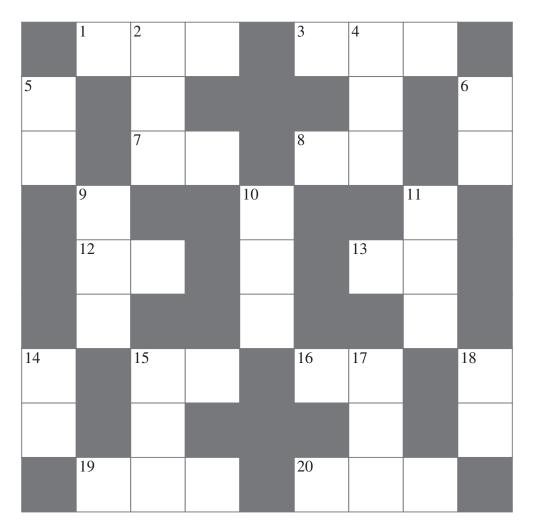


United Kingdom Mathematics Trust

## Primary Team Maths Resources 2018

### Supervisor's booklet

Please ensure that students do not have access to this booklet, and take care to hold it so that answers cannot be seen.



#### Across

- 1. Lowest common multiple (LCM) of 15 and 33 (3)
- 3. The square of one seventh of 6 Down (3)
- 7. 14 Down + the square root of 14 Down (2)
- 8. A multiple of 3 and 4 (2)
- 12. The number of hours in 840 minutes (2)
- 13. A number less than 6 Down and greater than 14 Down (2)
- 15. Half of 8 Across (2)
- 16. The nearest prime number to 15 Across (2)
- 19. The average of 1 Across and 17 Down (3)
- 20. 10 Down 4 times 1 Across (3)

#### Down

- 2. 10 Down 20 Across + 9 (3)
- 4. 3 times 17 Down 14 Down (3)
- 5. Highest common factor (HCF) of 8 Across and 4 Down (2)
- 6. 7 times 14 (2)
- 9. 6 Down + 12 Across (3)
- 10. The sum of the digits is 27 (3)
- 11. 1 Across + 15 Down
- 14. (19 Across 15 Down) squared (2)
- 15. The difference between 17 Down and 6 Down
- 17. A cube number whose digits add to 10 (3)
- 18. Sum of the digits in the bottom row (2)

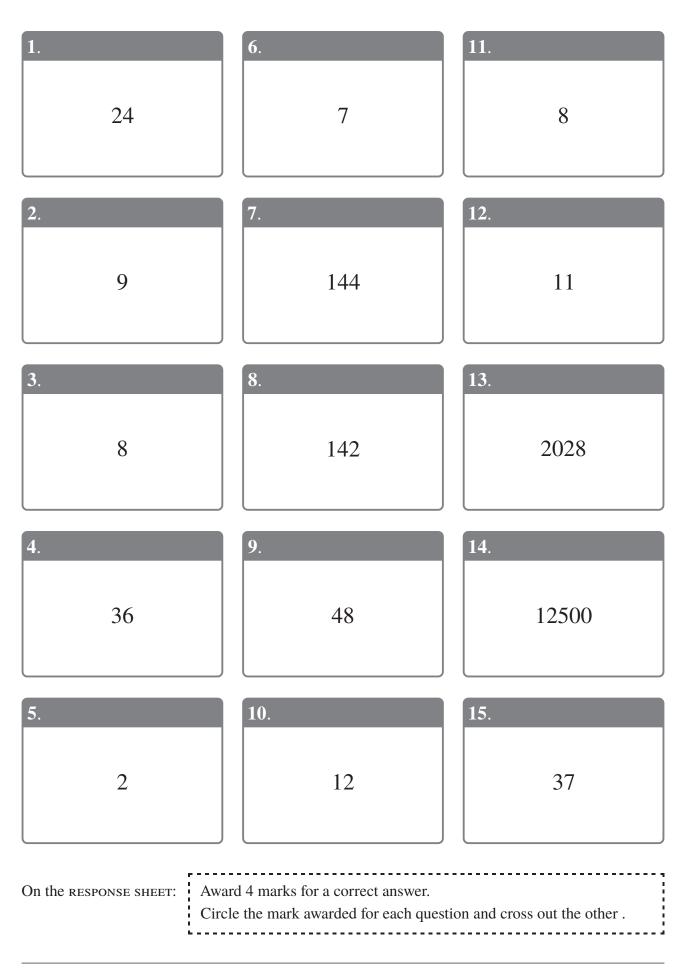
(3)

