



NRICH

Making Caterpillars

Comparing lengths using non standard measures.

Describing 3D shapes



Children enjoy using modeling clay to create long thin rolls of dough like caterpillars.

Adults could support them to compare the lengths and thickness of their models and use linked cubes to measure them.

The Activity

Give the children modelling clay, show them a picture of a caterpillar and ask them to make one.

Encouraging mathematical thinking and reasoning

Describing

What will your caterpillar be like? How can you make one?

What can you see?

How is it similar to/ different from...?

Recording

Draw a picture or take a photo to show how long your caterpillar is.

Reasoning

Can you make a train of linked cubes the same length as your caterpillar?

How long is your caterpillar? Who has made the longest?

How heavy is your caterpillar? Who has made the heaviest?

Opening out

Can you make a longer one? Can you make a shorter one? A heavier one? A lighter one?

Resources needed

Play dough/plasticine/modeling clay/salt dough.

Equipment for measuring caterpillars such as interlocking cubes, counters, balance scales.

The Mathematical Journey

The action of making the caterpillars will provoke some mathematical talk about how the process is going and observations of what is happening. Look for examples of the use of descriptive language related to length, weight, thickness, thinness, hardness, softness as the children play. It's worth remembering that this play is the setting for the cognitive work involved in the task and the children will be making sense of their actions and the consequences of those actions as they make their caterpillars. Allow plenty of time for exploratory work that involves direct comparisons between different caterpillars first of all.

Listen to the comparisons that are being made spontaneously and then offer appropriate artifacts to support the development of the aspect on which the children focused. If you hear them comparing lengths put some linked cubes on the table. Making trains of linked cubes to match their caterpillars may provoke some counting of the cubes in the train. If you hear them talking about weight, get out the balance scales. This will mean that they can develop their thinking about the aspects of the tasks that have struck them as significant. Look carefully at how they interpret the way in which one side of the balance scale tips lower than the other. Are they developing ideas about comparing weights? Do they talk about the amount of dough in the caterpillars? The initial ideas about quantity and measure are difficult to grasp and the children need plenty of concrete experiences to support them with this.

Additional resources

Video clips of children making caterpillars

Photos of children making caterpillars

Online resources?

And more ways into the same mathematics

"Making snakes" is another of our activities and can be approached in a similar way.

Comparing lengths of different familiar objects such as shoes, scarves, skipping ropes.

Comparing weights of household objects and groceries such as pieces of fruit.

Story, rhyme and song links

The Very Hungry Caterpillar by Eric Carle is a popular and familiar story and offers opportunities to make cross curricular links and links to counting and number comparisons as well as the order of the days of the week.

Adapted, with permission, from ideas in Kate Tucker's book 'Mathematics Through Play in the Early Years', published by Sage ISBN 978-1-84860-884-9