Fractions: Bubble Blast

Aim:	Success Criteria:	Resources:
Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. I can multiply mixed numbers by whole numbers.	I can show that multiplication is the same as repeated addition. I can use fraction diagrams to multiply fractions by whole numbers. I can convert between improper fractions and mixed numbers.	Lesson Pack Whiteboards and pens – class set
	Key/New Words: Fraction, numerator, denominator, mixed number, whole number, partitioning, improper fraction.	**Preparation:** Bubble Blast Activity Sheets – one per child

Prior Learning:	It will be helpful if children can multiply proper fractions by whole numbers and convert between improper fractions and mixed numbers.

Learning Sequence

Fraction Bubble Burst: The children click on the bubbles shown on the **Lesson Presentation**, identifying proper, improper and mixed number fractions.

Multiplying Proper Fractions: Use the text and diagrams shown on the **Lesson Presentation** to demonstrate how repeated addition of a proper fraction can also be represented as multiplying a proper fraction by a whole number. Identify that the denominator remains the same and just the numerator is multiplied by the whole number.

Multiplying Mixed Numbers: Use the text and the diagrams shown on the **Lesson Presentation** to demonstrate three efficient methods for multiplying mixed numbers by integers. The first demonstrates the use of repeated addition; the second demonstrates how to multiply a mixed number by a whole number by converting the mixed number to an improper fraction and then converting the answer back to a mixed number; and the third strategy shows how to partition the whole and the fraction to multiply separately.

Bubble Blast: Children complete the differentiated **Fraction Bubble Blast Activity Sheets** to shown they can multiply mixed numbers by whole numbers.

★	★★	★★★
Children match the calculations to the answers.	Children match the calculations to the answers. As an extension activity, two of the bubbles remain unburst and they identify calculations that would give the same answer.	Children match the calculations to the answers. As an extension activity, four of the bubbles remain unburst and they identify calculations that would give the same answer.

Diving into Mastery: Schools using a mastery approach may prefer to use the following as an alternative activity. These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

Children look at using repeated addition and converting to improper fractions when multiplying mixed numbers by an integer. They solve calculations to ensure they are fluent with this skill.

Children apply their knowledge to a word problem and complete statements by correctly selecting the correct sign < > =.

Children complete a problem solving activity, identifying the value of missing digits in two calculations involving mixed numbers and integers with the same value product. They also tackle a more complex word problem which also involves using their addition and subtraction skills.

Word Up: The children identify how to solve the word problems shown on the

| **Explore**it	
Storyit:	Ask the children to create word problems to match calculations which involve multiplying fractions by whole numbers.
Rollit:	Roll a dice three times to generate different numbers. Arrange the numbers into a 'multiplying fractions by whole numbers' calculation to calculate. Convert the answer from an improper fraction to mixed number if necessary.

Maths

Fractions

Bubble Blast
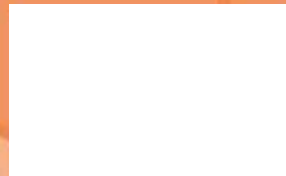
Aim

- I can multiply mixed numbers by whole numbers.

Success Criteria

- I can show that multiplication is the same as repeated addition.
- I can use fraction diagrams to multiply fractions by whole numbers.
- I can convert between improper fractions and mixed numbers.

Fraction Bubble Burst

Pop the bubbles which are **proper** fractions.

$\frac{1}{3}$

$\frac{1}{4}$

$13\frac{}{4}$

$5\frac{4}{9}$

$\frac{15}{8}$

$2\frac{6}{7}$

$\frac{7}{3}$

$8\frac{1}{4}$

$\frac{7}{8}$

Fraction Bubble Burst

Pop the bubbles which are **improper** fractions.

$\frac{1}{4}$

$\frac{2}{3}$

$13\frac{4}{}$

$8\frac{1}{4}$

$15\frac{}{8}$

$\frac{7}{8}$

$5\frac{4}{9}$

$2\frac{6}{7}$

$\frac{7}{3}$

Fraction Bubble Burst

Pop the bubbles which are **mixed numbers**.

$\dfrac{13}{4}$

$\dfrac{7}{3}$

$5\dfrac{4}{9}$

$\dfrac{15}{8}$

$\dfrac{7}{8}$

$2\dfrac{6}{7}$

$8\dfrac{1}{4}$

$\dfrac{1}{4}$

$\dfrac{2}{3}$

Multiplying Proper Fractions

Whole Class

Multiplying a fraction by a whole number is the same as repeated addition.

