



# INVESTIGATION



Six out



9

4

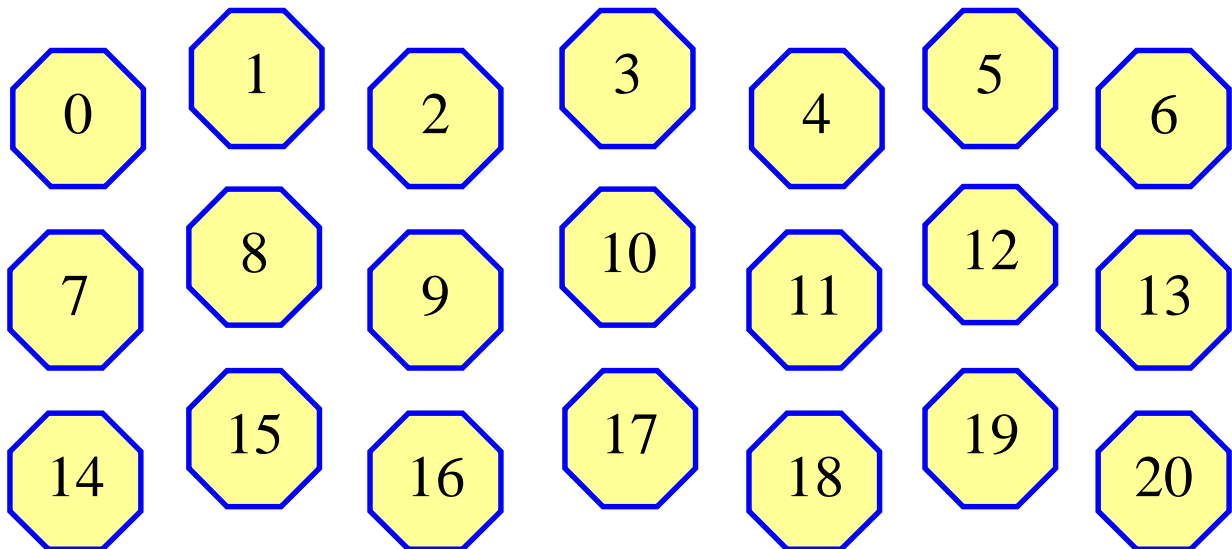
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# MathSphere

## Six out Investigation

### Starter



**Match pairs of numbers that have a difference of 6**



How about 7 and 1 to start you off ?  
Can you find some more?

