

## Algebra 2 - forming expressions

### Example

Cakes cost 50p each      Cost = 50c

### Practise

Look at each sentence below. How could they be written as number sentences using algebra? Consider what the variable is.

- 1) Steven sharpens 4 pencils every minute.
- 2) Aaron peels 15 potatoes an hour.
- 3) Wayne Rooney gets paid £300,000 per week.
- 4) Subway charge £3 per sub.
- 5) Eggs cost 20p each.
- 6) Grapes cost £1.50 per pack.
- 7) A plumber charges £20 for every hour he works at a job.
- 8) Water costs 10p for every minute it is left running.

### Fluency

- 1) A plumber charges £12 per hour. At the minute he is offering a discount of £4 for each job he does. Write a formula to calculate how much he should charge his customers.
- 2) Cakes cost 40p each and a bag costs 20p. Write a formula to work out how much cakes cost. Use this formula to calculate how much 12 cakes would cost.
- 3) Write a formula for the following statement: Three times a number and add seven to get the answer 37. What is the original number?

### Reasoning

- 1) A taxi driver charges £4 at the start of each journey. For every mile covered, another 30p is added to the fare. The driver writes the following formula: Cost of journey =  $4 + \text{number of miles} \times .30$  Is the formula correct? Prove it.
- 2) John and Sandra are using the following formula to work out what they should charge for three hours work: Cost in pounds =  $40 + 20 \times \text{number of hours}$ . John writes down £180. Sandra writes down £100. Who do you agree with? Why?

### Problem Solving

- 1) Steven has 92p. He buys yoyos (y) costing 11p each and lollies (l) costing 4p each. Can you write a formula to solve how many he buys?  
Can you find more than one set of numbers to solve his problem?

## Algebra Answers 2

### Practise

Look at each sentence/ story below. How could they be written as number sentences using algebra? Consider what the variable is.

1) Pencils sharpened =  $4m$

2) Potatoes peeled =  $15h$

3) Wages =  $300000w$

4) Cost =  $3s$

5) Cost =  $.20e$

6) Cost =  $1.50g$

7) Cost =  $20h$

8) Cost =  $.10m$

### Fluency

1) Cost =  $12h - 4$

2) Cost of cakes =  $40c + 20$  12 cakes cost £5

3)  $3n + 7 = 37$  Original number = 10

### Reasoning

1) Formula is correct - Should use proof of trying the calculation to help justify their answer

2) Sandra is right - Should use proof of trying the calculation to help justify their answer

### Problem Solving

1) Steven has 92p. He buys yoyos (y) costing 11p each and lollies (l) costing 4p each.  $4y + 12l = 92$