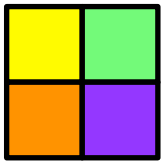
x-maths Bond π instructions

Wrapping Shaper

The school inspectre always wraps his Christmas presents in wrapping paper that is covered in geometrical shapes. How many of the given shape occur in the design?

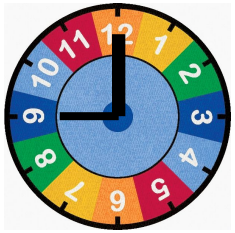
Example:



How many squares?

ANSWER: 5 (4 small squares and 1 larger square.)

Example: 9am precisely.



ANSWER: 90 degrees

Jangle Bells

The school inspectre is keen to observe accurate time keeping. He always keeps a record of when the school bell sounds at the end of a lesson. Find the precise size of the smaller angle between the hands on the clock at the given time.

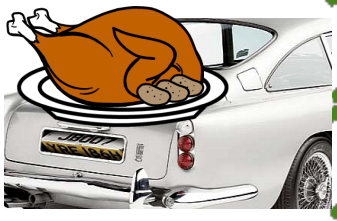
The ***main problem*** should be self explanatory. For this year's ***extra tough challenge*** try to work out the title that the school inspectre has given to his mission and hence find what links all the stolen digits (explained below in Display Dismay). A different clue will be given each day. This is not necessarily part of the competition but if you think you know the answer, then you could always impress your teachers and friends! All will be revealed on the last day - day 6.

Display Dismay

Driven by his selfish passion for Mathematics, the school inspectre removes 2 digits each day from a display board at each school. He hopes this will cause havoc with student progress. What are the 2 missing digits each day and what links all these missing digits?

Example: The first 6 prime numbers are 2 3 7 11 and 1
ANSWER: 5 and 3

Bond's car has a rotating number plate that can be quickly changed in order to keep villains off his trail. It is always a 5-digit number - abcde. On each plate **all 5 digits are different and there are no zeros.** Note that ab, for example, does not in this case mean a x b, it simply means the 2-digit number ab made up from the digits a and b. Find the 5 digit number.



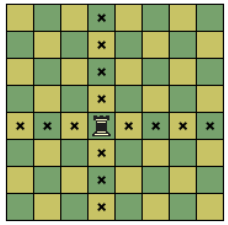
Number Plate

Example: abcde is a 5-digit number.
ab is a square number
bc is a cube number
cd is a prime number
de is a multiple of 5

ANSWER: 36475

Chess Nuts

The school inspectre is a chess enthusiast and will always visit a school's chess club when he gets chance. He likes to pose problems for students. A deep knowledge of chess is not required - the allowable moves of the piece in question are indicated within the problem. Find the required number each day and illustrate a possible arrangement.



Example: Find the maximum number of castles (rooks) that can be placed on a chess board so that none of the castles attack each other.

ANSWER: 8