

## Exploring number types with Upper 3

### Euler's Number



A mathematical constant that is the base of the natural logarithm, represented by the letter 'e'



$$e = 2.71828182845904523....$$
$$\approx 2.718$$

This week in class Upper 3 talked about different number types. They were asked if we considered one number sequence of the even numbers, and a second sequence of odd numbers, would we have considered every number that existed?

This opened the discussion about negative numbers and decimals. The group then remembered that Pi,  $\pi$ , existed and was approximately 3.1415926... so we put this on the number line.

My challenge to them was to find another irrational number that existed on our number line in the same way. Islay suggested  $i$  which is the square root of  $-1$  so we were able to think about where complex numbers existed rather than real numbers. Mia and Izzy went away and found that  $e$  was approximately 2.71 and Izzy found that it can also be called Euler's number. Although it is attributed to both John Napier and Leonard Euler it was discovered by the Swiss mathematician Jacob Bernoulli in 1685 while studying compound interest and it is a value that we use a lot in A Level and in industry for exponential growth. House points to both pupils!

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