The numerator is multiplied by the whole number.
$2 \times 5 = 10$

$$\frac{2}{7} \times 5$$

The denominator is multiplied by one.
$7 \times 1 = 7$
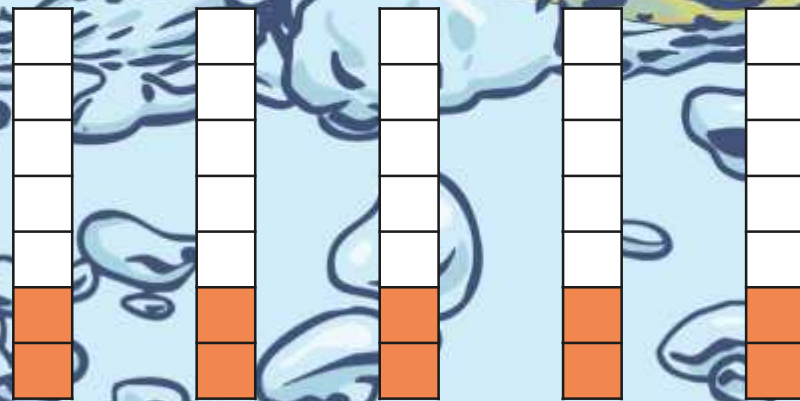
$$\frac{2}{7} + \frac{2}{7} + \frac{2}{7} + \frac{2}{7} + \frac{2}{7} = \frac{10}{7}$$

Multiplying Proper Fractions

There are different strategies to multiply a mixed number by a whole number. One strategy is repeated addition.
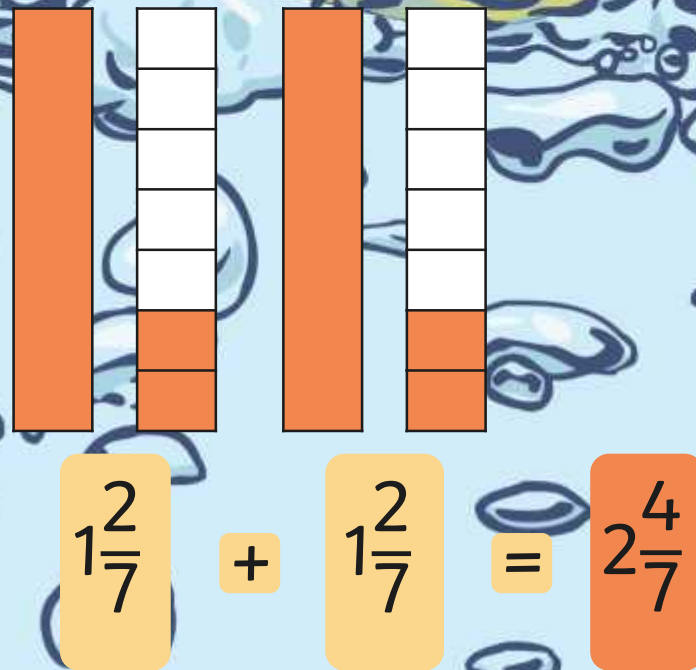
The numerator is multiplied by the whole number.
$2 \times 2 = 4$

$$1\frac{2}{7} \times 2$$

The whole is multiplied by the whole number.
$1 \times 2 = 2$

The denominator is multiplied by one.
$7 \times 1 = 7$

$$1\frac{2}{7} + 1\frac{2}{7} = 2\frac{4}{7}$$

Multiplying Mixed Numbers

Whole Class

To multiply a mixed number by a whole number, you can also change the mixed number into an improper fraction.

In this mixed number, every whole is made of four parts.
$(2 \times 4) + 1 = 9$

The numerator is multiplied by the whole number.
$9 \times 2 = 18$

This answer is an improper fraction. We need to change it to a mixed number.

$$2\frac{1}{4} \times 2 = \frac{9}{4} \times 2 = \frac{18}{4} = 4\frac{2}{4}$$

The denominator is multiplied by one.
$4 \times 1 = 4$

$18 \div 4 = 4 \text{ r } 2$

Multiplying Mixed Numbers

Whole Class

To multiply a mixed number by a whole number, you can also change the mixed number into an improper fraction.

In this mixed number, every whole is made of four parts.
$(1 \times 7) + 4 = 11$

The numerator is multiplied by the whole number.
$11 \times 3 = 33$

This answer is an improper fraction. We need to change it to a mixed number.

$$1\frac{4}{7} \times 3 = \frac{11}{7} \times 3 = \frac{33}{7} = 4\frac{5}{7}$$

The denominator is multiplied by one.
$7 \times 1 = 7$

$33 \div 7 = 4 \text{ r } 5$

Multiplying Mixed Numbers

Whole Class

Another strategy to multiply a mixed number by a whole number is to partition the whole and the fraction.

Partition the mixed number into a whole and a fraction.

$$2 \frac{5}{6} \times 4$$

Multiply the whole and then multiply the fraction.

