

What are the five counting principles?

Gelman and Gallistel's 1978 research put forward the idea that there are five principles to counting that children need to understand.

These five counting principles that aid children's understanding are:

1. The one-one principle: This refers to the need to count each object in a group once (and only once).
2. The stable order principle: This refers to number names being said in their correct order and knowing that the order of the numbers will not change.
3. The cardinal principle: This refers to the understanding that the final number said, when counting a group, tells the counter how many objects are in the group.
4. The abstraction principle: This refers to the possibility that anything can be counted, not just physical objects. Imaginary objects, sounds or movements cannot be physically grouped, but they can be counted.
5. The order-irrelevance principle: This refers to the understanding that the order in which the objects in a group are counted is not important. Objects can be counted in any order and the total will remain the same.

Each of these principles are vital for children to be able to understand and make progress with their counting.

Why is counting using the five principles important?

Counting is a fundamental skill for children to learn and master from an early age. Counting skills are also an important gateway which allow children to access more complex topics in mathematics. Although this skill may seem fairly straightforward, there are significant counting principles that young children need to master.

When a young child begins counting, they count by rote, meaning they will be able to say the number names in order simply because they have remembered the words and the order they go in. From this starting point, children then need to begin to master the five counting principles outlined above.