

**United Kingdom
Mathematics Trust**

TEAM MATHS CHALLENGE
2018

REGIONAL FINAL

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.

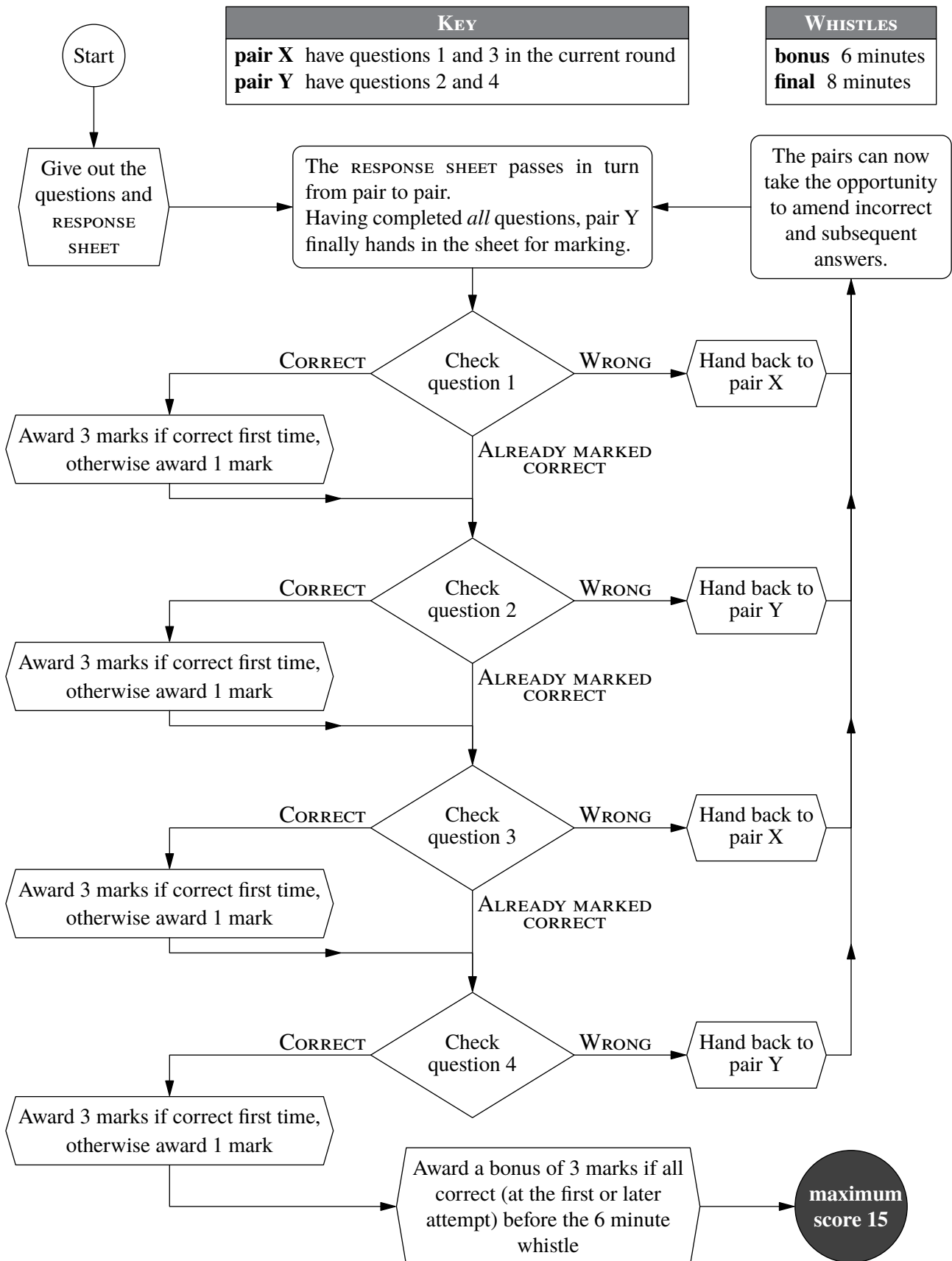
Please ensure that students use blue or black ink to write their answers; teachers are asked to use red ink for marking.

A1 80	B1 16	C1 9	D1 8
A2 30	B2 4	C2 11	D2 24
A3 60	B3 8	C3 4	D3 8
A4 87	B4 21	C4 5	D4 10

On the RESPONSE SHEET:

Circle the mark awarded for each question and cross out the others.
At the end of the round, either circle the bonus mark or cross it out.

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



CROSSNUMBER

1		2		3		4	5	
		6	7		8			
9	10						11	12
	13			14				
15			16				17	
		18				19		
20	21				22		23	24
			25	26		27		
28						29		

ACROSS

1. A square and also a cube (3)
4. The difference between 8 DOWN and 16 DOWN (3)
6. A multiple of 22 DOWN (4)
9. The sum of seven consecutive triangular numbers (2)
11. A factor of every four-digit palindromic number (2)
13. 14 ACROSS minus 24 DOWN (2)
14. 400% of 27 DOWN (3)
15. 12 DOWN minus 17 ACROSS (2)
17. A square (2)
18. A Fibonacci number (3)
19. 17 DOWN minus 18 ACROSS (2)
20. A factor of 21 DOWN (2)
23. 21 DOWN minus 15 ACROSS (2)
25. The product of all the primes in the eighties (4)
28. The mean of 17 DOWN, 1 ACROSS and 10 DOWN (3)
29. $3x$ where
 $17 \text{ ACROSS} : 1 = (15 \text{ ACROSS})^2 : x$ (3)