$$2 \times 4 = 8$$

$$\frac{5}{6} \times 4 = \frac{20}{6}$$

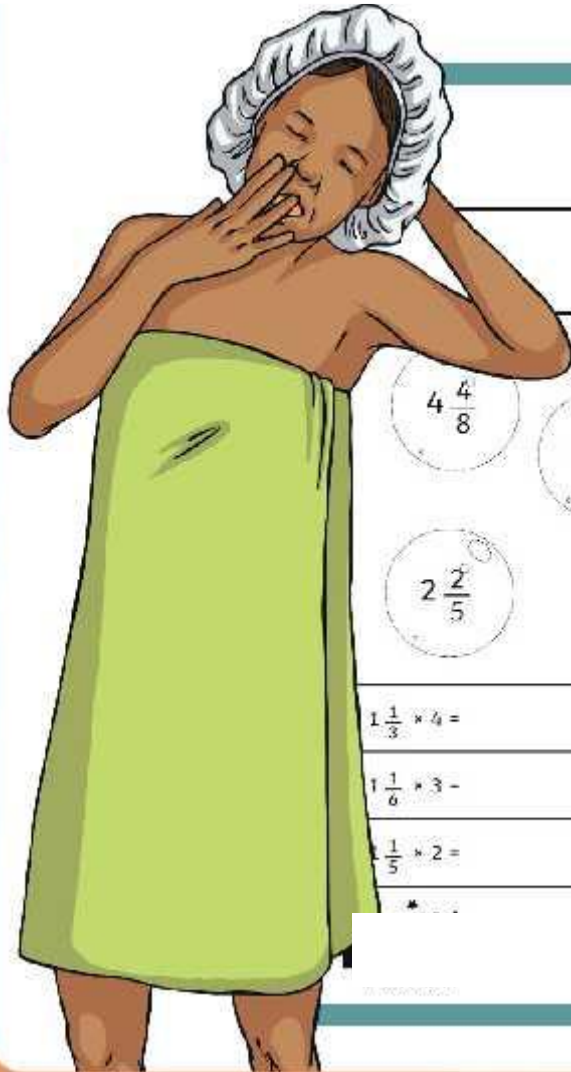Add them back together to find the answer.

$$8 + \frac{20}{6} = 8 \frac{20}{6} = 11 \frac{2}{6} \text{ or } 11 \frac{1}{3}$$
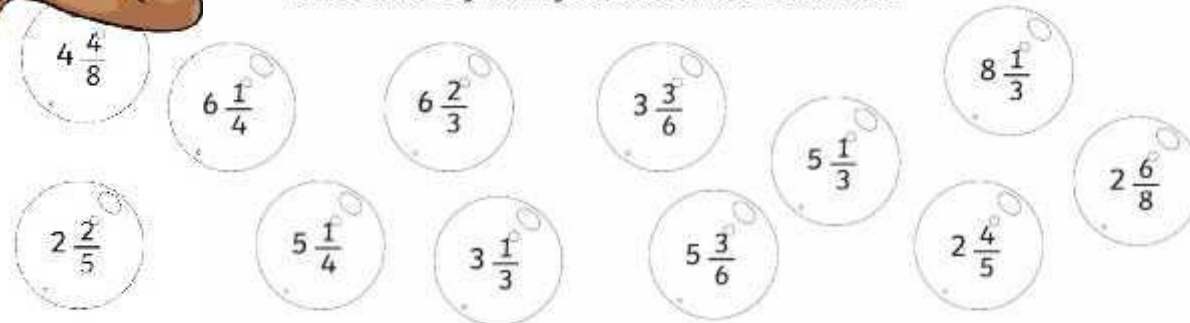
Fraction Flowers Bingo

Bubble Blast

I can multiply mixed numbers by whole numbers.

Blast the bubbles by matching the correct bubble to the calculation.

$4\frac{4}{8}$ $6\frac{1}{4}$ $6\frac{2}{3}$ $3\frac{3}{6}$ $8\frac{1}{3}$

$5\frac{1}{3}$ $2\frac{6}{8}$

$2\frac{2}{5}$ $5\frac{1}{4}$ $3\frac{1}{3}$ $5\frac{3}{6}$ $2\frac{4}{5}$

$1\frac{1}{3} \times 4 =$	$1\frac{1}{4} \times 5 =$	$1\frac{1}{3} \times 5 =$	$1\frac{3}{4} \times 3 =$
$1\frac{1}{6} \times 3 =$	$1\frac{3}{8} \times 4 =$	$1\frac{5}{6} \times 3 =$	$1\frac{5}{8} \times 3 =$
$1\frac{1}{5} \times 2 =$	$1\frac{2}{3} \times 2 =$	$1\frac{2}{5} \times 4 =$	$1\frac{2}{3} \times 5 =$

Dive in by completing your own activity!

Word Up

Four friends shared a takeaway.

Each person ate $1\frac{2}{3}$ pizzas each.

How much pizza was eaten in total?

$$1\frac{2}{3} \times 4 = \frac{5}{3} \times 4 = \frac{20}{3} = 6\frac{2}{3}$$

Word Up

Whole Class

Six friends took part in a sponsored swim.

They each swam $1\frac{5}{8}$ km.

How many kilometres did they swim in total?

