

Varied Fluency

Step 20: Using Fractions as Operators

National Curriculum Objectives:

Mathematics Year 5: (5C8c) [Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates](#)

Differentiation:

Developing Questions to support using fractions as operators. Includes unit fractions.

Expected Questions to support using fractions as operators. Includes non-unit fractions in their simplest form.

Greater Depth Questions to support using fractions as operators. Questions include non-unit fractions and improper fractions.

More [Year 5 Fractions](#) resources.

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Using Fractions as Operators

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1a. Tick the correct statement(s).

A. $\frac{1}{4}$ of 8 = $8 \times \frac{1}{4}$ ☐

B. $\frac{1}{3}$ of 6 = $3 \times \frac{1}{6}$ ☐

C. $\frac{1}{5}$ of 10 = $10 \times \frac{1}{5}$ ☐



VF

1b. Tick the correct statement(s).

A. $\frac{1}{2}$ of 6 = $2 \times \frac{1}{6}$ ☐

B. $\frac{1}{6}$ of 12 = $12 \times \frac{1}{6}$ ☐

C. $\frac{1}{3}$ of 9 = $3 \times \frac{1}{9}$ ☐



VF

2a. Circle the calculations and amounts which are equal.

$3 \times \frac{1}{9}$ 3

$9 \times \frac{1}{3}$

$\frac{1}{3}$ of 9 9



VF

2b. Circle the calculations and amounts which are equal.

$\frac{1}{12}$ of 4 4

$12 \times \frac{1}{4}$

$\frac{1}{4}$ of 12 3



VF

3a. Use the digit cards to fill in the missing numbers.

A. $\frac{1}{2}$ of 4 = so $\times \frac{1}{2} = 2$

B. $\frac{1}{5}$ of = 3 so $15 \times \frac{1}{5} =$



VF

3b. Use the digit cards to fill in the missing numbers.

A. $\frac{1}{2}$ of 8 = so $\times \frac{1}{2} = 4$

B. $\times \frac{1}{3} = 2$ so $\frac{1}{3}$ of 6 =



VF

4a. Circle the calculations which have an answer of 4.

$4 \times \frac{1}{8}$ $\frac{1}{2}$ of 8

$\frac{1}{8}$ of 4 $8 \times \frac{1}{2}$



VF

4b. Circle the calculations which have an answer of 5.

$10 \times \frac{1}{2}$ $\frac{1}{2}$ of 10

$\frac{1}{5}$ of 10 $10 \times \frac{1}{5}$



VF

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5a. Tick the correct statement(s).

A. $\frac{2}{5}$ of 10 = $10 \times \frac{2}{5}$ ☐

B. $\frac{3}{4}$ of 8 = $8 \times \frac{3}{4}$ ☐

C. $\frac{2}{3}$ of 6 = $3 \times \frac{2}{3}$ ☐



VF

5b. Tick the correct statement(s).

A. $\frac{5}{6}$ of 12 = $12 \times \frac{5}{6}$ ☐

B. $\frac{3}{5}$ of 15 = $3 \times \frac{3}{5}$ ☐

C. $\frac{3}{8}$ of 16 = $16 \times \frac{3}{8}$ ☐



VF

6a. Circle the calculations and amounts which are equal.

$5 \times \frac{5}{12}$ 60 $12 \times \frac{5}{6}$

$\frac{5}{6}$ of 12 10 $\frac{5}{12}$ of 6



VF

6b. Circle the calculations and amounts which are equal.

$\frac{3}{10}$ of 10 8 $10 \times \frac{4}{5}$

$\frac{4}{5}$ of 10 4 $4 \times \frac{3}{10}$



VF

7a. Use the digit cards to fill in the missing numbers.

A. $\frac{3}{5}$ of 20 = so $\times \frac{3}{5} = 12$

B. $21 \times \frac{3}{7} =$ so $\frac{3}{7}$ of = 9



VF

7b. Use the digit cards to fill in the missing numbers.

A. $\times \frac{3}{4} = 9$ so $\frac{3}{4}$ of 12 =

B. $\frac{4}{9}$ of 18 = so $\times \frac{4}{9} = 8$



VF

8a. Circle the calculations which have an answer of 10.

$15 \times \frac{4}{5}$ $\frac{2}{5}$ of 25

$\frac{4}{5}$ of 15 $25 \times \frac{2}{5}$



VF

8b. Circle the calculations which have an answer of 12.

