

Domino loop

Children make loops of dominoes such that meeting ends have a given total number of spots.

Skill practised:

- Using pairs to 5, 6 and 7

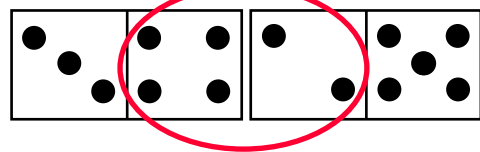
Conjecture: *It is possible to use all the dominoes in a set to create a loop where meeting ends have a total of 6.*

What to do:

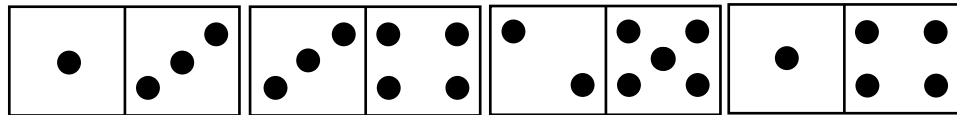
Children work in pairs or small groups.

Each pair/group will need a complete set of dominoes and plenty of table/floor space!

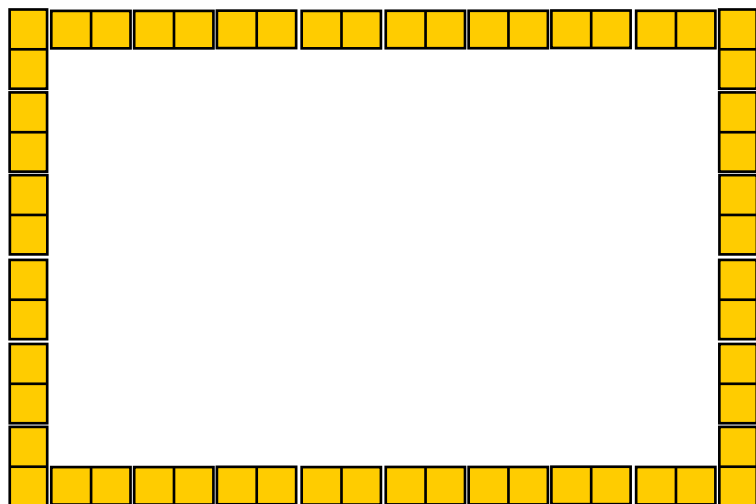
1. Ask children to find two dominoes such that when they put them together, the total of the spots on the meeting ends is 6, e.g.



2. Now ask children to find dominoes to put on either end so that meeting ends have a total of six spots, e.g.



3. Ask them to keep on doing this to create one big loop using ALL of the dominoes. The last two dominoes should join up!



4. If children have some dominoes left over, ask them to look for where they could insert them into the loop. They may also need to check the totals of matching ends to see if they have made a mistake!

Can children use all the dominoes to create a loop where meeting ends have a total of 7?
Which dominoes are left out and why? Do they make a pattern?

Can they make a loop so that meeting ends have a total of 5?
Which dominoes are left out this time and why?

Y2 CHALLENGE: Ask children to try other totals, and after a while see if they can predict which dominoes will be left out. Ask them to draw a table to show the totals and the number of dominoes used each time. Can they see a pattern in the numbers of dominoes used?

Aim:

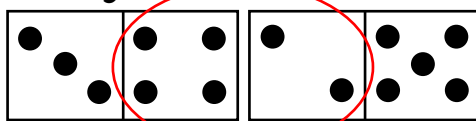
- To use knowledge of number facts and reasoning skills to explain why some dominoes can't be used in a loop

Minimum number of calculations expected

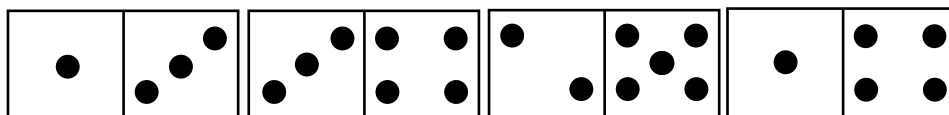
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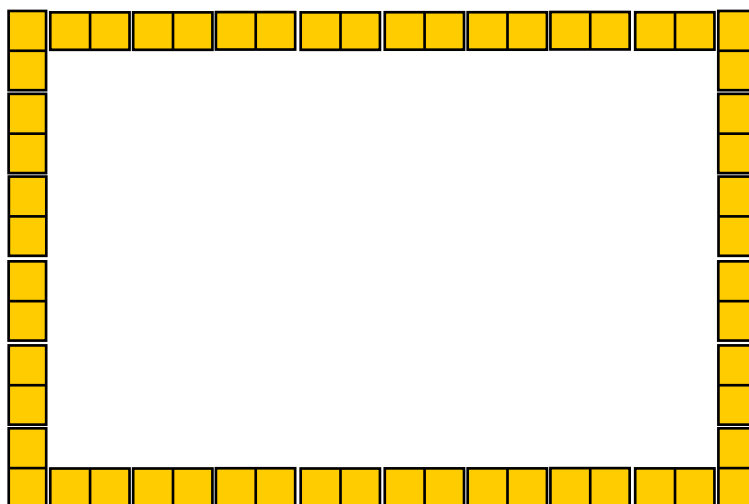
- Find two dominoes that when put together end-to-end, the spots on the meeting ends add up to a total of 6, e.g.



- Find dominoes to put either end that have a total of 6 spots on their meeting ends.



- Keep going to create one big loop using ALL of the dominoes. The last two dominoes should join up!



- If you have some dominoes left over, look for where you could insert them into the loop. Check the totals of matching ends to see if you might have made a mistake!
- Can you use all the dominoes to create a loop where meeting ends have a total of 7? Which dominoes are left out? Why? Do they make a pattern?

Can you make a loop so that the meeting ends have a total of 5? Which dominoes are left out this time? Why?

Y2 Challenge

Try other totals, and after a while see if you can predict which dominoes will be left out. Draw a table to show the totals and the number of dominoes used each time. Can you see a pattern in the numbers of dominoes used?