Power maths answers for week 3

Day 1:

→ pages 136–138

1. a) A = $\frac{1}{10}$
B = $\frac{3}{10}$
C = $\frac{5}{10}$ or $\frac{1}{2}$
D = $\frac{9}{10}$

b) $\frac{5}{10}$ can be simplified to $\frac{1}{2}$ as they are equivalent.

2. Place value counters drawn on grid:

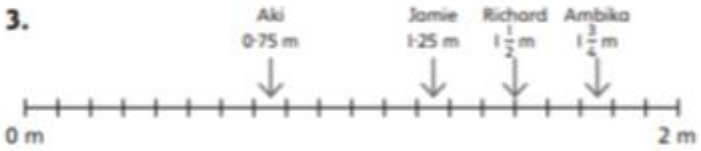
$\frac{4}{10}$: 4 counters in Tths column

$2\frac{3}{4}$: 2 counters in O column, 7 counters in Tth column, 5 counters in Hth column

$1\frac{4}{10}$: 1 counter in O column, 4 counters in Tth column

$1\frac{1}{4}$: 1 counter in O column, 2 counters in Tth column, 5 counters in Hth column

3.



Methods may vary. Children may say they converted the fractions to decimals first. Then they counted that there were 20 intervals between 0 m and 2 m so this meant that each interval was 0·1 m, and each half interval was 0·05 m.

4. a) 0·25
b) 0·5
c) 0·75
d) 1·0
e) 1·5
f) 2·0
g) $\frac{3}{10}$
h) 1·5
i) $3\frac{1}{5}$ (or $3\frac{2}{10}$)
j) $3\frac{2}{5}$ (or $3\frac{4}{10}$)
k) 1
l) $\frac{6}{3}$

5. Encourage children to use pictorial representations to see that $\frac{1}{5}$ is not the same as $\frac{1}{2}$ and therefore not 0·5.

Reflect

Diagrams may vary, for example children might draw a fraction wall to include tenths or a 0·1 number line divided into tenths. Ensure the correct representation of each fraction is shaded.

$\frac{1}{4}$ = 0·25 $\frac{1}{2}$ = 0·5 $\frac{3}{4}$ = 0·75 $\frac{1}{10}$ = 0·1

Day 2:

→ pages 139–141

1. a) 0·09 = $\frac{9}{100}$
b) 0·23 = $\frac{23}{100}$
c) 0·35 = $\frac{35}{100}$ (or $\frac{7}{10}$)
d) 0·03 = $\frac{3}{100}$
e) 0·7 = $\frac{7}{10}$
f) 0·9 = $\frac{9}{10}$

2. Place value counters drawn on grid:
a) $\frac{21}{100}$: no counters in O column, 2 counters in Tth column, 1 counter in Hth column
b) $\frac{21}{10}$: 2 counters in O column, 1 counter in Tth column, no counters in Hth column
c) $\frac{201}{100}$: 2 counters in O column, no counters in Tth column, 1 counter in Hth column

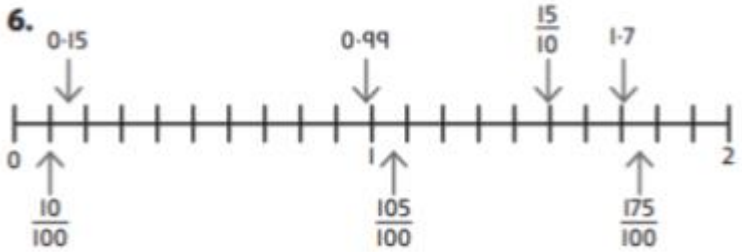
3. a) Numbers ticked: $\frac{11}{100}$ and 0·15
b) Numbers ticked: 2·80, 2·71 and $2\frac{87}{100}$

4. Answers will vary – any fraction, decimal or mixed number between 5·5 and 5·75.
Decimal = 5·6 Fraction = $\frac{45}{8}$ Mixed number = $5\frac{5}{8}$

5.

