



Coloured Number Rods

A classic manipulative for a hands-on approach to exploring a range of mathematical concepts. Available in 155 pack (MA03341) and 444 pack (MA03356) to cater to different classroom needs.



Ben Stanley, Maths Lead, Archway Primary School explores the Coloured Number Rods and shares his thoughts:

Intent:

As part of a focus research group, we wanted to unpick how we could utilise manipulatives to support deeper understanding of the structure of number and increase mathematical thinking. The group identified that manipulatives in general were used to support lower attaining pupils on a more frequent basis but were often designed to 'do the maths' rather than unpick the structure.

Whilst working in the group, we discussed various manipulatives/representations that could support this process and explored a variety of techniques. We settled upon using Coloured Number Rods.

Why we chose this resource?

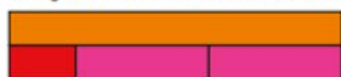
The rods offer not only a consistent representation (through colour and size) but also allow for abstract thinking due to the open-ended nature of the resource. This allowed us to find new methods and talking points around the resource that could stretch children's understanding.

Implementation:

We focused upon KS1 Number fluency, and we explored how the rods could be used to represent various numbers when making bonds to 10.

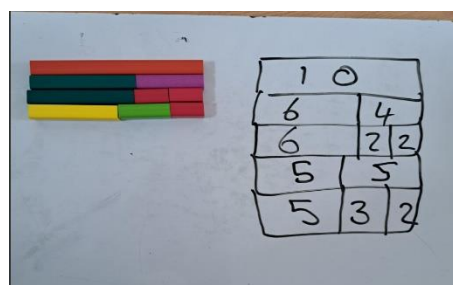
Making 10 (addition and partitioning)

Using three Cuisenaire rods we can make ten as follows:



How many more ways are there of making ten from three rods?

For this puzzle these three arrangements are counted as the same.



This initially looked like a simple activity for children, but was easily deepened through key questions such as:

- How many ways can you make 10?
- What if you use three rods to make 10?
- Can any of the rods be the same?
- Can we have 3 of the same colour rods to make 10? Why?
- How would it change if the whole was 20/50/100?

The focus around questioning was a key aspect in using the manipulative to deepen understanding.

Impact:



Participants noted that it was their first experience in using the rods and felt that they have developed significant subject knowledge from using them. Further to this, they began to implement the strategies in developing questioning alongside the use of the manipulatives to further improve their impact.

Children, during Pupil Voice, were noted in saying that they found the lessons more engaging when they could explore the Mathematics using the rods.

Overall conclusion:

- The Coloured Number Rods are extremely versatile as a resource due to their consistent colours, but abstract nature of not having a defined value.
- The rods could be utilised in a variety of manners including place value, fractions, ratio and multiplication/division.
- Teachers improved their subject knowledge through utilising the manipulative to improve mathematical thinking for our children.

Many thanks to Ben Stanley and his team.