# Varied Fluency
## Step 18: Multiply Mixed Numbers by Integers

## National Curriculum Objectives:

Mathematics Year 5: (5F5) Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams

## Differentiation:

**Developing** Questions to support multiplying mixed numbers by integers. The product of the fractions is within 1. Includes pictorial support.

**Expected** Questions to support multiplying mixed numbers by integers. The product of the fractions exceeds one. Includes some conversion to improper fractions. Some pictorial support.

**Greater Depth** Questions to support multiplying mixed numbers by integers. The product of the fractions exceeds one. Answers to be simplified using knowledge of equivalent fractions. Includes some conversion to improper fractions. No pictorial support.
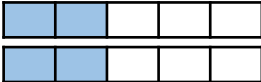
## More Year 5 Fractions resources.

## Did you like this resource? Don't forget to review it on our website.
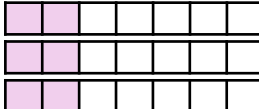
# Multiply Mixed Numbers by Integers

# Multiply Mixed Numbers by Integers

**1a.** Complete the steps to solve the calculation below.

$$4 \frac{2}{5} \times 2$$

$$4 \times 2 = \boxed{\phantom{00}}$$

$$\frac{2}{5} \times 2 = \frac{\boxed{\phantom{0}}}{5}$$

$$\boxed{\phantom{00}} + \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}} = \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}}$$

$$4 \frac{2}{5} \times 2 = \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}}$$

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**1b.** Complete the steps to solve the calculation below.

$$3 \frac{2}{7} \times 3$$

$$3 \times 3 = \boxed{\phantom{00}}$$

$$\frac{2}{7} \times 3 = \frac{\boxed{\phantom{0}}}{7}$$

$$\boxed{\phantom{00}} + \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}} = \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}}$$

$$3 \frac{2}{7} \times 3 = \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}}$$

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**2a.** Complete the calculations below.

**A.** $2 \frac{2}{11} \times 4 = \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}}$
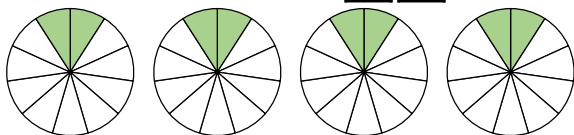
**B.** $3 \frac{3}{13} \times 4 = \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}}$
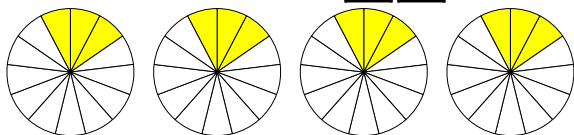
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**2b.** Complete the calculations below.

**A.** $5 \frac{4}{9} \times 2 = \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}}$
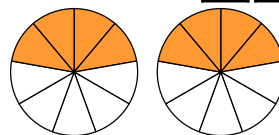
**B.** $2 \frac{2}{15} \times 4 = \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}}$
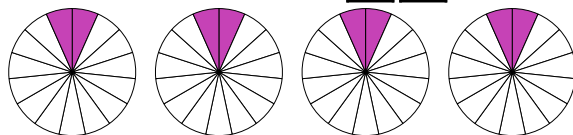
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**3a.** Match the calculations to the answer.

**A.** $2 \frac{3}{16} \times 3$        $6 \frac{14}{16}$
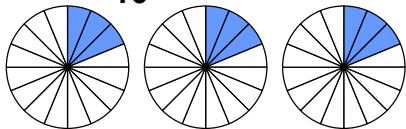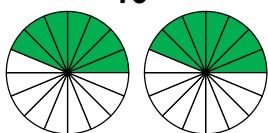
**B.** $3 \frac{7}{16} \times 2$        $6 \frac{9}{16}$

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**3b.** Match the calculations to the answer.

