

TREND

Algebra / Logic Items B

Approach: Independent

Level: Year 4 and year 8

Focus: Varied algebra items.

Resources: None.

Questions/instructions

1. Write a rule for each number pattern using \blacksquare and \bullet , then complete them. The first two are done for you.

$$\blacksquare = \bullet \times 9$$

\bullet	1	2	3	4	5	6	7
\blacksquare	9	18	27	36	45	54	63

$$\blacksquare = (\bullet \times 3) + 1$$

\bullet	1	2	3	4	5	6	7
\blacksquare	4	7	10	13			

1. $\blacksquare = \bullet \times 7$

\bullet	1	2	3	4	5	6	7
\blacksquare	7	14	21	28	35	42	49

2. $\blacksquare = (\bullet \times 4) - 3$ (or equivalent)

\bullet	1	2	3	4	5	6	7
\blacksquare	1	5	9	13	17	21	25

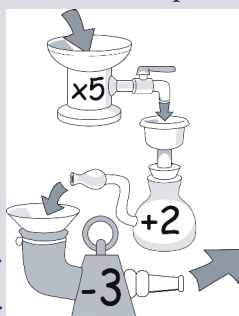
3. $\blacksquare = (\bullet \times 10) - 6$ (or equivalent)

\bullet	1	2	3	4	5	6	7
\blacksquare	4	14	24	34	44	54	64

4. $\blacksquare = (\bullet \times .5) + 7$ (or equivalent)

\bullet	1	2	3	4	5	6	7
\blacksquare	7.5	8	8.5	9	9.5	10	10.5

Use the machine to finish putting numbers in the spaces on the card.



5. Number in: 2, Number out: 9
6. Number in: 7, Number out: 34
7. Number in: 12, Number out: 59
8. Number in: 3, Number out: 14
9. Number in: 10, Number out: 49

% responses
2001 ('97) 2001 ('97)
year 4 year 8



10. Squares	1	2	3	4	5	6
Matches	4	7	10	13	16	19

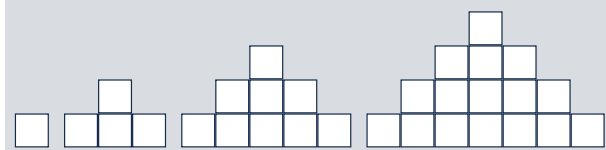
% responses
2001 ('97) 2001 ('97)
year 4 year 8

11. Predict the number of matches needed to make 20 squares.

61

•

22 (•)



year 4 year 8

12. How many squares are in the 5th building?

25

15 (•)

42 (•)

13. How many squares are in the 10th building in this pattern?

100

(•)

11 (•)

14. Lee delivers newspapers. Let x represent the number of newspapers that Lee delivers each day.

Which statement represents the total number of newspapers that Lee delivers in 5 days?

A $5 \times x$

A 35 (21) 69 (66)

B $5 + x$

C $x \div 5$

D $(x + x) \times 5$

15. The cost to rent a motorbike is given by the following formula:

$$\text{Cost} = (\$3 \times \text{number of hours}) + \$2$$

Fill in this table:

Time in Hours	Cost in \$
1	5
4	14
5	17

both correct

•

48 (47)

one correct

•

16 (11)

