Colin and Coco's Deliberate Practice

Year 4 Unit 12

Fractions

Contents

This pack of deliberate practice is designed to be used flexibly to secure the manageable steps of this unit.
The table below indicates which activities are linked to which manageable steps.

	Do It	Challenge It	Play It
Add fractions with the same denominator within and beyond one whole		1	
Subtract fractions with the same denominator within and beyond one whole	1		
Calculate a unit fraction of an amount when the answer is a whole number			1
Calculate a non-unit fraction of an amount when the answer is a whole number	2		2
Identify equivalent fractions using diagrams		2	
Find families of equivalent fractions		3	3
Know and use the decimal equivalents to 1/4, 1/2, 3/4	3		

Do It 1

Calculate:

$\frac{5}{4} - \frac{2}{4} =$ ☐ $\quad \frac{9}{8} - \frac{1}{8} =$ ☐ $\quad \frac{9}{8} - \frac{2}{8} =$ ☐

$\frac{7}{4} - \frac{2}{4} =$ ☐ $\quad \frac{7}{5} - \frac{2}{5} =$ ☐ $\quad \frac{7}{5} - \frac{2}{5} =$ ☐

$\frac{8}{6} - \frac{1}{6} =$ ☐ $\quad \frac{4}{3} - \frac{1}{3} =$ ☐ $\quad \frac{8}{7} - \frac{3}{7} =$ ☐

$\frac{8}{5} - \frac{1}{5} =$ ☐ $\quad \frac{13}{10} - \frac{4}{10} =$ ☐ $\quad \frac{12}{10} - \frac{6}{10} =$ ☐

Challenge It 1

Find the missing digits.
Complete the calculations in several ways, if possible.

$$\frac{\square}{5} + \frac{\square}{\square} = \frac{7}{5}$$

$$\frac{\square}{10} + \frac{\square}{1\square} = \frac{\square 4}{10}$$

$$\frac{\square}{9} + \frac{5}{9} = \frac{1\square}{\square}$$

Solve them all together using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 once each.

Unit Fractions of Amounts Game

Play It 1

You need:
0 - 9 dice

To play:
Players take it in turns to throw the dice twice to get 2 digits.
They try to make a two-digit number that they can find one sixth, one seventh, one eighth, one ninth or one twelfth of.
The answer must be a whole number.

This answer is their score.

For example:
Player 1: throws 2 and 7
makes 72
finds one twelfth
scores 6
(they would have scored more if they had found one sixth!)

Player 2: throws 2 and 4
makes 24
finds one eighth
scores 3
(They would have scored more if they had made 42 and found one sixth.)

To win:
The winner is the first player to score a total more than 50

Do It 2

Represent as a bar model and calculate:

$\frac{4}{5}$ of 15 = ☐

15

$\frac{5}{6}$ of 24 = ☐

24

$\frac{3}{8}$ of 32 = ☐

$\frac{4}{7}$ of 28 = ☐

$\frac{7}{9}$ of 36 = ☐

$\frac{3}{5}$ of 35 = ☐

$\frac{5}{8}$ of 48 = ☐

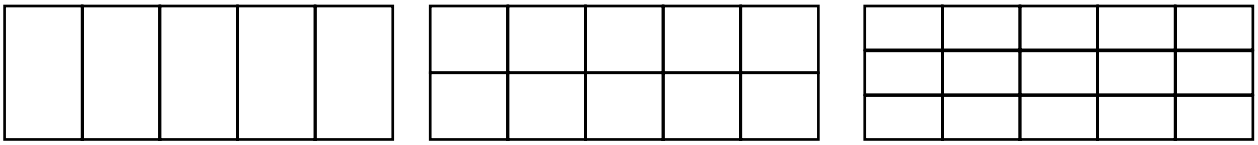
$\frac{7}{8}$ of 80 = ☐

$\frac{6}{7}$ of 42 = ☐

$\frac{8}{9}$ of 72 = ☐

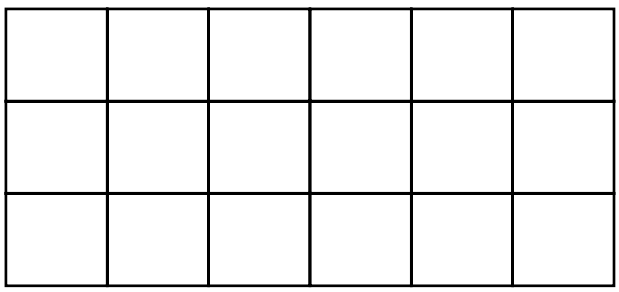
Challenge It 2

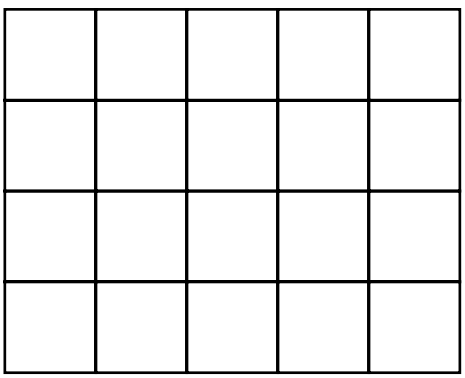
Use the rectangles to show equivalent fractions.



How could you show the following fractions on the grids below?

$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{1}{6}$ $\frac{1}{7}$ $\frac{1}{8}$ $\frac{1}{9}$





Which fractions can be shown on both grids?
Which cannot be shown on either grid?

Fractions of Amounts Game

You need:
0 - 9 dice

To play:

Players take turns to throw the dice twice.
Use the smaller number as the numerator and the larger number as the denominator to make a fraction. Use the zero as a ten.
If the same number is thrown twice, re-roll one of the dice.
Choose a number less than 30
Find the fraction of this number.
This is the player's score.

For example:
Player 1: throws 4 and 9
makes the fraction $\frac{4}{9}$

chooses 27 as their amount
finds $\frac{4}{9}$ of 27 is 12

scores 12

To win:
The winner is the player with the highest total score after five goes each.

Do It 3

Write the decimal equivalent:

$\frac{1}{4}$ = ☐ $\frac{1}{2}$ = ☐ $\frac{3}{4}$ = ☐

Use decimal and fraction equivalents to calculate:

$\frac{1}{4}$ m = ☐ m $\frac{1}{2}$ m = ☐ m $\frac{3}{4}$ m = ☐ m

$\frac{1}{4}$ km = ☐ km $\frac{1}{2}$ km = ☐ km $\frac{3}{4}$ km = ☐ km

$\frac{1}{4}$ kg = ☐ kg $\frac{1}{2}$ kg = ☐ kg $\frac{3}{4}$ kg = ☐ kg

Challenge It 3

Find the missing digits.
Complete the statements in several ways, if possible.

$$\frac{\square}{1\square} = \frac{2}{\square} = \frac{\square}{\square}$$

$$\frac{3}{1\square} = \frac{\square}{5} = \frac{\square}{2\square} = \frac{\square}{35}$$

Solve them all together using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 once each.

Plotting Equivalents Game

You need:
0 - 9 dice
1 - 100 board (on the next page)
Counters for each player

To play:
Players take turns to throw the dice twice.
Use the smaller number as the numerator and the larger number as the denominator to make a fraction. Use the zero as a ten.
If the same number is thrown twice, re-roll one of the dice.

Write down your fraction and a fraction equivalent to it.
Cover the numerator and the denominator of the equivalent fraction as separate numbers on the 1 - 100 board.

For example:
Player 1: throws 4 and 9
makes the fraction $\frac{4}{9}$

makes the equivalent fraction $\frac{12}{27}$

covers 12 and 27 on the board

To win:
The winner is the first player to cover three numbers in a line vertically, horizontally or diagonally.

1 - 100 board

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100