(3)

Crossnumber

|                 | <sup>1</sup> 1  | <sup>2</sup> 6  | 5 |                 | <sup>3</sup> 1  | <sup>4</sup> 9  | 6               |                 |
|-----------------|-----------------|-----------------|---|-----------------|-----------------|-----------------|-----------------|-----------------|
| <sup>5</sup> 1  |                 | 6               |   |                 |                 | 4               |                 | <sup>6</sup> 9  |
| 2               |                 | <sup>7</sup> 9  | 0 |                 | <sup>8</sup> 4  | 8               |                 | 8               |
|                 | <sup>9</sup> 1  |                 |   | <sup>10</sup> 9 |                 |                 | <sup>11</sup> 4 |                 |
|                 | <sup>12</sup> 1 | 4               |   | 9               |                 | <sup>13</sup> 9 | 1               |                 |
|                 | 2               |                 |   | 9               |                 |                 | 0               |                 |
| <sup>14</sup> 8 |                 | <sup>15</sup> 2 | 4 |                 | <sup>16</sup> 2 | <sup>17</sup> 3 |                 | <sup>18</sup> 2 |
| 1               |                 | 4               |   |                 |                 | 4               |                 | 6               |
|                 | <sup>19</sup> 2 | 5               | 4 |                 | <sup>20</sup> 3 | 3               | 9               |                 |

