

Answers

Yellow



Maths Challenge Cards

- Many solutions possible
Examples include:
 $\$2 + \$1 + 50c + 10c + 5c$
 $(3 \times \$1) + (3 \times 20c) + 5c$
 $(7 \times 50c) + (3 \times 5c)$
 $(10 \times 20c) + (16 \times 10c) + 5c$
- Circle 1 $\rightarrow 5 + 6 + 9$
Circle 2 $\rightarrow 11 + 8 + 1$
Circle 3 $\rightarrow 10 + 7 + 3$
Circle 4 $\rightarrow 9 + 8 + 3$
Circle 5 $\rightarrow 12 + 3 + 5$
Circle 6 $\rightarrow 4 + 7 + 9$
- Many solutions possible
Teacher to assess diagrams
- Logan will write:
 $5 \text{ days} \times 2 \text{ pages} \times 12 \text{ weeks}$
 $= 120 \text{ pages}$
Ashley will write:
 $5 \text{ days} \times \frac{1}{2} \text{ page} \times 12 \text{ weeks}$
 $= 30 \text{ pages}$
Pages in work books:
Ashley $200 - 30 = 170$
Logan $200 - 120 = 80$
Ashley has 90 more pages
- Many answers possible
Examples include:
 $25 \rightarrow 21 + 4$ or $10 + 15$
 $25 \rightarrow 12 + 8 + 5$ or $5 + 17 + 3$
 $25 \rightarrow 100 \div 4$
 $25 \rightarrow 32 - 7$ or $75 - 50$
 $25 \rightarrow 5 \times 5$ or 1×25
 $25 \rightarrow 30 - 5$ or $20 + 5$
 $25 \rightarrow (90 \div 6) + (5 \times 2)$
- Triangular Prism
- a) $(24 \times 3) + 18 = 90$ beads
b) $24 \times 4 = 96$ beads
She needed 6 more beads
- Two digits numbers making 8
17, 26, 44, 53, 62, 71, 80
- Teacher to assess graphs
- One solution possible:
5 children $\rightarrow 5 \times \$7 = \35
1 adult $\rightarrow 1 \times \$14.50 = \14.50
Total = \$49.50
- Top left grid Rule = +3
[9, 10, 12, 14]
Top right grid Rule = -8
[20, 13, 14, 16, 25, 17]
Bottom left grid Rule = +5
[17, 14, 21, 23, 20, 25]
Bottom right Rule = -9
[6, 20, 11, 30, 21, 26]
- 6 choices \times 6 choices =
36 possible solutions
Teacher to assess drawings
- Raoul spent
 $\$1.20 + \$1.50 + \$1.85 = \4.55
Change from \$5 $\rightarrow 45c$
 $20c + 10c + 10c + 10c + 5c$
- a) 16, 19 [uses + 3]
b) 27, 15 [uses - 6]
c) 16, 32 [doubling]
d) 41, 50 [uses + 9]
e) 36, 12 [uses - 12]
f) 36, 43 [uses + 7]

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- 15. x1 triangles = 8
x2 triangles = 4
x4 triangles = 2
Total triangles = 14

- 16. Billy is 4 years old
Carly is 6 years old
Nick is 12 years old

17.

6	14	13
18	11	4
9	8	16

- 18. Seven letters fit the rule:
A F H K N Y Z

- 19. 26 pages x 6 nights = 156 pg

- 20. Answers as per card layout:

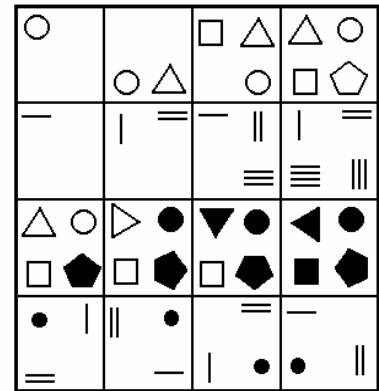
10	5
25	12
5	13
60	10
9	
3	

- 21. Many solutions possible
Teacher to assess tallies
Least tosses to 50 ⇒ 9 tosses

- 22. Student numbers:
(5 x 15) + (2 x 10) = 95
95 sausages eaten & 25 left
95 x 2 each = 190 sausages

- 23. 19 → a e i
20 → b k n
21 → d f j
22 → h l m
23 → c g o

- 24.



