



INVESTIGATION



Only three

1	2	3
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MathSphere

Only three Investigation

Starter



Hi! Do you like my new car?
I've got to get a number plate
for it before I can drive it.

**Only the numbers 1, 2 and 3 can be used and there is only
room for 3 numbers on a number plate.**

How many cars is it possible to give a number plate to before
they start repeating?

I really like my number
plate because it is easy to
remember.

It is: 1 1 1



Some Ideas

Work in a methodical way, recording your results carefully as you go.

Think about how to set out your results clearly.

Try to find as many rules and patterns as you can.

Can you be sure that you have got all the possible numbers?

What would happen if you were allowed four numbers, but could only use 3 at a time?

What would happen if you were allowed four digits on your number plate?

What would happen if you were allowed 3 digits and a letter of the alphabet?

How are car number plates arranged today on real cars?

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Answer Guide

This is a simple "How many ways" investigation, which could lead on to looking in more detail at car registrations.

The initial task needs to be clearly explained, emphasising that each of the three digits can be used more than once and that each number plate is three digits long.

There are 27 combinations available;

123 132 111 112 122 121 131 113 133

213 231 222 221 211 212 232 223 233

321 312 333 331 311 313 323 332 322

Encourage discussion about the best way to go about this and ask children how they are approaching the task.

There are a variety of ways to present the information, but a table or chart is probably the best.

Plenty of ideas for extension work, such as

1. having four digits for a three figure number plate
2. having three digits for a four digit number place
3. having a combination of digits and letters
4. exploring real number plates, looking for patterns and order of letters and numbers.