**Colourful Cube-answer sheet**

**Age 11 to 14**

If all the sides look the same and the centre cube is red, then the corner cubes are the only yellow ones. Since a cube has 8 corners, there are 8 yellow little cubes. Also, the drawn square has 33=27 little squares and any of them is either yellow or red, so there are 27−8=19 red little squares.  
  
If we know only the colour of the little cubes we see, then, by counting them, we know that there are 7 yellow cubes  and 12 red ones. Therefore, there are 27−(7+12)=8 cubes of unknown colour. The maximum number of red cubes would therefore be achieved if all the unknown colour cubes will be red, so the maximum number of red cubes is 20, while the minimum number is achieved if all the unknown colour cubes are yellow and the number of red ones is 12.