$14 \times \frac{6}{7}$ $\frac{6}{7}$ of 14

$\frac{3}{4}$ of 20 $20 \times \frac{3}{4}$



VF

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9a. Tick the correct statement(s).

A. $\frac{4}{5}$ of 30 = 30 x $\frac{4}{5}$ ☐

B. $\frac{4}{3}$ of 6 = 6 x $\frac{3}{4}$ ☐

C. $\frac{6}{4}$ of 8 = 8 x $\frac{6}{4}$ ☐



VF

9b. Tick the correct statement(s).

A. $\frac{2}{3}$ of 18 = 18 x $\frac{3}{2}$ ☐

B. $\frac{6}{5}$ of 25 = 25 x $\frac{6}{5}$ ☐

C. $\frac{5}{4}$ of 12 = 12 x $\frac{5}{4}$ ☐



VF

10a. Circle the calculations and amounts which are equal.

$12 \times \frac{3}{2}$ 12 $2 \times \frac{3}{12}$

$\frac{2}{3}$ of 12 18 $\frac{3}{2}$ of 12



VF

10b. Circle the calculations and amounts which are equal.

$\frac{3}{9}$ of 5 18 $9 \times \frac{5}{3}$

$\frac{5}{3}$ of 9 15 $9 \times \frac{3}{5}$



VF

11a. Use the digit cards to fill in the missing numbers.

A. $\frac{6}{5}$ of 10 = so x $\frac{6}{5}$ = 12

B. $8 \times \frac{7}{4}$ = so $\frac{7}{4}$ of = 14

14 12 10 8



VF

11b. Use the digit cards to fill in the missing numbers.

A. x $\frac{5}{2}$ = 30 so $\frac{5}{2}$ of 12 =

B. $\frac{4}{3}$ of 15 = so x $\frac{4}{3}$ = 20

12 15 20 30



VF

12a. Circle the calculations which have an answer of 14.

$12 \times \frac{7}{6}$ $\frac{6}{7}$ of 12

$\frac{7}{6}$ of 12 $12 \times \frac{6}{7}$



VF

12b. Circle the calculations which have an answer of 21.

$12 \times \frac{4}{7}$ $\frac{7}{4}$ of 12

$\frac{4}{7}$ of 12 $12 \times \frac{7}{4}$



VF

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Using Fractions as Operators

Developing

- 1a. **A and C are correct.**
2a. **$9 \times \frac{1}{3}$, $\frac{1}{3}$ of 9 and 3 are equal.**
3a. **A. 2, 4; B. 15, 3**
4a. **$8 \times \frac{1}{2}$, $\frac{1}{2}$ of 8**

Expected

- 5a. **A and B are correct.**
6a. **$12 \times \frac{5}{6}$, $\frac{5}{6}$ of 12 and 10 are equal.**
7a. **A. 12, 20; B. 9, 21**
8a. **$25 \times \frac{2}{5}$, $\frac{2}{5}$ of 25**

Greater Depth

- 9a. **A and C are correct.**
10a. **$12 \times \frac{3}{2}$, $\frac{3}{2}$ of 12 and 18 are equal.**
11a. **A. 12, 10; B. 14, 8**
12a. **$12 \times \frac{7}{6}$, $\frac{7}{6}$ of 12**

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Using Fractions as Operators

Developing

- 1b. **B is correct.**
2b. **$12 \times \frac{1}{4}$, $\frac{1}{4}$ of 12 and 3 are equal.**
3b. **A. 4, 8; B. 6, 2**
4b. **$10 \times \frac{1}{2}$, $\frac{1}{2}$ of 10**

Expected

- 5b. **A and C are correct.**
6b. **$10 \times \frac{4}{5}$, $\frac{4}{5}$ of 10 and 8 are equal.**
7b. **A. 12, 9; B. 8, 18**
8b. **$14 \times \frac{6}{7}$, $\frac{6}{7}$ of 14**

Greater Depth

- 9b. **B and C are correct.**
10b. **$9 \times \frac{5}{3}$, $\frac{5}{3}$ of 9 and 15 are equal.**
11b. **A. 12, 30; B. 20, 15**
12b. **$12 \times \frac{7}{4}$, $\frac{7}{4}$ of 12**