



United Kingdom
Mathematics Trust

Team Maths Challenge 2020

General information for teachers

Eligibility

The Team Challenge is a competition designed for teams of four students in:

- **Y8 & Y9** (England and Wales)
- **S1 & S2** (Scotland)
- **Y9 & Y10** (Northern Ireland)

Teams must include no more than two students from the upper age group.

Team Selection and Preparation

This is not an official stage of the competition and you do not have to run a practice event in your school. However, most schools find the material provided from past competitions useful for selecting a team of four and for additional resources. Materials from previous years are available to download from the Team Maths Challenge section of the UKMT website (<https://www.ukmt.org.uk/competitions/team/team-maths-challenge/archive>).

The **Regional Finals** will be held across the UK between February and April 2020.

Each event will involve the following rounds:

1. Group Round
2. Crossnumber
3. Shuttle
4. Relay

The **National Final** will be held in London on Monday 15 June 2020.

The rounds differ slightly from those in the Regional Finals and are as follows:

1. Poster competition (the scores from this round feed into the main competition result)
2. 'Group Circus' (this is similar to the regional Group Round with the addition of practical materials for use in solving certain questions)
3. Crossnumber
4. Shuttle
5. Relay

How to enter

Enter online on the Team Maths Challenge section of the website (<https://www.ukmt.org.uk/competitions/team/team-maths-challenge>). You must be logged in to enter and check venues, dates and availability using the map and/or drop-down box on the right hand side of the page. This is updated in real time as teams enter the competition.

Please try to enter by the start of December, so that we can plan numbers for materials and catering. However, some heats fill up before then, so we recommend that you enter as early as possible to avoid disappointment.

Explanation of rounds

Group Round (*45 minutes, 6 points per fully correct answer*)

- Teams are given a set of 10 questions, which they should divide up among themselves so that they can answer (working individually, in pairs, or as a group) as many as possible in the allotted time.

Crossnumber (*up to 45 minutes, 1 point per correct digit*)

- Teams are divided into pairs, with one pair given a grid with the across clues and the other pair given a grid with the down clues. There is also a third grid, kept by the teacher.
- Each pair works on their own grid and, once they have an answer ready for submission, one of the students copies the answer onto the third grid, to be marked straightaway by the teacher.
- The teacher either confirms the answer (and awards marks) or corrects it (no marks), then shows the correct answer to both pairs to ensure that each has correct and up-to-date information on their grid.
- The sole communication permitted between the two pairs is to request, via the supervising teacher, for a particular clue to be solved by the other pair.

Shuttle (*Four shuttles of 8 minutes each, 3 points per answer if correct on first attempt or else 1 point if correct on a subsequent attempt. In addition, a bonus of 3 points is awarded to teams that present a correct set of answers before the 6-minute whistle*)

- Teams are divided into pairs. For the first shuttle, Pair A receives Questions 1 and 3 (along with the response sheet on which to write the answers) and Pair B receives Questions 2 and 4. This is switched for the second shuttle (and so on).
- Question 1 can be solved independently of the others, but the answer to each subsequent question is dependent on the previous answer, referred to as *T* in Questions 2, 3 and 4 ("*T is the number that you will receive.*").
- Once they have calculated the solution to Question 1 and written it on the response sheet, Pair A passes the sheet to Pair B. This continues with Pair B passing the answer to Question 2 back to Pair A and so on. Apart from passing the response back and forth, no communication is allowed between the two pairs.

- The teacher is not permitted to mark the answers during this process, or to let the students know if they have passed on an incorrect answer.
- Once **all** questions have been answered, Pair B hands the response sheet to the teacher to mark, starting from Question 1. If all answers are correct, the team has successfully completed the round. At the first incorrect answer, the teacher stops marking and passes the sheet back to the relevant pair to reattempt the question. There is no limit on the number of further attempts.
- There will be a whistle after 6 minutes. Any team which hands in their response sheet with four correct answers before this whistle (whether or not they were correct on the first attempt) will earn a bonus of 3 marks.
- A final whistle will be blown after 8 minutes. Teams must then stop working and hand in their response sheet for marking. Only at this point can a teacher mark a sheet with fewer than four answers written down.
- Students can work on any of their given questions at any time and the questions have been designed so that pairs can carry out preparatory work before receiving the answer to the previous question.
- If a pair knows that the answer they have received must be wrong, they can pass it back to the other pair with this answer circled.
- If a pair realises (*before* the completed response sheet is handed to the teacher for marking) that they have passed on an incorrect answer, they can ask the teacher to retrieve the response sheet from the other pair so that they can change their answer.

Relay (*up to 45 minutes for Regional Finals, 30 minutes at National Final, 2 points per correct question*)

- The aim here is to have a speed competition with teams working in pairs to answer alternate questions.
- Each team is divided into two pairs, with each pair seated at a different desk away from the other pair and the teacher.
- One member of Pair A collects question A1 from the teacher and returns to their partner to answer the question together.
- Once they have an answer to the question, the runner returns to the teacher to submit it. If it is correct, the runner receives question B1 to deliver to Pair B from their team. If it is incorrect, Pair A then has a second (and final) go at answering the question, then the runner returns to the front to resubmit their answer and receive question B1 to deliver to Pair B.
- The runner then returns, empty handed, to their partner.
- Pair B answers question B1 and a runner from this pair brings the answer to the front, as above, then takes question A2 to Pair A. Pair A answers question A2, then their runner returns it to the front and collects question B2 for the other pair, and so on until all questions are answered or time runs out. Thus the A pairs answer only A questions and the B pairs answer only B questions.
- Only one pair from a team should be working on a question at any time and each pair must work independently of the other.

Group Circus (*National Final only, 50 minutes*)

Teams move around a number of stations to tackle a variety of activities, some of which involve practical materials.

Poster Competition (*National Final only, 50 minutes*)

Teams are sent information about a topic for research and investigation prior to the event, then at the National Final they make a poster incorporating materials they have prepared while addressing related questions given out on the day.

For more information about the Team Maths Challenge, contact us:

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