Decimal number	Mixed number	Improper fraction
1·61	$1\frac{61}{100}$	$\frac{161}{100}$
1·6	$1\frac{6}{10}$	$\frac{16}{10}$
2·26	$2\frac{26}{100}$	$\frac{226}{100}$
2·06	$2\frac{6}{100}$	$\frac{206}{100}$
4·6	$4\frac{60}{100}$	$\frac{460}{100} = \frac{46}{10}$

6.



Reflect

Reena is incorrect as $\frac{35}{10}$ = 3·5. Instead, 3·05 = $\frac{305}{100}$.
Encourage children to explain with the use of pictorial representations such as place value counters.

Day 3:

→ pages 142–144

1. a) $0{\cdot}004 = \frac{4}{1{,}000}$

b) $0{\cdot}024 = \frac{24}{1{,}000}$

2. a) 5 squares shaded

$\frac{50}{1{,}000} = \frac{5}{100} = 0{\cdot}05$

b) 90 squares shaded

$\frac{900}{1{,}000} = \frac{90}{100} = \frac{9}{10} = 0{\cdot}9$

3.

Decimal	0·002	0·02	0·251	0·25	0·2
Fraction	$\frac{2}{1{,}000}$	$\frac{20}{1{,}000}$	$\frac{251}{1{,}000}$	$\frac{250}{1{,}000}$	$\frac{200}{1{,}000}$

Decimal	1	1·001	1·251	1·25	0·000
Fraction	$\frac{1{,}000}{1{,}000}$	$\frac{1{,}001}{1{,}000}$	$\frac{1{,}251}{1{,}000}$	$1\frac{250}{1{,}000}$	$\frac{0}{1{,}000}$

4. a) $0{\cdot}2 = 0{\cdot}20 = 0{\cdot}200$ $\frac{2}{10} = \frac{20}{100} = \frac{200}{1{,}000} \left(= \frac{1}{5}\right)$

b) $0{\cdot}07 = 0{\cdot}070$ $\frac{7}{100} = \frac{70}{1{,}000}$

c) $0{\cdot}35 = 0{\cdot}350$ $\frac{35}{100} = \frac{350}{1{,}000} \left(= \frac{7}{20}\right)$

5. a) Answers will vary. Parts should total $0{\cdot}01 \left(= \frac{10}{1{,}000}\right)$.

For example, $\frac{1}{1{,}000}$ and $\frac{2}{1{,}000}$ and $\frac{7}{1{,}000}$ or $\frac{5}{1{,}000}$ and $\frac{3}{1{,}000}$ and $\frac{2}{1{,}000}$.

b) Answers will vary. Parts should total $\frac{1{,}600}{1{,}000} (= 1{\cdot}6)$.

For example 1 and $\frac{600}{1{,}000}$ or 1 and $\frac{6}{10}$ or $\frac{800}{1{,}000}$ and $\frac{800}{1{,}000}$ or $\frac{95}{100}$ and $\frac{65}{100}$.

Reflect

$\frac{3}{100}$ and $\frac{30}{1{,}000}$ are both equivalent to 0·03.

Explanations may vary. Children may say they can check by using division as $3 \div 100 = 0{\cdot}03$ and $30 \div 1000 = 0{\cdot}03$.

Day 4:

→ pages 145–147

1. a) 0·225 b) 2·205 c) 1·166

2. a) No counters in O column, 4 counters in Tth column, 2 counters in Hth column, 5 counters in Thths column

b) No counters in O column, 4 counters in Tth column, no counters in Hth column, 5 counters in Thths column

3. 1·12

4. a) 3·91 3·95 3·98

b) 3·989 3·997 4·002

5. The mistake is that they think each interval represents 1 thousandth when in fact they represent 1 hundredth. The numbers should be labelled 0·11 and 0·19.

6. a) There are three possible solutions: 0·231, 0·462 and 0·693

b) There are four possible solutions: 8·003, 8·513, 9·004 and 9·514

Reflect

Answers may vary. Encourage children to show a pictorial representation as well as a fractional representation. The number has 1 one, 2 tenths, 0 hundredths and 5 thousandths.