



FLOOD MANAGEMENT SOIL COMPACTION, TEXTURE & COLOUR

The soil of a Tiny Forest is just as important as the trees! Together they play an important role in flood management, allowing water to be absorbed and stored. This survey will investigate the characteristics of the soil which play an important role in how much water can be taken in by the soil, and therefore its ability to reduce flood risk.

EQUIPMENT PER GROUP:

- 1 x Penetrometer
- 1 x Soil texture flow diagram
- 1 x Soil colour charts
- 1 x Pair of gloves (optional)
- 1 x Tablet/phone/printed field sheet

WHEN TO SURVEY

Any time of day

Any time of year, but best avoid when there is heavy rain and/or snow

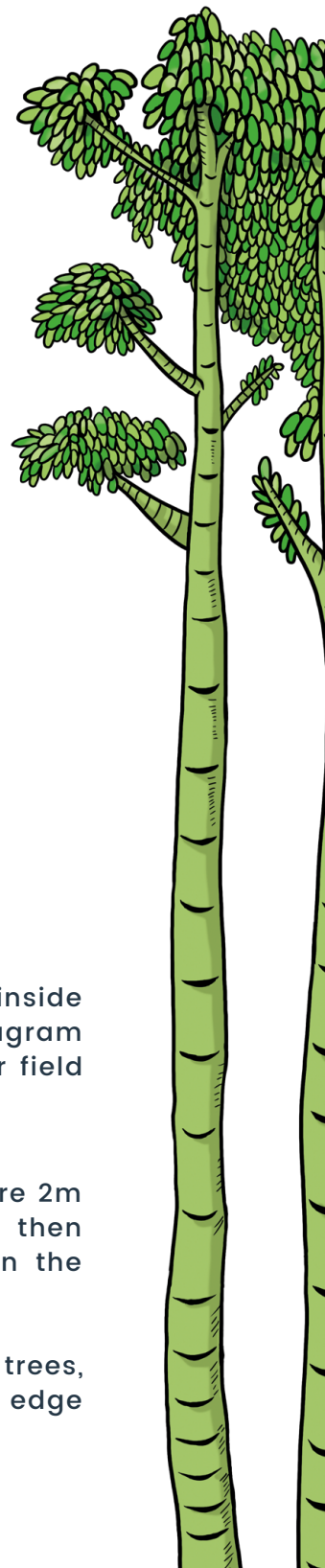
INSTRUCTIONS

STEP 1:

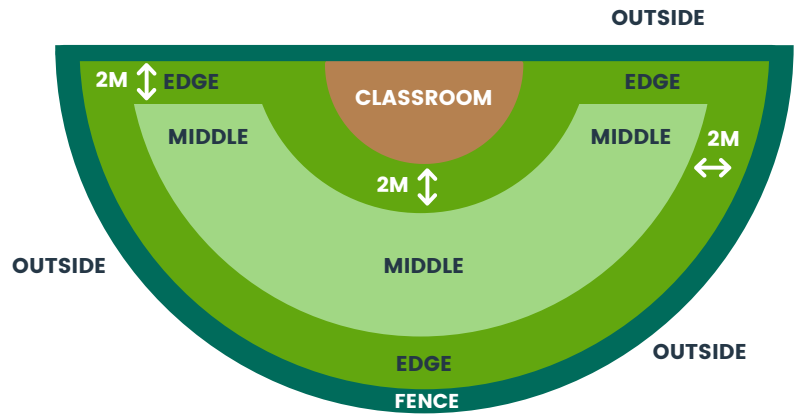
Firstly, choose a spot to take your measurements. This can be somewhere inside the forest, or outside. Once you have chosen where to sample, use the diagram and notes below to help you classify it. Record this on your tablet, phone or field sheet.

Middle: A Tiny Forest cannot be less than 4m wide at any one point. If you are 2m or more away from any edges, including where the classroom area starts, then you are in the middle of the forest. The middle is shown in light green in the diagram.

Edge: If you are 2m or less away from an area where there are no planted trees, including the classroom area, then you are in the edge of the Tiny Forest. The edge is shown in dark green in the diagram.



Outside: This is a sampling location that is not in the Tiny Forest at all. There are no planted trees around you, and you are not in the classroom area either. If the Tiny Forest is fenced then you should be on the outside of the fence.



