

Questions 3, 6 and 9 (Reasoning)
Developing Explain which fraction is incorrect. Comparing unit fractions or fractions with the same denominator. Halves, quarters and thirds only. With pictorial support.
Expected Explain which fraction is incorrect. Comparing unit fractions or fractions with the same denominator within twelfths. Some pictorial support.
**Greater Depth** Explain which fraction is incorrect. Comparing unit fractions or fractions with the same denominator within twelfths using knowledge of equivalent fractions. Some pictorial support.

More Year 3 Fractions resources.

Did you like this resource? Don't forget to review it on our website.

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Compare Fractions

Compare Fractions
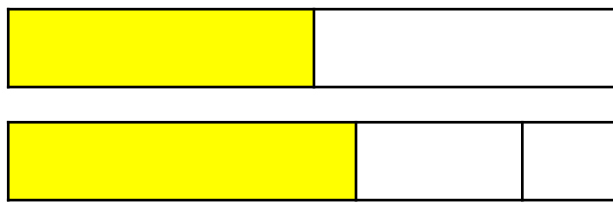
1a. Michael has used a bar model to compare two fractions.
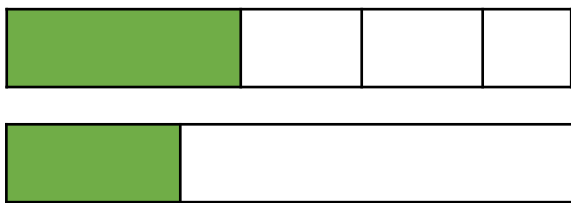
He says that one half is less than one quarter. Is he correct?
Explain your answer.

⭐D

R

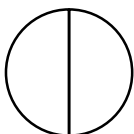**1b.** Jilani has used a bar model to compare two fractions.
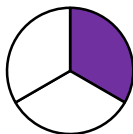
He says that one third is more than one half. Is he correct?
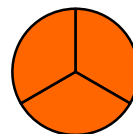Explain your answer.

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2a. Find any possible answers.

$$\frac{1}{3} < \frac{A}{2}$$

⭐D

PS

2b. Find any possible answers.

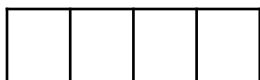$$\frac{A}{4} < \frac{3}{3}$$

⭐D
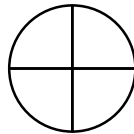
PS

3a. Jemma is sharing a cake with her friends.
She says,

> If I eat one quarter of the cake, I will have more than if I eat one half because 4 is more than 2.

Is Jemma correct? Explain your answer.
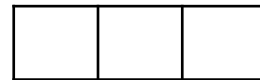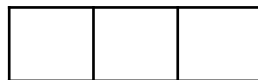Shade in the fractions above to help you.

⭐D

R

3b. Malik is sharing a chocolate bar with his friends.
He says,

> If I eat two thirds of the bun, I will have more than if I eat one third because two thirds is a smaller amount.
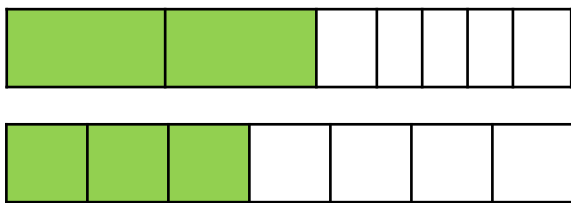
Is Malik correct? Explain your answer.
Shade in the fractions above to help you.

⭐D

R

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4a. Yasmin has used a bar model to compare two fractions.

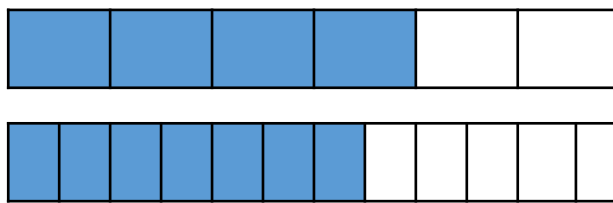She says that two sevenths are more than three sevenths. Is she correct?
Explain your answer.

4b. Simon has used a bar model to compare two fractions.

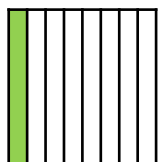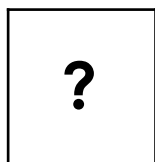He says that four twelfths are more than seven twelfths. Is he correct?
Explain your answer.

5a. Find three possible answers.

$$\boxed{1} \quad \boxed{2} \quad \boxed{4} \quad \boxed{6} \quad \boxed{8}$$

$$\frac{A}{B} > \frac{1}{8}$$

5b. Find three possible answers.

$$\boxed{1} \quad \boxed{1} \quad \boxed{2} \quad \boxed{3} \quad \boxed{8}$$

$$\frac{1}{6} < \frac{B}{C}$$
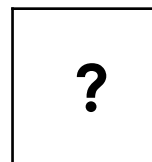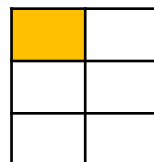
6a. Xin is sharing a chocolate bar with her friends.
She says,

> If I eat one twelfth of the chocolate, I will have less than if I eat one eighth because 12 is more than 8.