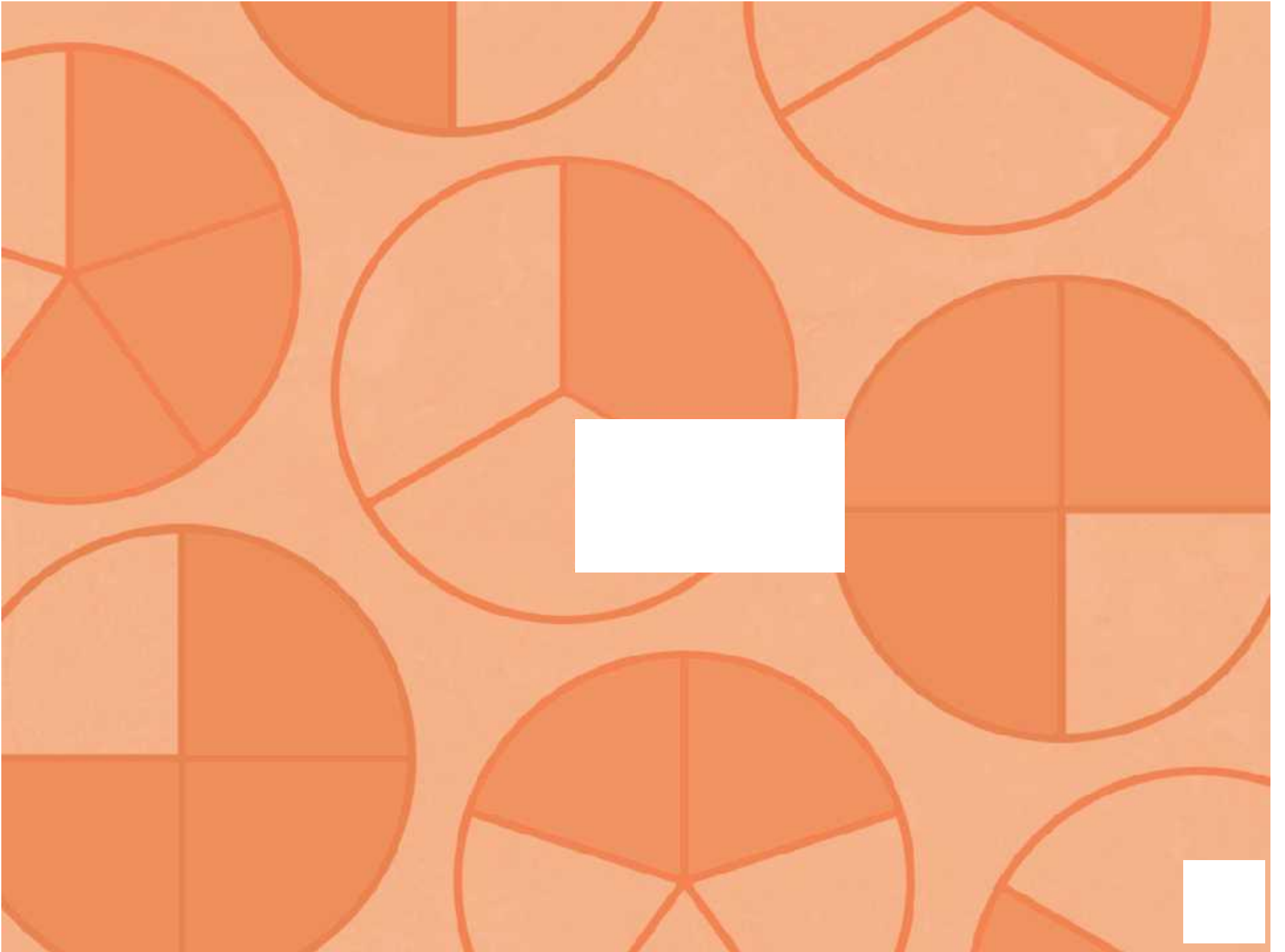$$1\frac{5}{8} \times 6 = \frac{13}{8} \times 6 = \frac{78}{8} = 9\frac{6}{8} \text{ km}$$

Aim

- I can multiply mixed numbers by whole numbers.

Success Criteria

- I can show that multiplication is the same as repeated addition.
- I can use fraction diagrams to multiply fractions by whole numbers.
- I can convert between improper fractions and mixed numbers.

Bubble Blast

I can multiply mixed numbers by whole numbers.

Blast the bubbles by matching the correct bubble to the calculation.

$5\frac{4}{8}$　$6\frac{1}{4}$　$6\frac{2}{3}$　$3\frac{3}{6}$　$8\frac{1}{3}$

$2\frac{2}{5}$　$5\frac{1}{4}$　$3\frac{1}{3}$　$5\frac{3}{6}$　$5\frac{1}{3}$　$5\frac{3}{5}$　$4\frac{7}{8}$

$1\frac{1}{3} \times 4 =$	$1\frac{1}{4} \times 5 =$	$1\frac{1}{3} \times 5 =$	$1\frac{3}{4} \times 3 =$
$1\frac{1}{6} \times 3 =$	$1\frac{3}{8} \times 4 =$	$1\frac{5}{6} \times 3 =$	$1\frac{5}{8} \times 3 =$
$1\frac{1}{5} \times 2 =$	$1\frac{2}{3} \times 2 =$	$1\frac{2}{5} \times 4 =$	$1\frac{2}{3} \times 5 =$

Bubble Blast **Answers**

I can multiply mixed numbers by whole numbers.

Blast the bubbles by matching the correct bubble to the calculation.