### **GROUP ROUND**



#### Relay

SCORESHEET

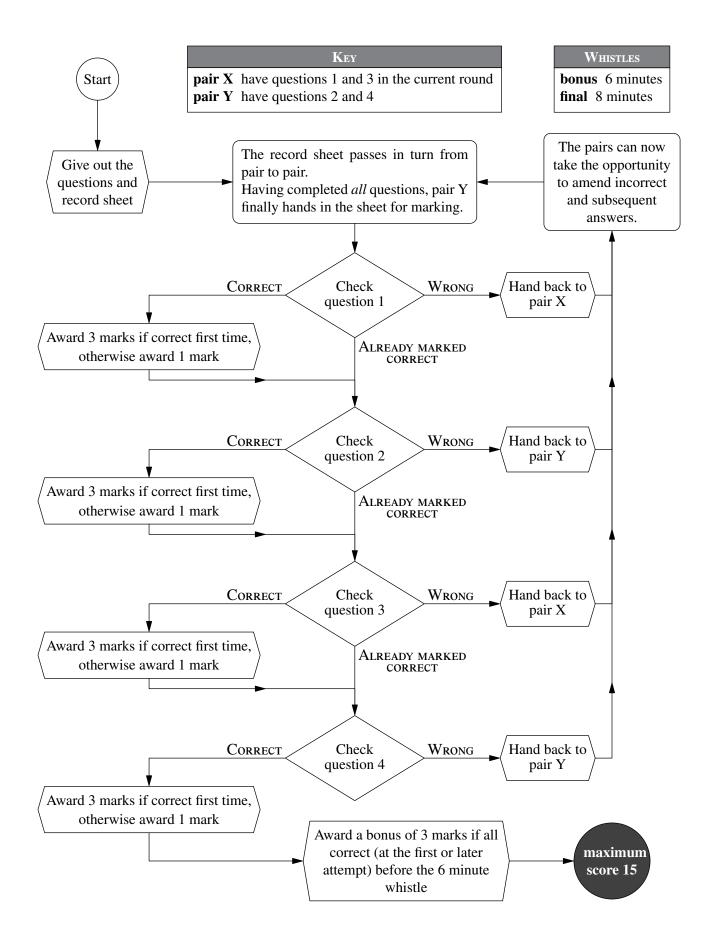
| A2       A7       A12         110       8102 $\pounds$ 74.52         02       02       02         B2       B7       B12 $\pounds$ 1.08       8       1,7 and 10         02       02       02         A3       A8       A13         23       140 $6\frac{1}{2}$ units       02       g       02         B3       B8       B13         101       15       70 $\circ$ 02 $\circ$ 0         A4       A9       A14         1 and 0       6       2       0         B4       2018       150       B14  | Team n     | IUMBER    | Sch  | OOL NAME |                 |                               |            |                             |                                       |
|--|------------|-----------|--|----------|-----------------|-------------------------------|------------|-----------------------------|---------------------------------------|
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  | A1         |           |  | A6       |                 |                               | A11        |                             |                                       |
| BI       B6       B1       E34.90       E34.90 $0/2$ $0/2$ $0/2$ $0/2$ $0/2$ $0/2$ A2       A7       A12 $£74.52$ $0/2$ $0/2$ $0/2$ B2 $0/2$ $0/2$ $0/2$ $0/2$ $0/2$ $0/2$ $0/2$ A3 $0/2$ $0/2$ $0/2$ $0/2$ $0/2$ $0/2$ B3 $0/2$ $0/2$ $0/2$ $0/2$ $0/2$ $0/2$ B4 $0/2$ $0/2$ $0/2$ $0/2$ $0/2$ $0/2$ A5 $9/2$ $0/2$ $0/2$ $0/2$ $0/2$ $0/2$ B5       B10       B15 $0/2$ $0/2$ $0/2$ $0/2$  |            | 8 and 28  |  |          | 86              |                               |            |                             |                                       |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  |            |           | 02   |          | $\mathrm{cm}^2$ | $(0 \ 2)$                     |            | 0                           | (0/2)                                 |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  | <b>B</b> 1 |           |  | B6       |                 |                               | B11        |                             |                                       |
| A2       A7       8102       A12 $0 2$ $0 2$ $0 2$ $110$ $110$ B2       £1.08       B7       B12       1,7 and 10 $0 2$ $0 2$ $0 2$ $0 2$ $0 2$ A3       A8       A13 $1,7$ and 10 $0 2$ $0 2$ $0 2$ $0 2$ $0 2$ B3       B8       B8       B13 $70$ $^{0} 0 2$ $0 2$ $0 2$ $0 2$ $0 2$ A4       1 and 0 $6$ $2^{\circ} 0 2$ $0 2$ $0 2$ $0 2$ $0 2$ $0 2$ B4       2018       B9 $150$ $6$ $2$ $0$ $2$ $0$ A5       95 $£10$ $£79.20$ $8$ $8$ $8$ $8$ B5       B10       B15 $8$ $8$ $8$ $8$ $8$  |            | 22        | ويعتقدون ويعتقدون                                    |          | 0.86            | يونيني ويتبر                  |            | £34.90                      | ويتنبئ ويتبرو                         |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  |            |           |  |          |                 |                               |            |                             |                                       |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  | A2         |           |  | A7       |                 |                               | A12        |                             |                                       |
| B2       B7       B12 $0 2$ $0 2$ $0 2$ $1, 7 \text{ and } 10$ $0 2$ $0 2$ $0 2$ $0 2$ A3       A8       A13 $23$ $140$ $6\frac{1}{2}$ units $0 2$ $g$ $0 2$ $0 2$ B3       B8       B13 $70$ $square units$ $0$ A4       A9       A14 $\frac{4}{7}$ $0$   |            | 110       |  |          | 8102            |                               |            | £74.52                      |                                       |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  |            |           |  |          |                 | (0)(2)                        |            |                             | (0)(2)                                |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  | B2         | 01.00     |  | B7       | 0               |                               | B12        | 1 7 1 1                     |                                       |
| A3       A8       A13 $23$ $140$ $g$ $02$ $g$ $02$ $g$ $02$ B3       B8       B13 $02$ $02$ $02$ A4       A9       A14 $1$ and $0$ $6$ $2$ $0$ $02$ $02$ $02$ $02$ $02$ B4       B9       B14 $117.80$ $02$ $02$ $02$ $02$ $02$ $02$ A5       A10 $150$ $150$ $8$ $million$ $02$ $02$ $02$ $02$ B10       B15 $02$ $02$ $02$   |            | £1.08     |  |          | 8               |                               |            | 1, / and 10                 | المعتمي ومتتمر                        |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  |            |           |  |          |                 |                               |            |                             |                                       |
