Prime differences

Children find out if prime numbers become less frequent as we consider sets of larger numbers.

Skills practised:

- Subtracting small numbers
- Using number facts

Conjecture: Prime numbers get less frequent (further apart) as their size increases.

What to do:

Children work individually or in pairs.

1. Write the prime numbers up to 50.

2. Find and record the differences between each pair of primes.

3. Extend this to find differences between prime numbers between 50 and 100.

Can you see a pattern in the differences?

Do prime numbers become fewer, that is to say do the differences between them become, on average, larger?

Aims:

- – To find differences between two neighbouring prime numbers
- – To demonstrate whether or not prime numbers become less frequent as they get larger

Minimum number of calculations expected

25

Prime differences

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2. Find and record the differences between each pair of primes.

3. Extend this to find differences between prime numbers between 50 and 100.

    Can you see a pattern in the differences?

    Do prime numbers become fewer?
    That is to say, do the differences between them become, on average, larger?

2   3   5   7   11   ...

Differences   1   2   2   4   ...