

Distance

How far do you think it is between the trees? Discuss and write down how far you think it is. Then measure with the tape measure.

Did you guess correctly? Was there a big or small difference between what you estimated and what you measured?



Circumference

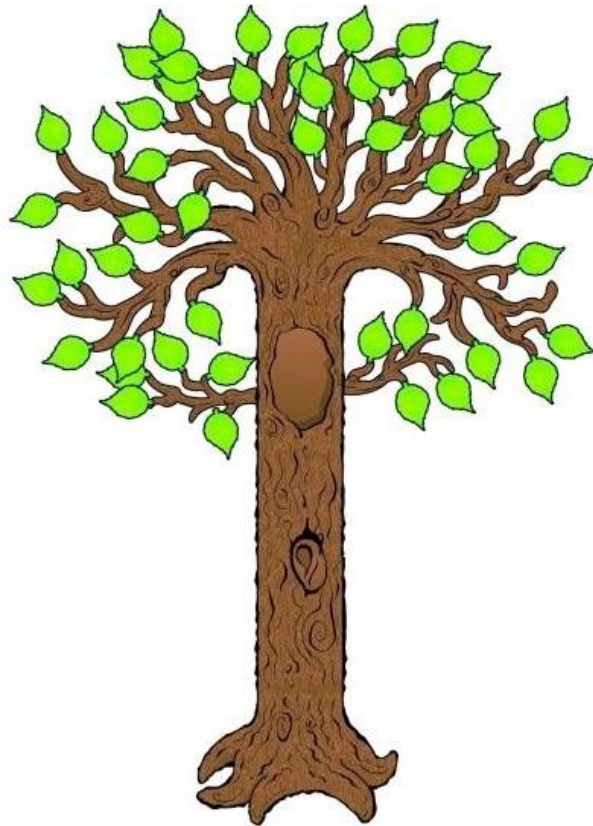
Circumference is the distance around a shape, that is, how far it is around something.

You are now going to estimate the circumference of the tree and cut a piece of string that you think will fit just around the trunk of the tree. You must not measure or try before cutting the string.

Everyone must cut their own string before the group measures around the tree. Who came closest? How did you think when you estimated the circumference?



Circumference , version 2



Can you hug a tree?

How many children does it take to reach around?

Take strings around several trees and cut according to trunks/thickness, measure and see which tree got the longest string. Which tree was the thickest/thinnest?

Take a tape measure and measure the strings and see how thick the trees are in centimetres.

Statistics

Your task is to throw cones and hit the marked tree. Decide where you will stand when you throw and how many cones you will throw each.

How can you use a graph to show how many hits and how many misses you get?



Pattern

Your task is to look at the patterns that are laid out. You then have to collect the materials needed and repeat the pattern below.

Then create new patterns that you can help to recreate as a group.



Collect lengths

Pick a stick each and place the sticks in a line, they should be 50 cm together. When you think it's 50 cm, take a test measurement with the tape measure. Was it 50 cm or was there a difference?

When you have succeeded, find a new stick and this time put them together so that they are 100 cm.



Weight

Look at the stones and feel how much they weigh.
Arrange them from lightest to heaviest.

Remember that everyone should help weigh and sort,
and that you should agree.

How heavy do you think the lightest stone is? How
heavy is the heaviest? Once you have sorted the
stones from lightest to heaviest, check with a scale to
see if it was right.



Recreating patterns

Lift the canvas and look carefully at the different objects you can see. You have to look at the square for exactly one minute, then you have to cover it again.

Your task is to find what is needed and put it in the empty square next to it so that it looks the same.

When you feel you have finished, lift the cloth and see how well you have done.



Weight

What does a cone actually weigh? Find some cones and guess what they might weigh. Does it matter if it's a pine cone or a spruce cone? Does a longer cone weigh more than a shorter one?

How many cones do you think it would take to weigh 100 grams? How many cones does it take to weigh 300 or 500 grams? Estimate first and then check.



HOW FAST IS A HILL?



First think about whether it is faster/easier to run downhill or uphill... Why?

Run down the hill and then up the hill... What happened? Were the theories correct?

Why?

Working methods

The idea of the material is that you should be able to take an exercise and work with it individually or outsource all the exercises and use them as stations. It should be easy to print and use the exercises. They are ready to use and can be used over and over again if you laminate them.

List of materials

Exercise	Material
Distance:	Paper, pencil, metre-long string and, for example, plastic tape for marking trees.
Circumference	String/yarn and scissors.
Statistics	Paper, pencil, possibly coloured pencils. Possibly plastic tape or similar to mark trees.
Patterns	Wax cloth, sheet or piece of cloth to lay patterns on. Cones, stones, flowers, shells, seaweed or other natural materials.
Collect lengths	tape measure (possibly several).
Weights (stones)	Scales, stones.
Recreating patterns	Rough paper or chequered oilcloth to make patterns on. Piece of cloth to cover the 'original'.
Weight (cones)	Scale (possibly several), bowl or similar to put cones in (preferably transparent) and cones.
How Fast Is a Hill?	Timer