

Northoaks Primary School

Primary 5 Mathematics Workshop for Parents

16 April 2018 (Monday)



Single Unchanged Quantity

Q1

	Lily	Devi
Before	2 units x 3 = 6 parts	1 unit x 3 = 3 parts
Change	- 120	
After	1 part	3 parts

units \neq parts


6 parts – 1 part = 5 parts


5 parts = 120

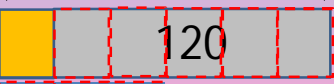
1 part = $120 \div 5$
= 24


6 parts (Lily) = 24×6
= **144**

Answer: 144 cards

Lily 

Devi 

Lily 

Devi 

A horizontal arrow with a question mark spans the width of the dashed red boxes, indicating that the total value of the parts in both Lily's and Devi's boxes is 120.

Q2

	Girls	Boys
Before	2 units	3 units
Change	+ 70	
After	4 parts x 3 = 12 units	1 part x 3 = 3 units

units \neq parts

10 units \rightarrow 70

1 unit = $70 \div 10$
= 7

3 units = 3×7
= **21**

Answer: 21 boys

Q3

	Dan	Mark
Before	50	100
	1 unit	2 units
Change		- 15 erasers
After	60	100
	3 parts	5 parts

units \neq parts

	Dan	Mark
Before	1 unit $\times 3 =$ 3 parts	2 units $\times 3 =$ 6 parts
Change		- 15 erasers
After	3 parts	5 parts

1 part $\rightarrow 15$
3 units $= 3 \times 15 = 45$

Answer: 45 erasers

Q4

	Girls	Boys
Before	5 units $\times 2 =$ = 10 parts	3 units $\times 2 =$ 6 parts
Change	- ?	
After	1 part $\times 3 =$ 3 units	2 parts $\times 3 =$ 6 units

units \neq parts



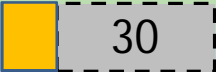

Total parts $\rightarrow 10 + 6 = 16$
 16 parts $= 928$
 1 part $= 928 \div 16 = 58$
 7 parts $= 7 \times 58 = 406$

Answer: 406 girls

Total Unchanged Quantities

Q1

	Ali	Bala	Total
Before	1 unit x 4 = 4 units	1 unit x 4 = 4 units	2 units x 4 = 8 units
Change	- 30	+ 30	No change
After	1 unit	7 units	8 units

Ali		3 units	→	30
Bala		1 unit	=	10
Ali		8 units	=	8 x 10
Bala			=	80

Answer: 80 marbles

Q2

	Ben	Daniel	Total
Before	1 unit x 2 = 2 units	3 units x 2 = 6 units	4 units x 2 = 8 units
Change	+ 72	- 72	
After	5 units	3 units	8 units

$$\begin{aligned}
 3 \text{ units} &\rightarrow 72 \\
 6 \text{ units} &= (72 \div 3) \times 6 \\
 &= 144
 \end{aligned}$$

Answer: \$144

Q3

	Container	Sack	Total
Before	9 units	5 units	14 units
Change	- 20 kg	+ 20 kg	
After	2 units x 2 = 4 units	5 units x 2 = 10 units	7 units x 2 = 14 units

$$\begin{aligned}
 5 \text{ units} &\rightarrow 20 \\
 14 \text{ units} &= (20 \div 5) \times 14 \\
 &= 56
 \end{aligned}$$

Answer: 56 kg

Q4

	Aini (\$2)	Sean (\$5)	Total
Before	7 units	5 units	12 units
Change	- 24	+ 24	
After	1 unit x 3 = 3 units	3 units x 3 = 9 units	4 units x 3 = 12 units

$$\begin{aligned}
 4 \text{ units} &\rightarrow 24 \\
 5 \text{ units (Sean)} &= (24 \div 4) \times 5 \\
 &= 30
 \end{aligned}$$


$$\text{Money (Sean)} \rightarrow 30 \times \$5 = \mathbf{\$150}$$


Answer: \$150


Difference Unchanged Quantities


Question 1

units ≠ parts

Mr Lim  5 units = 500

Mr Lee  1 unit = $500 \div 5$
= 100

Mr Lim  8 units = 100×8
= **800**

Mr Lee  8 units = **800**

Answer: \$800

Q1

	Mr Lim	Mr Lee	Difference
Before	3 units $\times 2 =$ 6 parts	4 units $\times 2 =$ 8 parts	1 unit $\times 2 = 2$ parts
Change	-\$500	-\$500	
After	1 part	3 parts	2 parts

5 parts = 500

1 part = $500 \div 5$
= 100

8 parts = 100×8
= **800**

Answer: \$800

Q1

At first → Mr Lim : Mr Lee : Difference

3 : 4 : 1

6 : 8 : 2

After → Mr Lim : Mr Lee : Difference

1 : 3 : 2

$$8 \text{ units} - 3 \text{ units} = 5 \text{ units}$$

$$5 \text{ units} = 500$$

$$1 \text{ unit} = 500 \div 5$$

$$= 100$$

$$8 \text{ units} = 100 \times 8$$

$$= \mathbf{800}$$

Answer: \$800

Q2

units ≠ parts

	Adults	Children	Difference
Before	1 unit (369)	3 units	2 units
Change	- ?	- ?	
After	1 part	4 parts	3 parts

$$3 \text{ parts} = 369 \times 2$$

$$= 738$$

$$1 \text{ part} = 738 \div 3$$

$$= \mathbf{246}$$

Answer: 246 adults

Q3 Before → Boys : Girls : Difference
20 : 80 : 60
2 : 8 : 6

After → Boys : Girls : Difference
40 : 100 : 60
4 : 10 : 6

$$\begin{aligned}\text{Difference} &\rightarrow 4 - 2 \\ &= 2\end{aligned}$$

$$2 \text{ units} = 10$$

$$\begin{aligned}1 \text{ unit} &= 10 \div 2 \\ &= 5\end{aligned}$$

$$\begin{aligned}\text{Total units} &= 4 + 10 \\ &= 14\end{aligned}$$

$$\begin{aligned}14 \text{ units} &= 14 \times 5 \\ &= \mathbf{70}\end{aligned}$$

Answer: 70 children

2 Changed Quantities

Q1

	Ann	Barry
Before	3 units x 2 = 6 units	4 units x 3 = 12 units
Change	+ 9 x 2 = + 18	- 18 x 3 = - 54
After	3 parts x 2 = 6 parts	2 parts x 3 = 6 parts

units ≠ parts

Using the principle of common multiple:

Ann	6 units	18	
Barry	6 units	18	54

←————— 12 units —————→

6 units = $2 \times 9 + 3 \times 18$
 = 72

1 unit = $72 \div 6$
 = 12

3 units (Ann) = 3×12
 = **36**

Answer: 36 stickers

Q2

	Red	Blue
Before	3 units x 10 = 30 units	2 units x 7 = 14 units
Change	- 55 x 10 = - 550	- 10 x 7 = - 70
After	7 parts x 10 = 70 parts	10 parts x 7 = 70 parts

units ≠ parts

Red	30 units	16 units	70
Blue	14 units	16 units	50

By comparison,

$30 - 14 = 16$
 16 units = $10 \times 55 - 10 \times 7$
 = 480

1 unit = $480 \div 16$
 = 30

5 units = 5×30
 (Total) = **150**

Answer: 150 beads