- 25. Lea bought:
3 x 50c = \$1.50
Kelsey bought:
6 x 30c = \$1.80
Change from \$5:
\$5 - \$1.50 - \$1.80 = \$1.70

- 26. a) 8:05am, 7:35am
b) 3:05pm, 3:20pm
c) r, p
d) N, q
e) 35, 41

- 27. Teacher to assess graphs

- 28. 15 combinations possible:
A, O, M, B
AO, AM, AB, OM, OB, MB
AOM, AOB, AMB, OMB
AOMB

- 29. Many solutions possible
Teacher to assess work

Answers

Yellow



30. Many solutions possible
Teacher to assess work
31. Three solutions possible:
 $(2 \times 20c) + (4 \times 10c)$
 $(3 \times 20c) + 10c + (2 \times 5c)$
 $50c + 10c + (4 \times 5c)$
32. Many solutions possible
Example codes:
FED 654
FED 564
DEF 564
DEF 645
33. Burger order, top down:
Bun
Cheese
Tomato
Meat
Lettuce
Pickle
Bun
More than 1 solution possible
34. Day 1 → 1 snake → 1 in total
Day 2 → 2 snakes → 3
Day 3 → 3 snakes → 6
Day 4 → 4 snakes → 10
Day 5 → 5 snakes → 15
Day 6 → 6 snakes → 21
Day 7 → 7 snakes → 28
35. Pair combinations = 80
 $63 + 17$ $56 + 24$
 $40 + 40$ $30 + 50$
 $78 + 2$ $39 + 41$
 $80 + 0$ $1 + 79$
 $35 + 45$ $60 + 20$

Maths Challenge Cards

36. 240 mins = 4 hours
 $\frac{1}{2}$ hour episodes
 $8 \times \frac{1}{2}$ episodes = 4 hours
Denzel could tape 8 episodes
37. Ella may have had:
5 or 11 or 17 marbles
38.
$$\begin{array}{ccc} & 1 & 5 \\ & 7 & 6 & & 4 & 2 \\ 2 & 5 & 3 & & 1 & 6 & 3 \end{array}$$
39. a) D2 & D3
b) Circle
c) Octagon
d) No
e) B2
40. Paul is 15 years old
Megan is 8 years old
Jess is 16 years old
Total of ages is 39 years
41. a) 21
b) 131
42. Many solutions possible
Teacher to assess drawings
43. Steve shot 22 baskets
Jayden shot 15 baskets
Score difference
 7 baskets \Rightarrow 14 points
44. a) 57 , forty-three
b) fifty-seven , seventy-six
c) 25 , twenty-six
d) 47 , 36
e) $9 \frac{1}{2}$, 11

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45. Many solutions possible
Teacher to assess diagrams
46. Many solutions possible
Example orders include:
a) Sandwich + Cola + Cake
 $1.25 + .75 + .45 = \$2.45$
Change from \$3 = 55c
b) Rice + Juice + Fruit
 $.90 + 1 + .65 = \$2.55$
Change from \$3 = 45c
47. Answers as per card layout
- | | |
|----|---|
| 7 | 3 |
| 16 | 4 |
| 6 | 3 |
| 8 | 3 |
| 3 | 2 |
| 13 | 3 |
48. Gobstopper positions
purple orange brown
yellow blue red
49. a) 3 squares = 6 circles
b) 2 squares = 8 rectangles
ext) 5 circles = 10 rectangles
Teacher to assess diagrams
50. a) $+4 \Rightarrow 9$ & $-2 \Rightarrow 7$
b) $+4 \Rightarrow 8$ & $-7 \Rightarrow 1$
51. Teacher to assess graphs
5 letters \rightarrow 3, 7, 8
6 letters \rightarrow 11, 12, 20
7 letters \rightarrow 15, 16
8 letters 13, 14, 18, 19
9 letters \rightarrow 17
Seventeen has most letters