Is Xin correct? Explain your answer.
You could draw a picture to help you.

6b. Henry is sharing a cake with his friends.
He says,

> If I take two fifths of the cake, I will have more than if I eat four fifths because four is double two.

Is Henry correct? Explain your answer.
You could draw a picture to help you.

7a. Tara has used a bar model to compare two fractions.

She says that three sixths is equal to two thirds. Is she correct?
Explain your answer.

7b. Ishmael has used a bar model to compare two fractions.
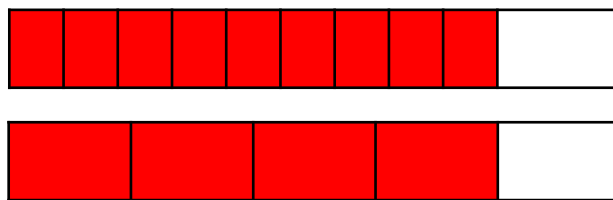
He says that nine tenths is equal to four fifths. Is he correct?
Explain your answer.

8a. Find 5 possible answers.
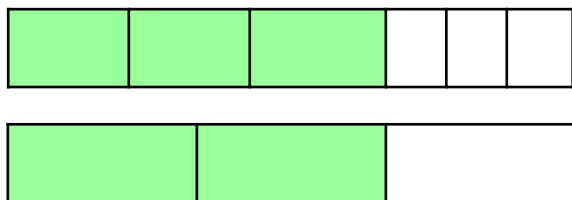
| 1 | 1 | 2 | 4 | 7 |

$$\frac{A}{B} > \frac{C}{D}$$

8b. Find 5 possible answers.

| 2 | 3 | 4 | 6 | 8 |

$$\frac{A}{B} < \frac{C}{D}$$

9a. Hillary is sharing a packet of sweets with her friends.
She says,

> If I eat four eighths of the sweets, I will have more than if I eat three quarters because 8 is more than 4.

Is Hillary correct? Explain your answer.

9b. Milo is sharing a bag of marbles with his friends.
He says,

> If I take two thirds of the marbles, I will have fewer than if I take three sixths because three sixths is equal to one third.

Is Milo correct? Explain your answer.

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Developing

1a. Michael is incorrect because the sections he has drawn are not equal. One quarter is less than one half.

2a. $\dfrac{1}{3} < \dfrac{1}{2}$

3a. Jemma is incorrect. One quarter is smaller than one half.

Developing

1b. Zelda is incorrect because the sections she has drawn are not equal. One third is less than one half.

2b. $\dfrac{1}{4} < \dfrac{3}{3}$ $\dfrac{2}{4} < \dfrac{3}{3}$ $\dfrac{3}{4} < \dfrac{3}{3}$

3b. Malik is incorrect. Two thirds is larger than one third.

Expected

4a. Yasmin is incorrect because she has not divided her bar into seven equal parts. Two sevenths are less than three sevenths.

5a. Various possible answers, for example;

$\dfrac{1}{2} > \dfrac{1}{8}$; $\dfrac{1}{4} > \dfrac{1}{8}$; $\dfrac{1}{6} > \dfrac{1}{8}$

6a. Xin is incorrect. One twelfth is smaller than one eighth. The bigger the denominator, the smaller the fraction.

Expected

4b. Simon is incorrect because he has shown four sixths instead of four twelfths. Four twelfths are less than seven twelfths.

5b. Various possible answers, for example;

$\dfrac{1}{6} < \dfrac{1}{3}$; $\dfrac{1}{6} < \dfrac{2}{3}$; $\dfrac{1}{6} < \dfrac{1}{2}$

6b. Henry is incorrect. Four fifths is larger than two fifths. The numerator shows that four is larger than two.

Greater Depth

7a. Tara is incorrect because she has not divided her bar into six equal parts. Four sixths is equal to two thirds.

8a. Various possible answers, for example;

$\dfrac{1}{2} > \dfrac{1}{7}$; $\dfrac{1}{2} > \dfrac{1}{4}$; $\dfrac{2}{4} > \dfrac{2}{7}$

$\dfrac{1}{4} > \dfrac{1}{7}$; $\dfrac{4}{7} > \dfrac{1}{2}$

9a. Hillary is incorrect. Four eighths is less than three quarters. Hillary will have more sweets if she has three quarters.

Greater Depth

7b. Ishmael is incorrect because he has not shared the bar into ten equal parts. Eight tenths is equal to four fifths.

8b. Various possible answers, for example;

$\dfrac{4}{8} < \dfrac{2}{3}$; $\dfrac{2}{4} < \dfrac{4}{6}$; $\dfrac{3}{8} < \dfrac{6}{8}$

$\dfrac{3}{6} < \dfrac{6}{8}$; $\dfrac{2}{4} < \dfrac{6}{8}$

9b. Milo is incorrect. Two thirds is equal to four sixths. This is more than three sixths and one third (which are not equal). Milo will have fewer marbles if he takes three sixths of the marbles.

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