

M1 Maths – Fun and Games

Target

Aim

To develop number sense, mental arithmetic, estimation skills and order-of-operations knowledge. It is suitable for students from Year 1 to Year 10.

Groups

The game can be played by a whole class working in groups of up to four as a teacher-lead activity, or by small groups of students working independently.

Resource Preparation

Each group will require a set of 48 cards (these can be produced from the included masters by copying onto card or thick paper and cutting) and a calculator. Note that copying and cutting up of the cards will take some time, but once they are made, they can be re-used.

Procedure

Students play in groups of 2, 3 or 4 around a table or an area of floor. A game consists of a number of rounds. The procedure for each round is as follows:

- The dealer sorts out the cards into types: numbers, operations and decimal points.
- The dealer hands out the operation and decimal point cards appropriate to the variation being played.
- The dealer then shuffles the number cards and hands out six to each player face down.
- The players then have a given set time to arrange their cards in front of them. The aim is to get an expression whose value is as close as possible to a given target number. They may not use calculators at this stage. If working as a class, the teacher can decide on the target number at the start of each round. If working independently, the target number should be agreed on and written down by the students prior to each deal.
- If working as a class, the teacher gives a warning when there are 5 seconds to go and says STOP at the end of the allocated time. Anyone who touches their cards after that is disqualified from that round. Groups working independently will need a timing device like a phone, or a non-playing time keeper (this role can be rotated).

- The students then decide who has the best answer, i.e. closest to the target number (if the target is 10, 9 is as close as 11). They may use calculators to check at this stage. If they wish to keep score, the winner(s) of each round can be given a token from a pile assigned to the group.

Variations

There are many possible variations on the game. A few are listed below.

Variation 1 (Years 1-2): The students are given a + sign and the 6 numbers. They arrange two numbers and the + sign to give them an answer as close as possible to say 10.

Variation 2 (Years 2-3): As for Variation 1 but with a – sign instead and a difference of say 3 as the target.

Variation 3 (Years 2-5): Students are given a + or – sign and 6 numbers. They arrange 4 numbers and the + or – sign to give a sum or difference as close as possible to say 100 or 30.

Variation 4 (Years 3-7): As for Variation 3 but students use all 6 numbers to give an answer as close as possible to say 1000 or 350.

Variation 5 (Years 3-5): Students are given a \times sign and 6 numbers. They arrange 2 numbers and the \times sign to give a product as close as possible to say 20.

Variation 6 (Years 4-7): Students are given a \div sign and six numbers. They produce a 2-digit number divided by a 1-digit number to produce a ratio as close as possible to say 4 or 7.2

Variation 7 (Years 4-9): Students are given a \times or \div sign and four numbers. They use the operation sign and any combination of the numbers to produce an answer as close as possible to say 1000 or 93.

Variation 8 (Years 4-10): Students are given a + or – sign, 2 decimal points and 6 numbers. They use all the cards to produce an answer as close as possible to say 100 or 33.7

Variation 9 (Years 5-10): As for Variation 8 but with a \times or \div sign.

Variation 10 (Years 7-10): Students are given a + sign and a \times sign and 6 numbers. They use all the cards to produce an answer as close as possible to say 5000.

Variation 11 (Years 8-10): As for Variation 10 but with 2 decimal points as well.

Variation 12 (Years 8-10): As for Variations 10 and 11 but using different combinations of operation signs.

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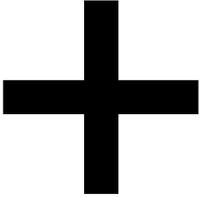
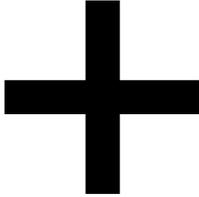
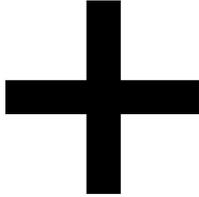
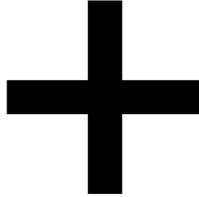
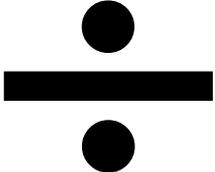
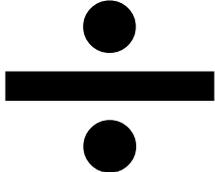
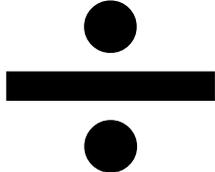
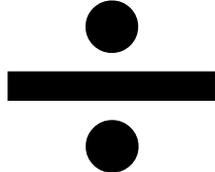
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