The Scottish Mathematical Council

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MATHEMATICAL CHALLENGE 2014–2015

Entries must be the unaided efforts of individual pupils.
Solutions must include explanations and answers without explanation will be given no credit.
Do not feel that you must hand in answers to all the questions.

Primary Division: Problems II

P2.1. Alice, Bill, Charles and Doris each have three different coloured marbles, chosen from white, yellow, green, red and blue.

1. Bill has a red marble.
2. Doris does not have a green marble.
3. Charles has only one marble the same colour as any of Alice's and only one the same colour as any of Bill's.
4. Only two people have red marbles.
5. Charles has one yellow marble.
6. The two girls have the same colours.

What are the colours of Bill's three marbles?

P2.2. The average annual rainfall in a town for the ten years up to the end of 2011 was 1208 mm. In 2012 the rainfall was 1255 mm and the ten year average decreased to 1204 mm. What was the rainfall in the town in 2002?

P2.3. What is the largest value of British coins you can have in your piggy-bank such that their value comes to more than £2 but you are nevertheless unable to make £2 exactly?

END OF PROBLEM SET II