DOWN

1. A multiple of 19 ACROSS (3)
2. A prime number that is also a prime number when reversed (2)
3. A factor of 4 less than 25 ACROSS (2)
5. 28 ACROSS minus 200% of 7 DOWN (3)
7. The mean of the first seven triangular numbers (2)
8. A square and also a cube (4)
10. A multiple of 15 ACROSS (3)
12. A Fibonacci number (3)
15. A multiple of a square and 7 (3)
16. The product of all the primes in the fifties (4)
17. A multiple of 9 (3)
21. x , where $\frac{x+5}{7} + \frac{x-7}{5} = 48$ (3)
22. An angle, in degrees, of an isosceles triangle with another angle equal to (17 ACROSS)° (2)
24. x where
 $56 : x = 15 \text{ ACROSS} : 29 \text{ ACROSS}$ (3)
26. A prime number when reversed (2)
27. 26 DOWN reversed (2)

CROSSNUMBER

¹ 7	2	² 9		³ 2		⁴ 9	⁵ 6	9
2		⁶ 7	⁷ 1	3	⁸ 4		0	
⁹ 8	¹⁰ 4		2		0		¹¹ 1	¹² 1
	¹³ 8	2		¹⁴ 2	9	2		4
¹⁵ 8	0		¹⁶ 3		6		¹⁷ 6	4
4		¹⁸ 6	1	0		¹⁹ 5	6	
²⁰ 7	²¹ 1		2		²² 5		²³ 6	²⁴ 2
	4		²⁵ 7	²⁶ 3	8	²⁷ 7		1
²⁸ 6	2	5		7		²⁹ 3	0	0

Marking Instructions—a reminder

- Pairs should write their own answers in the Answer Grid; teachers should not do this on their behalf.
- Pairs may only communicate through the teacher, and only to request that the other pair work on a particular clue.
- When a pair enters an answer in the Answer Grid, the teacher checks each digit of the answer:
 - if it is correct, place a tick in the dotted circle and award one mark
 - if it is wrong, cross it out, write in the correct digit, and place a cross in the dotted circle
 - show the correct answer to both pairs so that they are up-to-date.
- A pair may enter just one digit if they wish, rather than a complete answer.
- A pair may sacrifice a square, by guessing, if they wish.

1.

(a) 8 (b) 101 or one hundred and one

6.

£4.70

2.

576

cm³

7.

(a) 71 (b) 70

3.

(a) 15 (b) 20 (c) 18

8.

2417

4.

504

9.

1 : 2 : 3

5.

141

10.

(a) 52 (b) 9801

On the RESPONSE SHEET:

Circle the mark awarded for each question and cross out the others.

TEAM NUMBER SCHOOL NAME

A1 1 km <input type="radio"/> 0 <input type="radio"/> 2	A6 21 <input type="radio"/> 0 <input type="radio"/> 2	A11 100 % <input type="radio"/> 0 <input type="radio"/> 2
B1 95 g <input type="radio"/> 0 <input type="radio"/> 2	B6 10 cm <input type="radio"/> 0 <input type="radio"/> 2	B11 46 % <input type="radio"/> 0 <input type="radio"/> 2
A2 13 <input type="radio"/> 0 <input type="radio"/> 2	A7 19 <input type="radio"/> 0 <input type="radio"/> 2	A12 $\frac{83}{240}$ <input type="radio"/> 0 <input type="radio"/> 2
B2 42 million <input type="radio"/> 0 <input type="radio"/> 2	B7 138 £ <input type="radio"/> 0 <input type="radio"/> 2	B12 $\frac{333}{1000}$ <input type="radio"/> 0 <input type="radio"/> 2
A3 190 cm ² <input type="radio"/> 0 <input type="radio"/> 2	A8 4 <input type="radio"/> 0 <input type="radio"/> 2	A13 3 <input type="radio"/> 0 <input type="radio"/> 2
B3 11 weeks <input type="radio"/> 0 <input type="radio"/> 2	B8 8500 ml <input type="radio"/> 0 <input type="radio"/> 2	B13 75 ft <input type="radio"/> 0 <input type="radio"/> 2
A4 186 <input type="radio"/> 0 <input type="radio"/> 2	A9 7.77 £ <input type="radio"/> 0 <input type="radio"/> 2	A14 198 <input type="radio"/> 0 <input type="radio"/> 2
B4 (-1, 3) <input type="radio"/> 0 <input type="radio"/> 2	B9 96 £ <input type="radio"/> 0 <input type="radio"/> 2	B14 1.85 <input type="radio"/> 0 <input type="radio"/> 2
A5 511 million <input type="radio"/> 0 <input type="radio"/> 2	A10 75 dags <input type="radio"/> 0 <input type="radio"/> 2	A15 120 <input type="radio"/> 0 <input type="radio"/> 2
B5 15 OR 30 minutes <input type="radio"/> 0 <input type="radio"/> 2	B10 66 ° <input type="radio"/> 0 <input type="radio"/> 2	B15 45 <input type="radio"/> 0 <input type="radio"/> 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.

FINAL SCORE /60

BACK

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