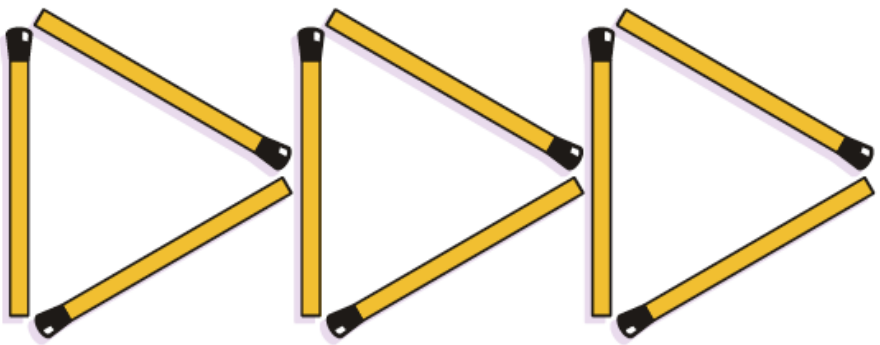# Mathematics Challenge

Issue 129

Dear students and parents, welcome to the Dulwich Mathematics Challenge. Test your brainpower, whatever your mathematical ability. If you would like to contribute a puzzle please email me at chris.stanley@dulwich-beijing.cn

Move three matches to make four equilateral triangles.

Junior Mathematical Challenge

1. Only the digits 2, 3, 4, 5, 6, 7 are used in this multiplication, and each letter represents a different digit. What is the value of M + U + C + K?

    A 14   B 16   C 17   D 18   E 19

$$\begin{array}{r} UK \\ \times\ 6 \\ \hline SMC \end{array}$$

2. A school has 657 pupils. There are 384 pupils in School Year 9 or above and 376 pupils in Year 9 or below. How many pupils are there in School year 9 in this school?

    A 8   B 103   C 113   D 273   E 281

3. The diagram shows a figure in which all the long sides are the same length and each is twice as long as each of the short sides. The angles are all right angles and the area of the figure is 200cm². What is the perimeter of the figure?

    A 20cm   B 40cm   C 60cm   D 80cm   E 100cm
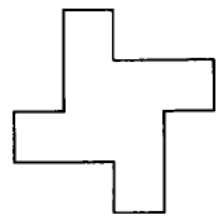
JMC 1993

Junior Mathematical Olympiad

4. You have three red chairs in the dining room, two blue chairs in the conservatory and one yellow chair from a bedroom. How many ways are there of arranging these six chairs around a circular table? (Here an arrangement obtained by simply rotating another arrangement around the table is regarded as identical and should not be doubly counted, whereas an arrangement which is a reflection of another is regarded as distinct.

May 2014 Mentoring

5. On a 75 by 75 'chessboard' the rows and columns are numbered with coordinates from 1 to 75. Alena wants to put a pawn on just those squares where one coordinate is a multiple of 3 and the other coordinate is even (A coordinate could be even and a multiple of 3). How many pawns can she put on the chessboard?

June 2014 Mentoring

Intermediate Olympiad

6. What is the largest three-digit prime number 'abc' whose digits a, b and c are different prime numbers?

McClaurin 2014