Maths Challenge Cards

52. 8am + 9 hours = 5pm
53. a) March , December
b) Wednesday , Friday
c) 10k12 , m14o
pattern is actually in order
with digits and numbers
swapping: 1 b 3 d 5 f 7 h
d) 24, 18
e) 45, 36
54. Many solutions possible
Teacher to assess drawings
55. Hernando uses per day:
2 times x 2 grams = 4 grams
 $120 \text{ grams} \div 4 \Rightarrow 30 \text{ days}$
- 56.
- | | | | |
|--------------|--------------|--------------|--------------|
| 6 | 4 | 7 | 2 |
| 3 | 7 | 5 | 2 |
| 6 | 5 | 5 | 5 |
| 8 | 1 | 4 | 6 |
57. a) Mice locations:
A9 , B4 , A1, I1
b) Closest mouse is a draw
with A9, B4 and I1 all
8 moves away.
c) Many solutions possible
Teacher to assess work

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Maths Challenge Cards

58. First week
 $5 \text{ days} \times 100\text{m} = 500\text{m}$
 Second week
 $5 \text{ days} \times 150\text{m} = 750\text{m}$
 a) $5 \text{ days} \times 2 = 10 \text{ laps more}$
 b) $500\text{m} + 750\text{m} = 1250\text{m}$

59.

4	5	2
6	7	9
8	1	3

60. Many solutions possible
 Teacher to assess work

61. a) June 15th → July 1st
 is 16 days
 b) 1968 → 2004
 is 36 years

62. Pair combinations = 125
 $107 + 18$ $62 + 63$
 $100 + 25$ $99 + 26$
 $93 + 32$ $80 + 45$
 $55 + 70$ $124 + 1$
 $6 + 119$ $68 + 57$

63. Squares = 5
 $x1 \rightarrow 4$
 $x4 \rightarrow 1$
Rectangles = 4
 $\rightarrow 4$
Triangles = 16
 $x1 \rightarrow 8$
 $x2 \rightarrow 4$
 $x4 \rightarrow 4$

64. Each class:
 $\frac{1}{3} \times 30 = 10 \text{ girls per class}$
 $\Rightarrow 20 \text{ boys each class}$
 School → 6 classes:
 Boys $6 \times 20 = 120$
 Girls $6 \times 10 = 60$
 Overall = 180 students

65. $40 + 5 \rightarrow 45 + 20 \rightarrow 65 - 5$
 $\rightarrow 60 + 1 \rightarrow 61 - 5 \rightarrow 56 +$
 $20 \rightarrow 76 - 10 \rightarrow 66 - 20$
 $\Rightarrow 46$

Teacher to assess work

66. a) 22 children in the class
 b) January, March, May,
 June, September,
 November
 c) First half of year with 12
 d) 5 children

67. $12 + 4 + 2 = 18$
 $18 \div 3 = 6 \text{ books each pile}$

68.

YES	ƎƎY	ƎƎ2	ƎƎƎ

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69. Four solutions possible:
2 rows x 18 seats each
3 rows x 12 seats each
4 rows x 9 seats each
6 rows x 6 seats each
70. Central Station at 9:30am
Midland Station at 9:44am
→ 7 minute stop
→ 15 minute journey
Westland Station at 10:06am
→ 6 minute wait
→ 20 minute journey
Inland Station at 10:32am
71. a) 37 b) 258
72. a) $165\text{m} + 210\text{m} + 75\text{m} = 450\text{m}$
b) $195\text{m} + 90\text{m} + 150\text{m} = 435\text{m}$
73. $78 - 6 = 72$
 $72 \div 3 = 24$
Big bus = 24 seats
($\frac{1}{2}$) Mini bus = 6
74. Students to create list or table
8th shape → blue triangle
14th shape → blue pentagon
19th shape → red square
27th shape → green square
- 75.
- | | <u>Lunch</u> | <u>Breakfast</u> |
|----------|--------------|------------------|
| Isabelle | 4 | 2 |
| Austin | 6 | 4 |
| Mark | 6 | 2 |
| Cathy | 2 | - |
| Sarah | 2 | 1 |
| Total | ⇒ | 29 slices |

