Reasoning and Problem Solving
Step 2: Equivalent Fractions 2

National Curriculum Objectives:

Mathematics Year 3: (3F2) Recognise and show, using diagrams, equivalent fractions with small denominators
Mathematics Year 3: (3F10) Solve problems that involve all of the above

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Find and explain the mistake in a set of equivalent fraction number lines. Fractions within eighths used.
Expected Find and explain the mistake in a set of equivalent fraction number lines. Fractions within twelfths used.
Greater Depth Find and explain the mistake in a set of equivalent fraction number lines. Fractions within and beyond twelfths used.

Questions 2, 5 and 8 (Problem Solving)
Developing Find equivalent fractions with different denominators, based on a number line. Fractions within eighths used.
Expected Find equivalent fractions with different denominators, based on a number line. Fractions within twelfths used.
Greater Depth Find equivalent fractions with different denominators, based on a number line. Fractions within and beyond twelfths used.

Questions 3, 6 and 9 (Reasoning)
Developing Find and explain the odd one out from a set of objects which illustrate equivalence of a fraction given on a number line. Fractions within eighths used.
Expected Find and explain the odd one out from a set of objects which illustrate equivalence of a fraction given on a number line. Fractions within twelfths used.
Greater Depth Find and explain the odd one out from a set of objects which illustrate equivalence of a fraction given on a number line. Fractions within and beyond twelfths used.

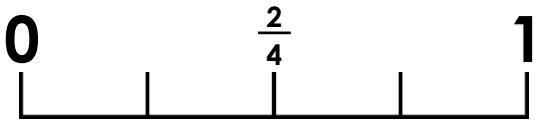
More Year 3 Fractions resources.

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

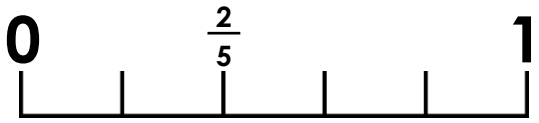
Equivalent Fractions 2

1a. Carly and Mark have made equivalent fraction lines for the halves of this bar.

Carly:



Mark:

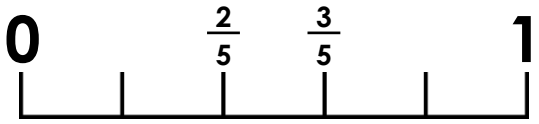


Who has made a mistake? Explain your answer.

D R

1b. Tyson and Fran have made equivalent fraction lines for the thirds of this bar.

Tyson:



Fran:

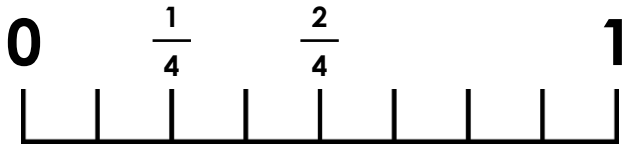
Who has made a mistake? Explain your answer.

D R

2a.

Ahmed

I have to find equivalent fractions for the fractions on my number line, but each one has to have a different denominator.



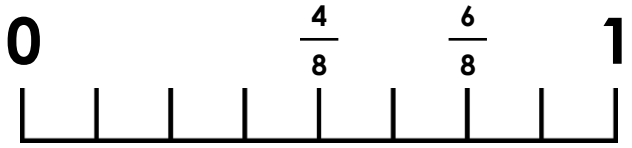
Solve Ahmed's problem by finding equivalent fractions.

D PS

2b.

Susan

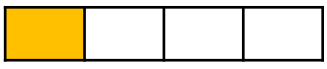
I have to find equivalent fractions for the fractions on my number line, but each one has to have a different denominator.



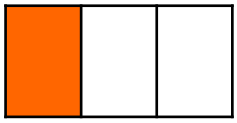
Solve Susan's problem by finding equivalent fractions.

D PS

3a. Which object does not show an equivalent fraction to the fraction on the number line? Explain your choice.