| units $0 2$ g $0 2$ g $0 2$ $0 2$ $0 2$ B3       101       15       70 $\circ$ $0 2$ $0 2$ $0 2$ $square units$ $0$ A4       A9       A14 $\frac{4}{7}$ $0$ $0$ B4 $0 2$ $^{\circ}$ C $0 2$ $0$ $0$ B4 $0 2$ $^{\circ}$ C $0 2$ $0$ $0$ A5       A10 $150$ $117.80$ $0$ A5       95 $\pounds79.20$ $8$ $0$ million $0 2$ $0 2$ $0$ $0$ B10       B15 $0$ $0$ $0$   | A3         | 00        |  | A8       | 1.40            |                               | A13        | <b>c</b> 1                  |                                       |
| B3       101       15       B13 $^{\circ}$ 0.2       0.2 $^{\circ}$ 0.2         A4       A9       A14         1 and 0       6 $^{\circ}$ 0.2         0.2 $^{\circ}$ 0.2 $^{\circ}$ 0.2         B4       B9       B14       £117.80         0.2 $^{\circ}$ 0.2       0         A5       A10       A15         million       0.2       0.2       0         B5       B10       B15  |            |           |  |          |                 |                               |            | $\mathbf{O}_{\overline{2}}$ |                                       |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  |            | units     |  |          | g               |                               |            |                             |                                       |
| °       0       2 $0$ <th><b>B</b>3</th> <th>101</th> <th></th> <th>B8</th> <th>15</th> <th></th> <th>B13</th> <th>70</th> <th></th> | <b>B</b> 3 | 101       |  | B8       | 15              |                               | B13        | 70                          |                                       |
| A4       A9       A14         1 and 0       6 $\frac{4}{7}$ 0<2       °C       0<2         °C       0<2       0         B4       B9       B14         2018       150       £117.80         0<2       °O       0       0         A5       A10       A15         million       0       2       0         B5       B10       B15  |            |           | $\overline{\mathbb{Q}}$                              |          | 13              | രം                            |            |                             |                                       |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  |            |           |  | 4.0      |                 |                               | 4.1.4      | square units                |                                       |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$   | A4         | 1 and $0$ |  | A9       | 6               |                               | A14        | 4                           |                                       |
| B4       B9       B14         2018       150       £117.80         02       02       02       0         A5       A10       A15         million       02       02       0         B5       B10       B15  |            | 1 allu U  | $\langle 0 \rangle \rangle$                          |          | -               |                               |            | 7                           | (0)(2)                                |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  | D4         |           | 0.2  | DO       | C               |                               | D14        |                             |                                       |
| 02       °       02       0       0         A5       A10       A15         95       £79.20       8         million       02       02       0         B5       B10       B15  | D4         | 2018      |  | D9       | 150             |                               | D14        | f117.80                     |                                       |
| A5       A10       A15         95       £79.20       8         million       0<2       0<2       0         B5       B10       B15  |            | 2010      | (0,2)  |          |                 | $\bigcirc \bigcirc \bigcirc$  |            | 2117.00                     | (0)(2)                                |
| 95     £79.20     8       million     0.2     0.2     0       B5     B10     B15   | 15         |           |  | A 10     |                 | 0~2                           | A 15       |                             | 0.2                                   |
| million 0.2 0.2 0.2 0  | AJ         | 95        |  |          | f.79.20         |                               | <b>A13</b> | 8                           |                                       |
| B5 B10 B15   |            |           | $\left( \begin{array}{c} 0 \\ 2 \end{array} \right)$ |          | ~~; >.20        | (0)                           |            | 0                           | $\langle 0 \rangle \langle 2 \rangle$ |
|  | B5         | ***       |  | B10      |                 |                               | B15        |                             |                                       |
|  | ~~         | 9 and 27  |  | 22.2.0   | 8               |                               |            | 7                           |                                       |
| (0,2) $(0,2)$ days $(0,2)$   |            | >         | (0)(2)   |          | -               | $\langle 0 \rangle 2 \rangle$ |            |                             | (0)(2)                                |

