



DEEPENING UNDERSTANDING ANSWER SHEET

YEAR 3 PIM – RELATED CALCULATIONS

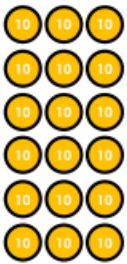
Fluency 1

The fact used was $3 \times 4 = 12$

Fluency 2

Children can either show 80 1p coins multiplied by 3, 8 10p coins multiplied by 3 or 4 20p coins multiplied by 3.

Fluency 3



$$60 \times 3 = 180$$



$$30 \times 6 = 180$$

Related fact:

$$6 \times 3 = 18$$

$$3 \times 6 = 18$$

Fluency 4

$$4 \times 5 = 20$$

$$40 \times 5 = 200$$

$$8 \times 4 = 32$$

$$8 \times 40 = 320$$

$$3 \times 7 = 21$$

$$30 \times 7 = 210$$



Reasoning 1

Modelled DAB Reasoning Responses

D – Millie has not shown a multiplier or division answer as being 10 times greater.

A – When the answer is 10 times bigger, one of the multipliers needs to be 10 times bigger. When the dividend is 10 times bigger, the answer needs to be 10 times bigger.

B – $3 \times 8 = 24$ so 30×8 or 3×80 is 240

$8 \times 3 = 24$ so 80×3 or 8×30 is 240

$24 \div 3 = 8$ so $240 \div 30 = 8$ or $240 \div 3 = 80$

$24 \div 8 = 3$ so $240 \div 80 = 3$ or $240 \div 8 = 30$

Reasoning 2

Modelled DAB Reasoning Response

D – You can't make it 10 times bigger by just adding a 10.

A – By just adding a 10 counter, Jane has made 18.

B – To make the array 10 times bigger she needs to change each 1 counter to a 10 counter.

Reasoning 3

Modelled DAB Reasoning Response

D – False

A – The array shows 80×3

B – Because the counters are each worth 10, the 8 is worth 80.

Reasoning 4

Modelled DAB Reasoning Response

D – True

A – $180 \div 3 = 60$

B – If you know that $3 \times 6 = 18$ then you also know that $18 \div 3 = 6$



When you multiply the multiplier by 10 you multiply the answer by 10 too so when the dividend is 10 times greater, the answer is 10 times greater too.

Download our 'DAB' posters to support reasoning in your classroom:

<https://www.deepeningunderstanding.co.uk/product/dab-reasoning-posters/>

Problem Solving 1

There are multiple solutions. Answers could include:

$$240 \div 6 = 40$$

$$240 \div 4 = 60$$

$$240 \div 40 = 6$$

$$240 \div 60 = 4$$

$$60 \times 4 = 240$$

$$40 \times 6 = 240$$

$$4 \times 60 = 240$$

$$6 \times 40 = 240$$

$$6 \times 4 = 24$$

$$4 \times 6 = 24$$

Problem Solving 2

There are multiple solutions. Answers could include:

Ranjit: $5p + 5p = 10p$

Asha: $2p + 2p + 2p + 2p + 2p = 10p$

Alfie: $10p \times 10 = 100p$

Caleb: £1



Ranjit: $10p + 10p = 20p$

Asha: $5p \times 4 = 20p$

Alfie: $10p \times 20 = 200p$

Caleb: £2

Ranjit: $1p \times 4 = 4p$

Asha: $2p + 2p = 4p$

Alfie: $10p \times 4 = 40p$

Caleb: $20p \times 2 = 40p$