**Make as many pairs as you can with a difference of six.**

## **Some Ideas**

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

**Make sure that you check your answers as you go.**

**How many pairs of numbers did you find that had a difference of 6?**

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

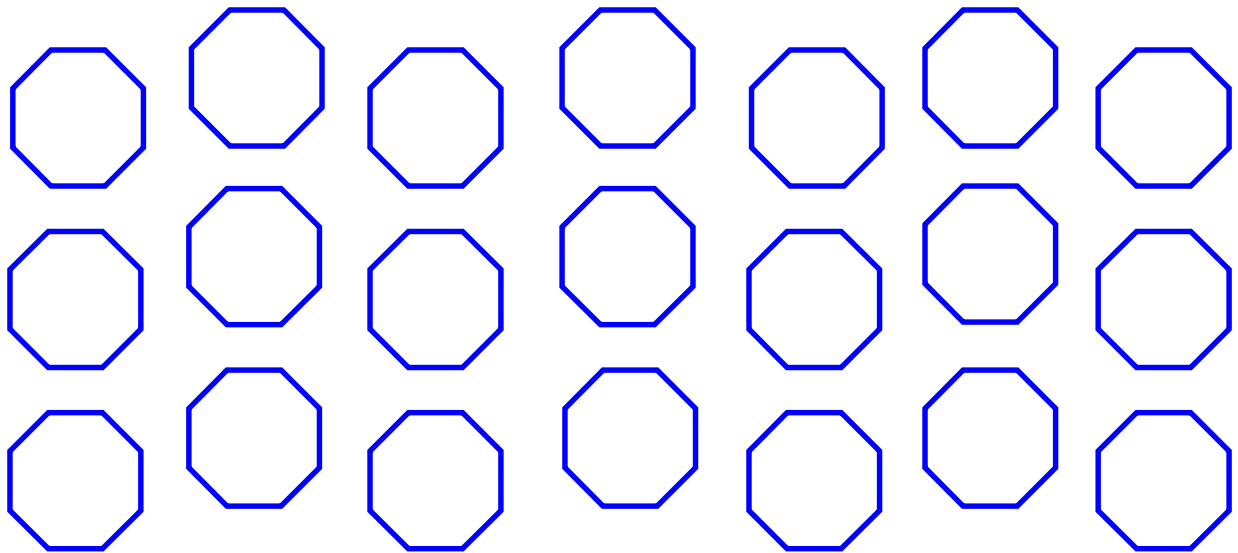
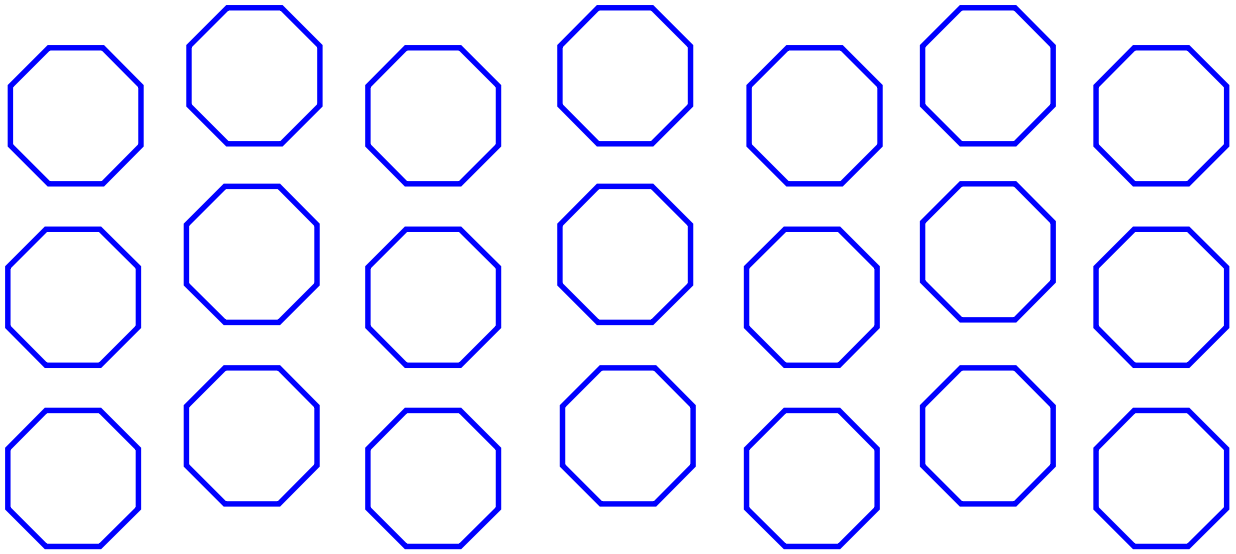
**How can you display your results so that they are really clear?**

**Are some numbers in your list twice? Why?**

**What would happen if you found pairs of numbers with a difference of 3? Would there be more pairs, less or the same?**

**What would happen if you chose a different set of numbers - can you make your own set up and then find the differences?**

**What would happen if you chose pairs of numbers that made a total of 21?**



## **Answer Guide**

This is a fairly straightforward starter and some children will be able to work in a very methodical way, starting at 1 and finding the card with a difference of 6, then 2....and 3 etc.

Others will work in a more random way.

A good discussion point is whether 3 and 9 is the same as 9 and 3 when looking at finding the difference. Some children may want to include both pairs.

Ask children to think about how they can best present their results, so even if they worked in a random fashion they should be able to collect their pairs and present them in a more organised way.

When the initial task has been completed the next step is probably to change the difference and look for pairs of numbers with a difference of 5 or 7.

Further "What would happen if..." questions might include:

1. changing the numbers
2. extending to more numbers
3. finding a number which has two other numbers with a difference of 5  
eg 11 has 6 and 16
4. moving away from differences to totals - finding a pair of numbers that total 21  
etc