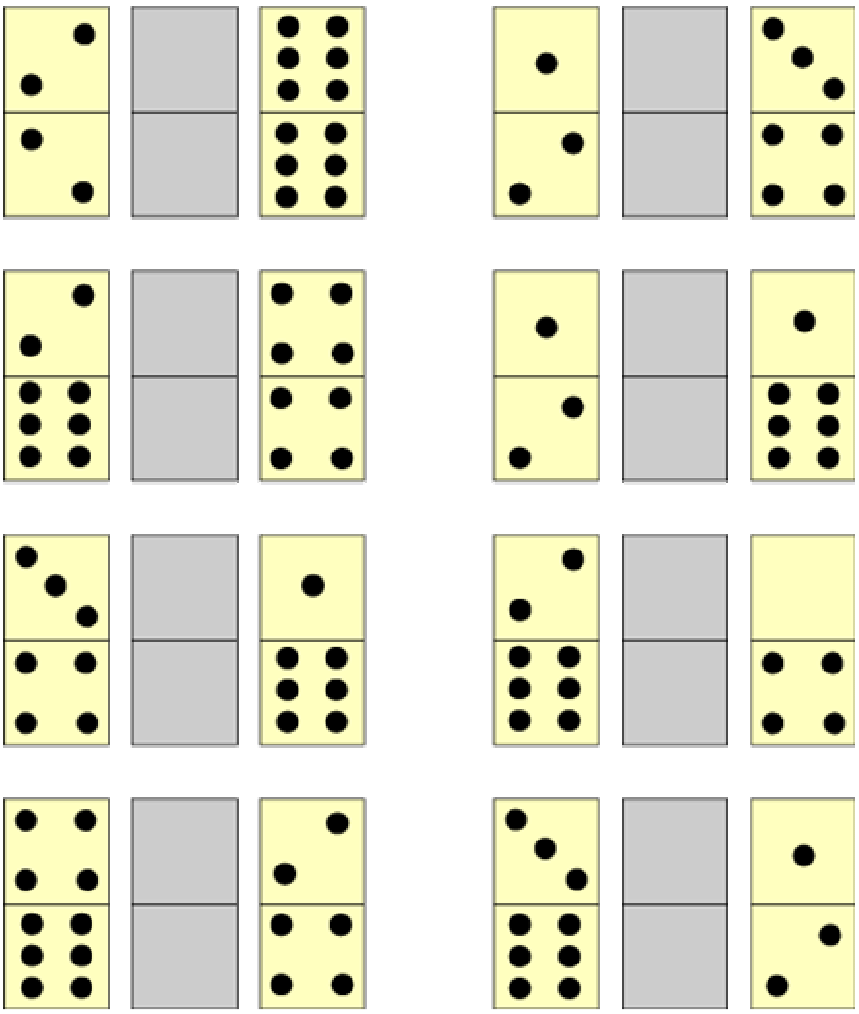
Domino Number Patterns

http://nrich.maths.org/225

Can you work out the domino pieces which would go in the middle in each case to complete the pattern of these eight sets of three dominoes?



You Will Need:

- A standard set of dominoes
- Recording sheets are available for printing from the site

This activity is taken from the NRICH website and features on the Hands On Maths Roadshow: http://www.mmp.maths.org/roadshow. It also appears on the curriculum mapping document: http://nrich.maths.org/curriculum

Teachers' Notes

Why do this problem?

This problem uses the idea of sequences in a very tangible form. Children will need to recognise odd and even numbers as well as be able to count fluently both backwards and forwards. They will also have opportunities to justify their answers.

Possible approach

You could start by using a very simple sequence of dominoes such as ones that are blank at one end and 1, 2, 3 etc at the other. This could be done with either floor dominoes, drawn on the board or made out of card. You could then progress to dominoes which have a sequence on both top and bottom so that the children can look for both when they do the actual problem. Ask them to justify their choices giving reasons such as "It's the next number counting in twos" or "The tops are all the same".

After this introduction children could work in pairs on the problem. If possible each pair should have a set of dominoes to use. At the end children could give their answers, which might not be all the same, always giving reasons for their choices.

Younger children should be familiar with dominoes through free-play and domino games before attempting more formal tasks such as pattern building. These children would benefit from saying the numbers in the sequence out loud to reinforce the familiar counting patterns.

Key questions

What numbers are at the top/bottom?
What number comes between these two?

Possible extension

Children could work in pairs inventing domino sequences of their own. A set of 9-spot dominoes would be very useful so that longer and more complicated sequences can be made. Always expect the children to be able to justify the dominoes they have chosen.

Possible support

A set of real dominoes that can be manipulated makes the problem less abstract. Start with just the 'tops' of the dominoes, then look at the 'bottoms'.