Maths Challenge Cards

76. 6 apples @ 50c = \$3.00
3 bananas @ 70c = \$2.10
2 "grapes" @ \$2 = \$4.00
1 orange @ 60c = \$0.60
1 lemon @ 40c = \$0.40
- Total spent ⇒ \$10.10
77. a) Total pets:
 $6 + 3 + 10 + 1 = 20$
b) 7 more dogs than birds
c) 5 more cats than fish
d) 10 dogs + 6 cats =
16 children with 4 leg pets
78. 12 pets altogether
7 are 4 legged
Hamsters = 3
Dogs = 1
Cats = 3
5 have less than 4 legs
Fish = 2
Birds = 3
79. Beans = 9 plants
3 rows x 3 plants
Tomatoes = 8 plants
2 rows x 4 plants
Total beans:
9 plants x 6 = 54 beans
Total tomatoes:
8 plants x 5 = 40 tomatoes

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Maths Challenge Cards

80. 1st = Elephant → 81
5+12+5+16+8+1+14+20
2nd = Horse → 65
8+15+18+19+5
3rd = Tiger → 59
20+9+7+5+18
4th = Chicken → 53
3+8+9+3+11+5+14
5th = Zebra → 52
26+5+2+18+1
- E81. 2 cubs x 5 spots = 10 spots
3 fish x 3 spots = 9 spots
Total ⇒ 19 spots
- E82. Across width:
28 + 7 + 28 + 7 = 70cm
Across depth:
14 + 7 + 14 + 7 = 42cm
Total ribbon:
112cm + some for the bow
- E83. Pizza divided into 12 pieces
Vince $\frac{1}{4}$ → 3 pieces
Carlos → $1\frac{1}{2}$ pieces
George → 5 pieces
Ari → $12 - 9\frac{1}{2} \Rightarrow 2\frac{1}{2}$ pieces
- E84. 8 children → 3 laps
3 x 400m = 1,200m each
8 x 1200m = 9,600m group
5 children → 4 laps
4 x 400m = 1,600m
5 x 1600m = 8,000m group
11 children → 5 laps
5 x 400m = 2,000m
11 x 2000m = 22,000m grp
2 children → 6 laps
6 x 400m = 2,400m
2 x 2400m = 4,800m grp

- E84. continued
a) Furthest two children:
2400m each
b) 1 mile = 1600m
18 ran 1 mile or more
c) Class total:
9600m + 8000m +
22,000m + 4,800m
⇒ 44,400m

- E85. Tram is quickest
7 + 18 = 25 minutes
Train
15 + 12 = 27 minutes
Bus
6 + 24 = 30 minutes

- E86. Number of lines for digits:
2 lines → 1
4 lines → 4, 7
5 lines → 2, 3, 5
6 lines → 0, 6, 9
7 lines → 8

Numbers which use 6 lines:
1 digit: 0 6 9
2 digits: 14 17 41 71
3 digits: 111

There may be some variation
with calculator layout.

- E87. Two solutions each:
Aidan scored 17
1 + 1 + 15
1 + 8 + 8
Jacob scored 22
6 + 8 + 8
1 + 6 + 15



E88. Many solutions possible:
Examples include:

	<u>Bikes</u>	<u>Trikes</u>	<u>Train</u>
a)	2 → 4	4 → 12	1 → 4
b)	3 → 6	2 → 6	2 → 8
c)	5 → 10	2 → 6	1 → 4

Each totals to 20 wheels

E89. Sour worms:

$12 \times 3 = 36 \rightarrow 3$ packs

Minties:

$12 \times 4 = 48 \rightarrow 4$ packs

Gobstoppers

$12 \times 2 = 24 \rightarrow 2$ packs

Chocolate bars

$12 \times 1 = 12 \rightarrow 1$ pack

Caramel hearts

$12 \times 5 = 60 \rightarrow 5$ packs

Total number of packs

$3 + 4 + 2 + 1 + 5 = 15$

E90. Teacher to assess tables

<u>Name</u>	<u>Brother</u>	<u>Sister</u>
Trinity	-	-
Leo	-	-
Elijah	-	2
Phoebe	-	2
Shaq.	1	1
Lily	1	1
Kate	2	-
Pedro	2	-
Sofia	1	2

Extensions 91 → 100

These are open-ended questions,
with no set solutions.

Please refer to introductory Sheet 3
for a thorough explanation.