Correct answers score 2 points: circle 2 or 0 for each question and cross out the other number. At the end of the round, draw a line under the last question attempted. Shuttle

| A1 | B1  | C1 | D1 |
|----|-----|----|----|
| 1  | 84  | 5  | 4  |
| A2 | B2  | C2 | D2 |
| 8  | 36  | 17 | 48 |
| A3 | B3  | C3 | D3 |
| 12 | 111 | 99 | 48 |
| A4 | B4  | C4 | D4 |
| 2  | 40  | 18 | 8  |

| On the response sheet: | Circle the mark awarded for each question and cross out the others.<br>At the end of the round, either circle the bonus mark or cross it out. |
|------------------------|---|
|                        | At the end of the found, entief ence the bonus mark of cross it out.  |

The flowchart explains the order in which questions should be marked.



### Logic round

| No  | No  | No  | No  | Yes |
|---|-----|-----|-----|-----|
| No  | No  | Yes | No  | Yes |
| Yes   | Yes | Yes | Yes | Yes |
| No  | No  | No  | No  | Yes |
| No  | Yes | No  | No  | Yes |
| On the RESPONSE SHEET: Circle the mark awarded for each question and cross out the other. |     |     |     |     |

TEAM NUMBER

School name

There may be a variety of ways of solving these problems so please check answers carefully. A possible solution for each question is given below.

| solution for each question is given below.  |  |
|---|--|
| 1   | 6  |
| $(1+2+7) \times (1+1)$  | $4 \times (75 - 3) - 9$                  |
| 034   | 034                                      |
| 2   | 7  |
| $75 \times (6+4) + 8 - 1$   | $9 \times ((4 \times 25) + 5) - 3$       |
| 034   | 034                                      |
| 3   | 8  |
| $8 \times (75 + 7 + 8)$   | $(9 \times 25) + ((3 + 4) \times 6) - 1$ |
| 034   | 034                                      |
| 4   | 9  |
| $9 \times (25 + 3)$   | $(7-1) \times (100+9) + (8-3)$           |
| 034   | 034                                      |
| 5   | 10                                       |
| $9 \times (100 + 7) + 5 - 1$  | $9 \times (50 + 5 \times (4 + 1)) + 1$   |
| 034   | 034                                      |
| Award 4 marks for a correct answer.<br>Circle the mark awarded and cross out the others | . Final score /40                        |

Speed test

| 1         | 6           | 11            | 16      |
|-----------|-------------|---------------|---------|
| 7         | 20          | 7             | 2331    |
| 2         | 7           | 12            | 17      |
| PLAINTEXT | 31 degrees  | 120km         | 23      |
| 3         | 8           | 13            | 18      |
| 4         | £2          | $\frac{1}{5}$ | 4 hours |
| 4         | 9           | 14            | 19      |
| 4         | 105 degrees | 19            | 1332    |
| 5         | 10          | 15            | 20      |
| 760 m     | 31          | 10 hours      | 59      |
|           |             |               |         |

| On the RESPONSE SHEET: | Award 3 marks for a correct answer.<br>Circle the mark awarded for each question and cross out the other. |
|------------------------|---|
|                        | ·;  |

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# PAGE