$5 \frac{4}{8}$ $6 \frac{1}{4}$ $6 \frac{2}{3}$ $3 \frac{3}{6}$ $8 \frac{1}{3}$

$5 \frac{1}{3}$ $4 \frac{7}{8}$

$2 \frac{2}{5}$ $5 \frac{1}{4}$ $3 \frac{1}{3}$ $5 \frac{3}{6}$ $5 \frac{3}{5}$

$1 \frac{1}{3} \times 4 = \frac{4}{3} \times 4 = \frac{16}{3} = 5 \frac{1}{3}$	$1 \frac{1}{4} \times 5 = \frac{5}{4} \times 5 = \frac{25}{4} = 6 \frac{1}{4}$	$1 \frac{1}{3} \times 5 = \frac{4}{3} \times 5 = \frac{20}{3} = 6 \frac{2}{3}$	$1 \frac{3}{4} \times 3 = \frac{7}{4} \times 3 = \frac{21}{4} = 5 \frac{1}{4}$
$1 \frac{1}{6} \times 3 = \frac{7}{6} \times 3 = \frac{21}{6} = 3 \frac{3}{6}$	$1 \frac{3}{8} \times 4 = \frac{11}{8} \times 4 = \frac{44}{8} = 5 \frac{4}{8}$	$1 \frac{5}{6} \times 3 = \frac{11}{6} \times 3 = \frac{33}{6} = 5 \frac{3}{6}$	$1 \frac{5}{8} \times 3 = \frac{13}{8} \times 3 = \frac{39}{8} = 4 \frac{7}{8}$
$1 \frac{1}{5} \times 2 = \frac{6}{5} \times 2 = \frac{12}{5} = 2 \frac{2}{5}$	$1 \frac{2}{3} \times 2 = \frac{5}{3} \times 2 = \frac{10}{3} = 3 \frac{1}{3}$	$1 \frac{2}{5} \times 4 = \frac{7}{5} \times 4 = \frac{28}{5} = 5 \frac{3}{5}$	$1 \frac{2}{3} \times 5 = \frac{5}{3} \times 5 = \frac{25}{3} = 8 \frac{1}{3}$

Bubble Blast

I can multiply mixed numbers by whole numbers.

Blast the bubbles by matching the correct bubble to the calculation. Then, write your own calculations, multiplying a mixed number by a whole number, for the two bubbles that are unpopped.

$7\frac{7}{8}$ $11\frac{1}{4}$ $11\frac{2}{3}$ $8\frac{1}{2}$ $13\frac{1}{3}$

$4\frac{2}{5}$ $8\frac{1}{4}$ $9\frac{1}{3}$ $6\frac{1}{2}$ $5\frac{1}{3}$ $4\frac{4}{5}$ $9\frac{1}{2}$

$2\frac{1}{3} \times 4 =$	$2\frac{1}{4} \times 5 =$	$2\frac{1}{3} \times 5 =$	$2\frac{3}{4} \times 3 =$
$2\frac{1}{6} \times 3 =$	$2\frac{3}{8} \times 4 =$	$2\frac{5}{6} \times 3 =$	$2\frac{5}{8} \times 3 =$
$2\frac{1}{5} \times 2 =$	$2\frac{2}{3} \times 2 =$		

Bubble Blast **Answers**

I can multiply mixed numbers by whole numbers.

Blast the bubbles by matching the correct bubble to the calculation. Then, write your own calculations, multiplying a mixed number by a whole number, for the two bubbles that are unpopped.

$7\frac{7}{8}$ $11\frac{1}{4}$ $11\frac{2}{3}$ $8\frac{1}{2}$ $13\frac{1}{3}$

$4\frac{2}{5}$ $8\frac{1}{4}$ $9\frac{1}{3}$ $6\frac{1}{2}$ $5\frac{1}{3}$ $4\frac{4}{5}$ $9\frac{1}{2}$

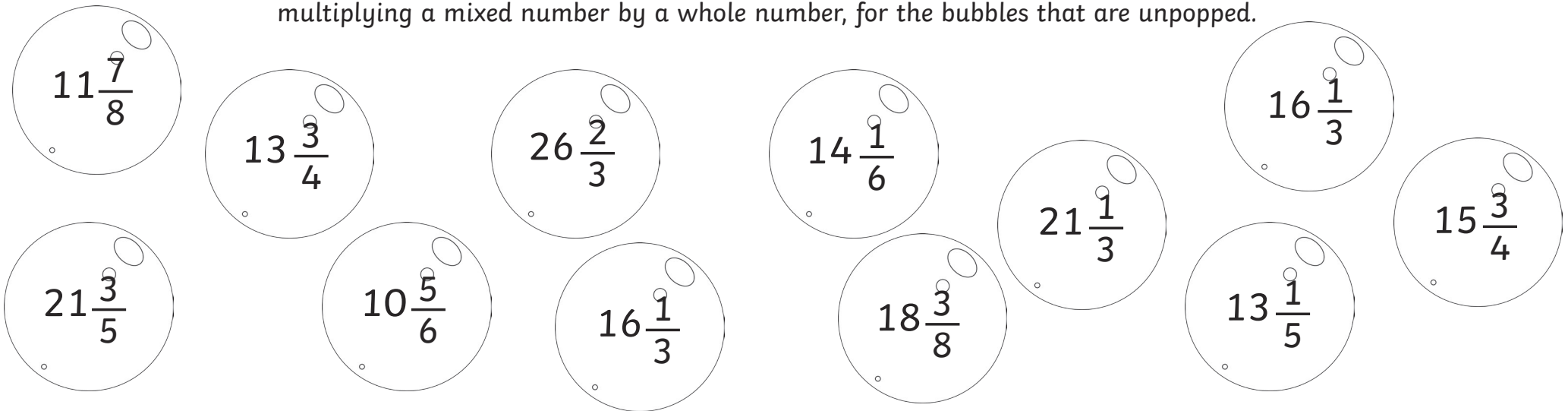|			
$2\frac{1}{3} \times 4 = \frac{7}{3} \times 4 = \frac{28}{3} = 9\frac{1}{3}$	$2\frac{1}{4} \times 5 = \frac{9}{4} \times 5 = \frac{45}{4} = 11\frac{1}{4}$	$2\frac{1}{3} \times 5 = \frac{7}{3} \times 5 = \frac{35}{3} = 11\frac{2}{3}$	$2\frac{3}{4} \times 3 = \frac{11}{4} \times 3 = \frac{33}{4} = 8\frac{1}{4}$
$2\frac{1}{6} \times 3 = \frac{13}{6} \times 3 = \frac{39}{6} = 6\frac{3}{6}$	$2\frac{3}{8} \times 4 = \frac{19}{8} \times 4 = \frac{76}{8} = 9\frac{4}{8}$	$2\frac{5}{6} \times 3 = \frac{17}{6} \times 3 = \frac{51}{6} = 8\frac{3}{6}$	$2\frac{5}{8} \times 3 = \frac{21}{8} \times 3 = \frac{63}{8} = 7\frac{7}{8}$
$2\frac{1}{5} \times 2 = \frac{11}{5} \times 2 = \frac{22}{5} = 4\frac{2}{5}$	$2\frac{2}{3} \times 2 = \frac{8}{3} \times 2 = \frac{16}{3} = 5\frac{1}{3}$	*Multiple answers possible.*	*Multiple answers possible.*