**A.** $3 \frac{4}{18} \times 4$        $12 \frac{16}{18}$

**B.** $4 \frac{5}{18} \times 3$        $12 \frac{15}{18}$

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**Varied Fluency – Multiply Mixed Numbers by Integers – Year 5 Developing**
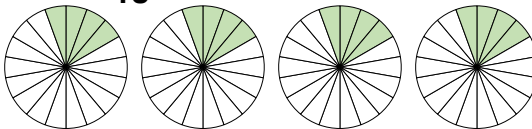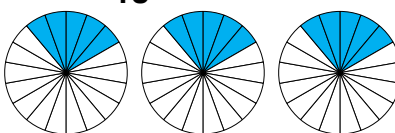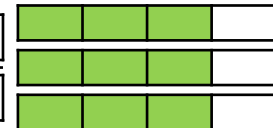
# Multiply Mixed Numbers by Integers

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**4a.** Complete the steps to solve the calculation below.

$$5 \frac{3}{5} \times 3$$

$$5 \times 3 = \boxed{\phantom{0}}$$

$$\frac{3}{5} \times 3 = \frac{\boxed{\phantom{0}}}{5} = \boxed{\phantom{0}}$$

$$5 \frac{3}{5} \times 3 = \boxed{\phantom{0}}$$

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**4b.** Complete the steps to solve the calculation below.

$$2 \frac{3}{4} \times 3$$

$$2 \times 3 = \boxed{\phantom{0}}$$

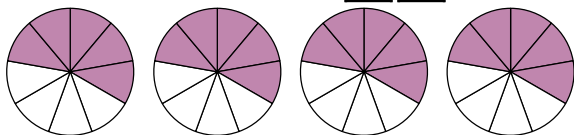$$\frac{3}{4} \times 3 = \frac{\boxed{\phantom{0}}}{4} = \boxed{\phantom{0}}$$
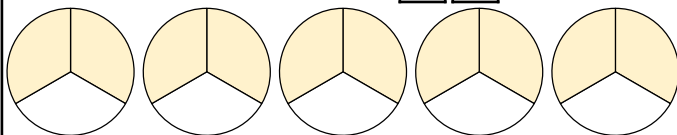
$$2 \frac{3}{4} \times 3 = \boxed{\phantom{0}}$$

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**5a.** Complete the calculations below.
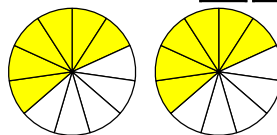
A. $3 \frac{5}{9} \times 4 = \boxed{\phantom{0}}$

B. $2 \frac{2}{3} \times 5 = \boxed{\phantom{0}}$

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**5b.** Complete the calculations below.

A. $4 \frac{6}{11} \times 2 = \boxed{\phantom{0}}$

B. $3 \frac{2}{7} \times 4 = \boxed{\phantom{0}}$
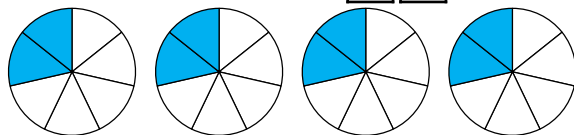
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**6a.** Match the calculations to the answer and convert it to a mixed number.

A. $2 \frac{4}{7} \times 4$
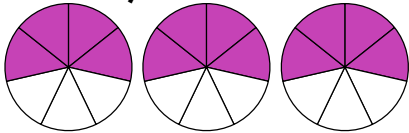
B. $3 \frac{6}{7} \times 2$

$\frac{54}{7} = \boxed{\phantom{0}}$
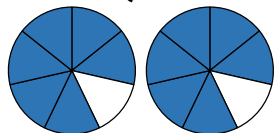
$\frac{72}{7} = \boxed{\phantom{0}}$

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**6b.** Match the calculations to the answer and convert it to a mixed number.

