

Mathematics Reasoning Day Summer 2021

Investigating the Height of Trees

In Carpenter Class, we were investigating the following statement:

“I can measure the height of a tree by standing at the base of the tree and then walking away from it until I can see the tree when I look up through my legs. The distance I am away from the base of the tree is equivalent to the height.

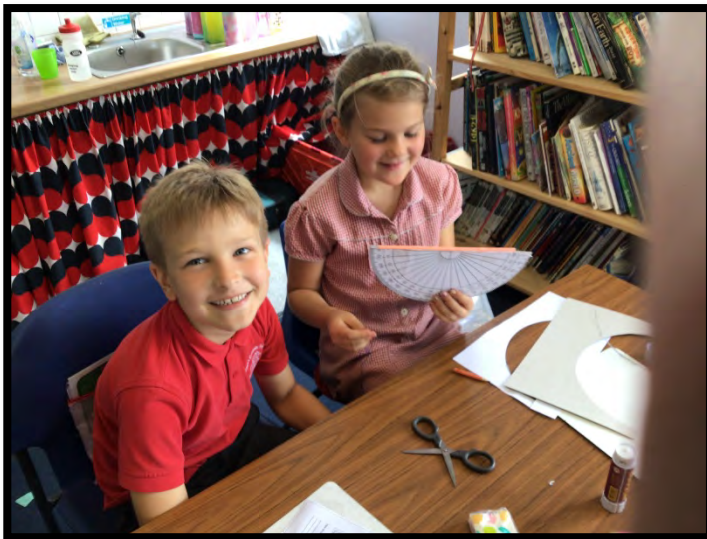
Prove it!

To investigate this statement, the children worked in groups of 4/5 and used the 'between the legs' method to investigate the heights of two different trees in the school grounds. They then measured the distance from the tree to their legs using a measuring tape and recorded their results.



After returning to the classroom, the children were asked how they could make sure that their measurements were accurate. They were introduced to a clinometer, which is a tool that is used to measure the height of tall things that you can't possibly reach to the top of, for example flag poles, buildings and trees.

The children were then taught how to make clinometers using a cut out of a protractor, a drinking straw, some cardboard a string and a weight. Once they had completed their clinometers, the children went out and took more measurements of the same trees but this time using a clinometer to help them work out the distance. The children walked backwards away from the tree until the angle shown on the inclinometer was 45° and they could see the top of the tree through the straw. They then measured



the distance from the tree to the feet of the person using the clinometer and the height of that person's eyes above the floor. Once these two distances were added together, the children had a more accurate measurement of the height of the tree. When they compared this with their original method, they could see how accurate the first method was and answer the reasoning task set at the start of the lesson.