Bubble Blast

I can multiply mixed numbers by whole numbers.

Blast the bubbles by matching the correct bubble to the calculation. Then, write your own calculations, multiplying a mixed number by a whole number, for the bubbles that are unpopped.

$11\frac{7}{8}$ $13\frac{3}{4}$ $26\frac{2}{3}$ $14\frac{1}{6}$ $16\frac{1}{3}$ $15\frac{3}{4}$

$21\frac{3}{5}$ $10\frac{5}{6}$ $16\frac{1}{3}$ $18\frac{3}{8}$ $21\frac{1}{3}$ $13\frac{1}{5}$

$2\frac{1}{3}$ x 7 =	$2\frac{1}{4}$ x 7 =	$2\frac{1}{3}$ x 7 =	$2\frac{3}{4}$ x 5 =
$2\frac{1}{6}$ x 5 =	$2\frac{3}{8}$ x 5 =	$2\frac{5}{6}$ x 5 =	$2\frac{5}{8}$ x 7 =

Bubble Blast **Answers**

I can multiply mixed numbers by whole numbers.

Blast the bubbles by matching the correct bubble to the calculation. Then, write your own calculations, multiplying a mixed number by a whole number, for the bubbles that are unpopped.

$11\frac{7}{8}$

$13\frac{3}{4}$

$26\frac{2}{3}$

$14\frac{1}{6}$

$16\frac{1}{3}$

$21\frac{3}{5}$

$10\frac{5}{6}$

$16\frac{1}{3}$

$18\frac{3}{8}$

$21\frac{1}{3}$

$13\frac{1}{5}$

$15\frac{3}{4}$

$2\frac{1}{3} \times 7 = \frac{7}{3} \times 7 = \frac{49}{3} = 16\frac{1}{3}$	$2\frac{1}{4} \times 7 = \frac{9}{4} \times 7 = \frac{63}{4} = 15\frac{3}{4}$	$2\frac{1}{3} \times 7 = \frac{7}{3} \times 7 = \frac{49}{3} = 16\frac{1}{3}$	$2\frac{3}{4} \times 5 = \frac{11}{4} \times 5 = \frac{55}{4} = 13\frac{3}{4}$
$2\frac{1}{6} \times 5 = \frac{13}{6} \times 5 = \frac{65}{6} = 10\frac{5}{6}$	$2\frac{3}{8} \times 5 = \frac{19}{8} \times 5 = \frac{95}{8} = 11\frac{7}{8}$	$2\frac{5}{6} \times 5 = \frac{17}{6} \times 5 = \frac{85}{6} = 14\frac{1}{6}$	$2\frac{5}{8} \times 7 = \frac{21}{8} \times 7 = \frac{147}{8} = 18\frac{3}{8}$
Multiple answers possible.	*Multiple answers possible.*	*Multiple answers possible.*	*Multiple answers possible.*