A. $3 \frac{2}{5} \times 3$

B. $2 \frac{3}{5} \times 4$

$\frac{52}{5} = \boxed{\phantom{0}}$

$\frac{51}{5} = \boxed{\phantom{0}}$

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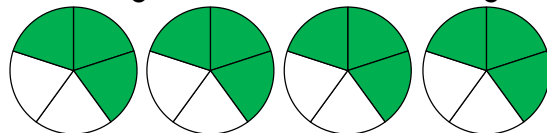
**Varied Fluency – Multiply Mixed Numbers by Integers – Year 5 Expected**

**7a.** Complete the steps to solve the calculation below.

$$4 \frac{7}{8} \times 2$$

$$4 \times 2 = \boxed{\phantom{00}}$$

$$\frac{7}{8} \times 2 = \frac{\boxed{\phantom{0}}}{8} = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$$

$$4 \frac{7}{8} \times 2 = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$$

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**7b.** Complete the steps to solve the calculation below.

$$3 \frac{7}{9} \times 3$$

$$3 \times 3 = \boxed{\phantom{00}}$$

$$\frac{7}{9} \times 3 = \frac{\boxed{\phantom{0}}}{9} = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$$

$$3 \frac{7}{9} \times 3 = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$$

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**8a.** Complete the calculations below.

A. $\quad 2 \frac{5}{9} \times 3 = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$

B. $\quad 3 \frac{7}{10} \times 5 = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$

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**8b.** Complete the calculations below.

A. $\quad 3 \frac{3}{10} \times 4 = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$

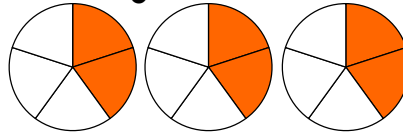B. $\quad 4 \frac{9}{15} \times 3 = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$

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**9a.** Match the calculations to the answer and convert it to a mixed number.

A. $2 \frac{4}{12} \times 5$

B. $3 \frac{7}{12} \times 4$

C. $4 \frac{5}{12} \times 3$

$\frac{159}{12} = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$

$\frac{140}{12} = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$

$\frac{172}{12} = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$

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**9b.** Match the calculations to the answer and convert it to a mixed number.

A. $1 \frac{2}{9} \times 6$

B. $2 \frac{3}{9} \times 4$

C. $5 \frac{6}{9} \times 2$

$\frac{84}{9} = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$

$\frac{102}{9} = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$

$\frac{66}{9} = \boxed{\phantom{0}} \boxed{\frac{\phantom{0}}{\phantom{0}}}$

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Varied Fluency – Multiply Mixed Numbers by Integers – Year 5 Greater Depth

# Varied Fluency
## Multiply Mixed Numbers by Integers

### Developing

1a. $8\frac{4}{5}$

2a. A. $8\frac{8}{11}$ ; B. $12\frac{12}{13}$

3a. A. $6\frac{9}{16}$ ; B. $6\frac{14}{16}$

### Expected

4a. $16\frac{4}{5}$

5a. A. $14\frac{2}{9}$ ; B. $13\frac{1}{3}$

6a. A. $\frac{72}{7} = 10\frac{2}{7}$ ; B. $\frac{54}{7} = 7\frac{5}{7}$

### Greater Depth

7a. $9\frac{3}{4}$

8a. A. $7\frac{2}{3}$ ; B. $18\frac{1}{2}$

9a. A. $\frac{140}{12} = 11\frac{2}{3}$ ; B. $\frac{172}{12} = 14\frac{1}{3}$ ; C. $\frac{159}{12} = 13\frac{1}{4}$

# Varied Fluency
## Multiply Mixed Numbers by Integers

### Developing

1b. $9\frac{6}{7}$

2b. A. $10\frac{8}{9}$ ; B. $8\frac{8}{15}$

3b. A. $12\frac{16}{18}$ ; B. $12\frac{15}{18}$

### Expected

4b. $8\frac{1}{4}$

5b. A. $9\frac{1}{11}$ ; B. $13\frac{1}{7}$

6b. A. $\frac{51}{5} = 10\frac{1}{5}$ ; B. $\frac{52}{5} = 10\frac{2}{5}$

### Greater Depth

7b. $11\frac{1}{3}$

8b. A. $13\frac{1}{5}$ ; B. $13\frac{4}{5}$

9b. A. $\frac{66}{9} = 7\frac{1}{3}$ ; B. $\frac{84}{9} = 9\frac{1}{3}$ ; C. $\frac{102}{9} = 11\frac{1}{3}$

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