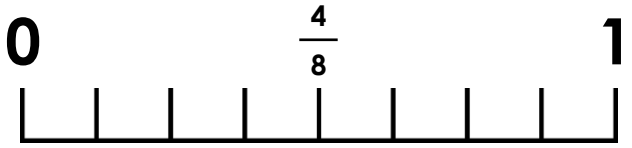
Object A



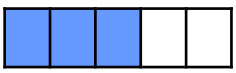
Object B

D R

3b. Which object does not show an equivalent fraction to the fraction on the number line? Explain your choice.



Object A



Object B

D R

Equivalent Fractions 2

4a. Obed and Katy have made equivalent fraction lines for the fifths of this bar.

Obed: 0, $\frac{2}{9}$, $\frac{4}{9}$, $\frac{6}{9}$, $\frac{8}{9}$, 1

Katy: 0, $\frac{2}{10}$, $\frac{4}{10}$, $\frac{6}{10}$, $\frac{8}{10}$, 1

Who has made a mistake?
Explain your answer.

E R

4b. Zara and Bam have made equivalent fraction lines for the sixths of this bar.

Zara: 0, $\frac{2}{12}$, $\frac{4}{12}$, $\frac{6}{12}$, $\frac{8}{12}$, $\frac{10}{12}$, 1

Bam: 0, $\frac{2}{11}$, $\frac{4}{11}$, $\frac{6}{11}$, $\frac{8}{11}$, $\frac{10}{11}$, 1

Who has made a mistake?
Explain your answer.

E R

5a.

Eilidh

I have to find equivalent fractions for the fractions on my number line, but each one has to have a different denominator.

0, $\frac{2}{4}$, $\frac{3}{4}$, 1

Solve Eilidh's problem by finding equivalent fractions.

E PS

5b.

Stanley

I have to find equivalent fractions for the fractions on my number line, but each one has to have a different denominator.

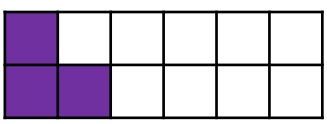
0, $\frac{2}{6}$, $\frac{3}{6}$, 1

Solve Stanley's problem by finding equivalent fractions.

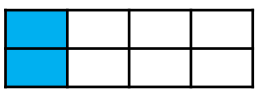
E PS

6a. Which object does not show an equivalent fraction to the fraction on the number line? Explain your choice.

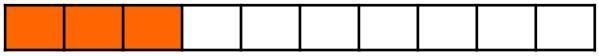
0, $\frac{1}{4}$, 1



Object A



Object B



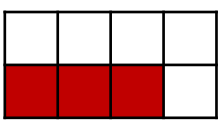
Object C

E R

6b. Which object does not show an equivalent fraction to the fraction on the number line? Explain your choice.

0, $\frac{6}{12}$, 1

Object A



Object B

Object C

E R

Equivalent Fractions 2

7a. Ryan and Pippa have made equivalent fraction lines for this bar, which is split into fourteenths.

Ryan: 0, $\frac{1}{7}$, $\frac{2}{7}$, $\frac{3}{7}$, $\frac{4}{7}$, $\frac{5}{7}$, $\frac{6}{7}$, 1

Pippa: 0, $\frac{2}{24}$, $\frac{4}{24}$, $\frac{6}{24}$, $\frac{8}{24}$, $\frac{10}{24}$, $\frac{12}{24}$, $\frac{14}{24}$, $\frac{16}{24}$, $\frac{18}{24}$, $\frac{20}{24}$, $\frac{22}{24}$, 1

Who has made a mistake?
Explain your answer.

GD R

7b. Tia and Cole have made equivalent fraction lines for this bar, which is split into sixteenths.

Tia: 0, $\frac{2}{20}$, $\frac{4}{20}$, $\frac{6}{20}$, $\frac{8}{20}$, $\frac{10}{20}$, $\frac{12}{20}$, $\frac{14}{20}$, $\frac{16}{20}$, $\frac{18}{20}$, 1

Cole: 0, $\frac{1}{8}$, $\frac{2}{8}$, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$, $\frac{6}{8}$, $\frac{7}{8}$, 1

Who has made a mistake?
Explain your answer.

GD R

8a.