1) **a)**
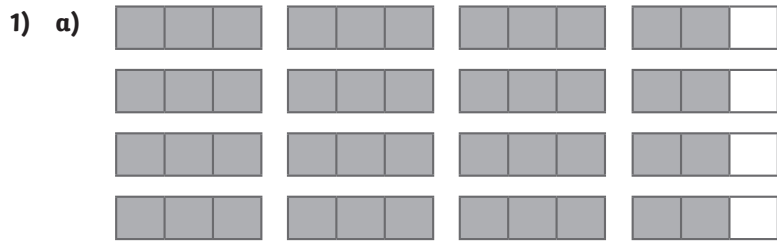
b) $3\frac{2}{3} \times 4 = 3\frac{2}{3} + 3\frac{2}{3} + 3\frac{2}{3} + 3\frac{2}{3} = 12\frac{8}{3} = 14\frac{2}{3}$
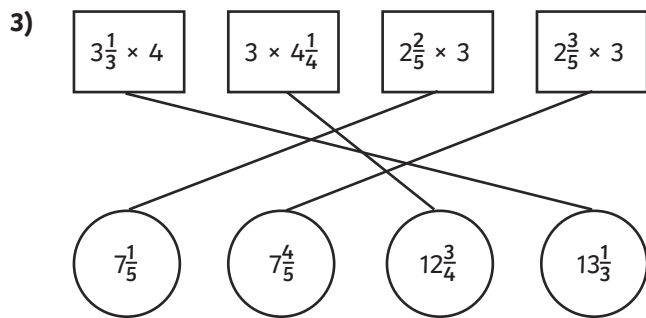
c) $3 \times 4 = 12$
$\frac{2}{3} \times 4 = \frac{8}{3}$
$12 + \frac{8}{3} = 12\frac{8}{3} = 14\frac{2}{3}$

d) $3\frac{2}{3} \times 4 = \frac{11}{3} \times 4 = \frac{44}{3} = 14\frac{2}{3}$

2) **a)** $5\frac{1}{5}$

b) 7

3)

$\boxed{3\frac{1}{3} \times 4}$ $\boxed{3 \times 4\frac{1}{4}}$ $\boxed{2\frac{2}{5} \times 3}$ $\boxed{2\frac{3}{5} \times 3}$

$7\frac{1}{5}$ $7\frac{4}{5}$ $12\frac{3}{4}$ $13\frac{1}{3}$

1) Accept any methods that children have correctly used to find the answer. Here is one method that they could have used:

a) $2\frac{1}{4} \times 4 =$

$2 \times 4 = 8$

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

$8 + 1 = 9$ litres of water

b) $4\frac{2}{3} \times 4 =$

$4 \times 4 = 16$

$\frac{2}{3} \times 4 = \frac{8}{3} = 2\frac{2}{3}$

$16 + 2\frac{2}{3} = 18\frac{2}{3}$ tablespoons of bubble mixture

2) a) $2\frac{3}{5} \times 3 \quad < \quad 2\frac{5}{10} \times 4$

$7\frac{4}{5} < 10$

b) $4\frac{3}{4} \times 2 \quad < \quad 3\frac{5}{6} \times 3$

$9\frac{1}{2} < 11\frac{1}{2}$

c) $2\frac{3}{4} \times 4 \quad > \quad 5\frac{1}{4} \times 2$

$11 > 10\frac{1}{2}$

1) Here are two possible solutions:

$3\frac{3}{4} \times 3 = 2\frac{3}{12} \times 5$

$1\frac{3}{4} \times 3 = 2\frac{5}{8} \times 2$

2) $72\frac{3}{8} \times 3 =$

$72 \times 3 = 216$

$\frac{3}{8} \times 3 = \frac{9}{8} = 1\frac{1}{8}$

$80\frac{3}{4} \times 3 =$

$80 \times 3 = 240$

$\frac{3}{4} \times 3 = \frac{9}{4} = 2\frac{1}{4}$

$240 + 2\frac{1}{4} = 242\frac{1}{4}$

3 baths a week would use between $217\frac{1}{8}$ and $242\frac{1}{4}$ litres of water.

$217\frac{1}{8} \times 52 =$

$217 \times 52 = 11\ 284$

$\frac{1}{8} \times 52 = \frac{52}{8} = 6\frac{4}{8} = 6\frac{1}{2}$

$11\ 284 + 6\frac{1}{2} = 11\ 290\frac{1}{2}$

$242\frac{1}{4} \times 52 =$

$242 \times 52 = 12\ 584$

$\frac{1}{4} \times 52 = \frac{52}{4} = 13$

$12\ 584 + 13 = 12\ 597$

$12\ 597 - 11\ 290\frac{1}{2} = 1306\frac{1}{2}$ *litres*

Taking a deep bath would use *$1306\frac{1}{2}$* more litres of water than taking a shallow bath.

1) Class 5 are exploring different methods of multiplying mixed numbers.

a) Shade the bar models to represent $3\frac{2}{3} \times 4$.

b) Complete Theo's repeated addition calculation, giving the answer in its simplest form.

$3\frac{2}{3} \times 4 =$ _____ + _____ + _____ + _____ = _____ = _____

c) Isha is using a different method. She has partitioned the whole and the fraction to multiply them separately. Complete her calculation, giving the answer in its simplest form.

$3 \times 4 =$ _____ $\frac{2}{3} \times 4 =$ _____   _____ + _____ = _____

d) Vicky converted the mixed number to an improper fraction to multiply. Show her calculation, giving the answer in its simplest form.

_____

2) Now choose a method to answer each question.

a) $2\frac{3}{5} \times 2 =$

_____

b) $4 \times 1\frac{3}{4} =$

_____

3) Match the calculation to the correct answer.