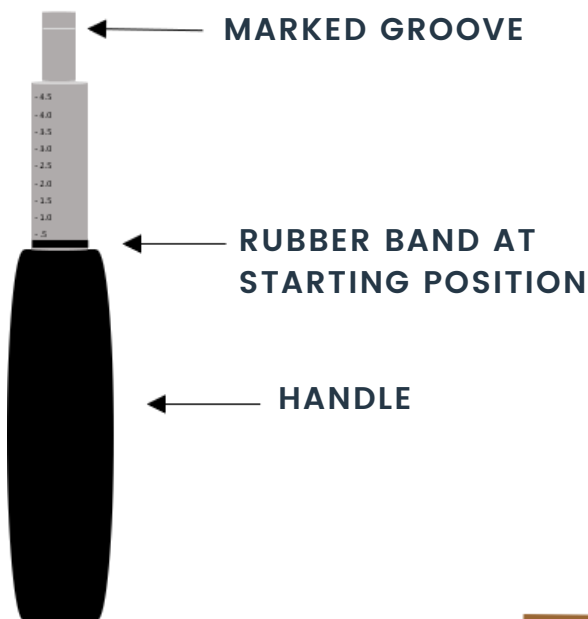
STEP 2:

Measure how compacted the soil is, using the penetrometer (this is a small, black, pen shaped instrument). Compaction is a measurement of how packed together the soil is.

Make sure the rubber band is pushed back against the handle of the penetrometer. Carefully clear a small area of the mulch (the top layer covering the soil) to expose the soil surface. Then, place the penetrometer so that it is sticking upright from the ground, and push it firmly with a constant force into the soil up to the marked groove on the end of the shaft.

Remove it from the soil - the rubber band should have moved slightly - read the number where the band is now sitting.

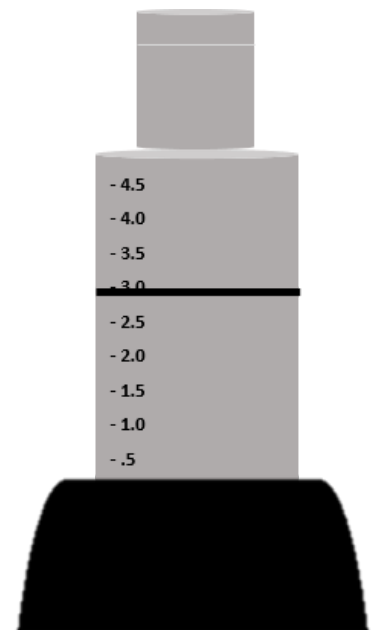
STARTING POSITION



PRESS INTO SOIL UNTIL GROOVE



READ FROM TOP OF BAND



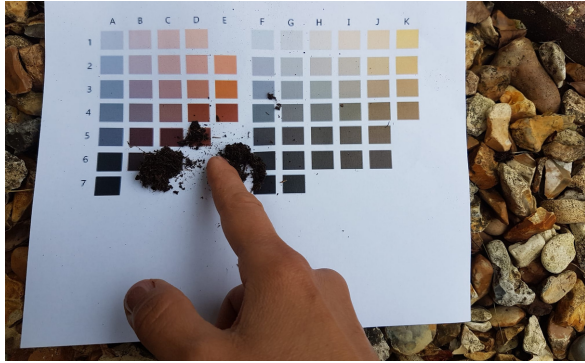


STEP 3:

Assess the soil texture by taking a small bit of soil, about a teaspoon's worth, from your sampling point and follow the steps on the soil texture flow diagram to find out the soil texture. Record the selection on your tablet, phone or field sheet.

STEP 4:

Now estimate what the soil colour is. Take a fresh bit of soil from your sampling point and place on the soil colour chart. Move the soil around the chart until you find the colour block that most closely matches your sample. Then record the column letter and row number for that colour block on your tablet, phone or field sheet.



You can repeat the steps at a new sample point. Aim to do three samples in different parts of the forest.

SOIL COLOUR CHART

	A	B	C	D	E	F	G	H	I	J	K
1											
2											
3											
4											
5											
6											
7											

SOIL TEXTURE SURVEY

Grab a handful of soil, add water and knead until moldable. Make sure it's not too dry or wet - add dry soil if it's too wet.

Can you roll it to make a ball?

NO

SAND

YES

Place ball between finger and thumb and squeeze it upward to make a ribbon. Does the soil make a ribbon?

NO

LOAMY SAND

YES

How long is your ribbon?

<2.5 cm

2.5-5cm

>5cm

Put a pinch of the soil in your palm, add drops of water and rub it with your forefinger.

Does soil feel very gritty?

SANDY LOAM

Does soil feel very smooth?

SILT LOAM

Neither gritty nor smooth predominance.

LOAM

Does soil feel very gritty?

SANDY CLAY LOAM

Does soil feel very smooth?

SILTY CLAY LOAM

Neither gritty nor smooth predominance.

CLAY LOAM

Does soil feel very gritty?

SANDY CLAY

Does soil feel very smooth?

SILT CLAY

Neither gritty nor smooth predominance.

CLAY



tinyforest
earthwatch
EUROPE

STAY IN TOUCH



EARTHWATCH EUROPE



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