Aliyah

I have to find equivalent fractions for the fractions on my number line, but each one has to have a different denominator.

0, $\frac{3}{15}$, $\frac{10}{15}$, 1

Solve Aliyah's problem by finding equivalent fractions.

GD PS

8b.

Howie

I have to find equivalent fractions for the fractions on my number line, but each one has to have a different denominator.

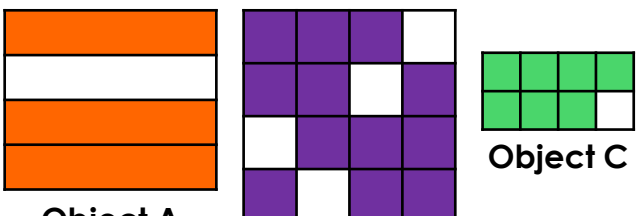
0, $\frac{1}{12}$, $\frac{8}{12}$, 1

Solve Howie's problem by finding equivalent fractions.

GD PS

9a. Which object does not show an equivalent fraction to the fraction on the number line? Explain your choice.

0, $\frac{6}{8}$, 1



Object A

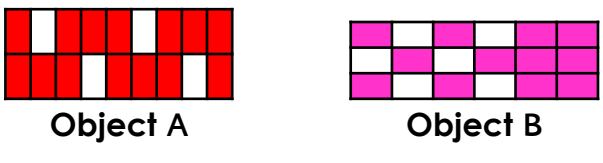
Object B

Object C

GD R

9b. Which object does not show an equivalent fraction to the fraction on the number line? Explain your choice.

0, $\frac{6}{9}$, 1



Object A

Object B

Object C

GD R

Reasoning and Problem Solving
Equivalent Fractions 2

Developing

1a. Mark has made a mistake. Two fifths is not equivalent to one half.

2a. Various possible answers, for example: $\frac{1}{4}$ as $\frac{2}{8}$ and $\frac{2}{4}$ as $\frac{1}{2}$

3a. Object A, because it shows one quarter. A denominator of 4 cannot be turned into a denominator of 9 by multiplication or division, so the fractions are not equivalent.

Expected

4a. Obed has made a mistake. His ninths are not equivalent fractions to fifths.

5a. Various possible answers, for example: $\frac{2}{4}$ as $\frac{6}{12}$ and $\frac{3}{4}$ as $\frac{6}{8}$

6a. Object C, because it shows three tenths. A denominator of 10 cannot be turned into a denominator of 4 by multiplication or division, so the fractions are not equivalent.

Greater Depth

7a. Pippa has made a mistake. She has not used fractions which are equivalent to fourteenths.

8a. Various possible answers, for example: $\frac{3}{15}$ as $\frac{1}{5}$ and $\frac{10}{15}$ as $\frac{2}{3}$

9a. Object C, because it shows seven eighths. The two fractions have the same denominator but different numerators so cannot possibly be equivalent.

Reasoning and Problem Solving
Equivalent Fractions 2

Developing

1b. Tyson has made a mistake. Two fifths and three fifths are not equivalent to one third and two thirds.

2b. Various possible answers, for example: $\frac{4}{8}$ as $\frac{1}{2}$ and $\frac{6}{8}$ as $\frac{3}{4}$

3b. Object B, because it shows three fifths. A denominator of 5 cannot be turned into a denominator of 8 by multiplication or division, so the fractions are not equivalent.

Expected

4b. Bam has made a mistake. His elevenths are not equivalent fractions to sixths.

5b. Various possible answers, for example: $\frac{2}{6}$ as $\frac{3}{9}$ and $\frac{3}{6}$ as $\frac{6}{12}$

6b. Object B, because it shows three eighths which is not equivalent to the fraction shown on the number line.

Greater Depth

7b. Tia has made a mistake. She has not used fractions which are equivalent to sixteenths.

8b. Various possible answers, for example: $\frac{1}{12}$ as $\frac{2}{24}$ and $\frac{8}{12}$ as $\frac{4}{6}$

9b. Object A, because it shows fourteen eighteenths which is equivalent to $\frac{7}{9}$, not $\frac{6}{9}$.