$3\frac{1}{3} \times 4$ $3 \times 4\frac{1}{4}$ $2\frac{2}{5} \times 3$ $2\frac{3}{5} \times 3$

$7\frac{1}{5}$ $7\frac{4}{5}$ $12\frac{3}{4}$ $13\frac{1}{3}$

1) Ted is making bubble mixture for his bubble machine. To make one portion, he mixes $2\frac{1}{4}$ litres of water with $4\frac{2}{3}$ tablespoons of washing-up liquid.

Ted makes one portion of bubble mixture for himself and one each for his three friends.

a) How much water will he need?

b) How many tablespoons of washing-up liquid will he need?

2) Complete the statements using the symbols <, > or =.

a) $2\frac{3}{5} \times 3$ ◯ $2\frac{5}{10} \times 4$

b) $4\frac{3}{4} \times 2$ ◯ $3\frac{5}{6} \times 3$

c) $2\frac{3}{4} \times 4$ ◯ $5\frac{1}{4} \times 2$

1) What could the value of the missing digits be? Find two possible solutions.

$\boxed{}\dfrac{\boxed{}}{4} \times 3 = 2\dfrac{3}{\boxed{}} \times \boxed{}$
$\qquad\qquad$
$\boxed{}\dfrac{\boxed{}}{4} \times 3 = 2\dfrac{3}{\boxed{}} \times \boxed{}$

2) On average, a shallower bath uses $72\frac{3}{8}$ litres of water, whereas a deeper bath uses $80\frac{3}{4}$ litres of water.

In one year, how much more water would always taking a deep bath use than always taking a shallow bath, if someone had 3 baths a week?

Show your working out.

Taking a deep bath would use _____ more litres of water than taking a shallow bath.

3) Write a problem that involves multiplying mixed numbers for your partner to solve.

_____

_____

_____

1) Class 5 are exploring different methods of multiplying mixed numbers.

a) Shade the bar models to represent $3\frac{2}{3} \times 4$.

b) Complete Theo's repeated addition calculation, giving the answer in its simplest form.

$3\frac{2}{3} \times 4 =$ _____ + _____ + _____ +

_____ = _____ = _____

c) Isha is using a different method. She has partitioned the whole and the fraction to multiply them separately. Complete her calculation, giving the answer in its simplest form.

$3 \times 4 =$ _____

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

_____ + _____ = _____

d) Vicky converted the mixed number to an improper fraction to multiply. Show her calculation, giving the answer in its simplest form.

2) Now choose a method to answer each question.

a) $2\frac{3}{5} \times 2 =$

b) $4 \times 1\frac{3}{4} =$

3) Match the calculation to the correct answer.

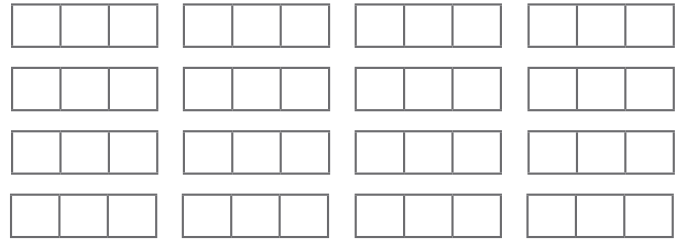| $3\frac{1}{3} \times 4$ | $3 \times 4\frac{1}{4}$ | $2\frac{2}{5} \times 3$ | $2\frac{3}{5} \times 3$ |

| $7\frac{1}{5}$ | $7\frac{4}{5}$ | $12\frac{3}{4}$ | $13\frac{1}{3}$ |

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1) Ted is making bubble mixture for his bubble machine. To make one portion, he mixes $2\frac{1}{4}$ litres of water with $4\frac{2}{3}$ tablespoons of washing-up liquid.

Ted makes one portion of bubble mixture for himself and one each for his three friends.

a) How much water will he need?

b) How many tablespoons of washing-up liquid will he need?

2) Complete the statements using the symbols <, > or =.

a) $2\frac{3}{5} \times 3$ ◯ $2\frac{5}{10} \times 4$

b) $4\frac{3}{4} \times 2$ ◯ $3\frac{5}{6} \times 3$

c) $2\frac{3}{4} \times 4$ ◯ $5\frac{1}{4} \times 2$

1) What could the value of the missing digits be? Find two possible solutions.

$$\boxed{}\,\frac{\boxed{}}{4} \times 3 = 2\,\frac{3}{\boxed{}} \times \boxed{}$$

On average, a shallower bath uses $72\frac{3}{8}$ litres of water, whereas a deeper bath uses $80\frac{3}{4}$ litres of water.

In one year, how much more water would always taking a deep bath use than always taking a shallow bath, if someone had 3 baths a week?

Show your working out.

Taking a deep bath would use _____ more litres of water than taking a shallow bath.

3) Write a problem that involves multiplying a mixed number for your partner to solve.

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Taking a deep bath would use _____ more litres of water than taking a shallow bath.

3) Write a problem that involves multiplying a mixed number for your partner to solve.

Fractions | Bubble Blast

I can multiply mixed numbers by whole numbers.		
I can show that multiplication is the same as repeated addition.		
I can use fraction diagrams to multiply fractions by whole numbers.		
I can convert between improper fractions and mixed numbers.		

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