

Infiltration



Figure one: An infiltration kit

What you need

- Section of drainpipe
- Ruler
- Water container
- Stop watch

What you do

Place the drainpipe on the surface of the soil or land. Insert the ruler into the drainpipe so that it is standing on the soil surface. Pour a predetermined amount of water into the drainpipe. Time how long it takes for the water to infiltrate, or measure how much water remains in the drainpipe after a given length of time.

When you use it

Compare infiltration rates between different land uses: soils, grassland, woodland, agricultural land, footpaths, tarmac. Use in a study of footpath erosion or trampling (the water will not infiltrate into saturated ground) or in an investigation into the role of man made surfaces in increasing the risk of flooding in urban areas.

Soil compaction

What you need

- Knitting needle
- Ruler

What you do

Create your own soil pins using knitting needles. Push the needle into the ground as far as it will go before you feel resistance. Measure the depth. Take care when carrying and using knitting needles, they should be carried to the site in students' bags, not in their hands.

When you use it

Compare levels of compaction at different sites and in different soil types, for example during a study of footpath erosion or trampling. Can be used in conjunction with infiltration equipment to determine why rates of infiltration vary between sites, and that impact that compacted and saturated soil can have on agriculture or on flood risk. The equipment can also be used to compare vegetated and cleared land as a small scale representation of the consequences of rainforest clearance.

Equipment List for Testing

Recording sheets

Base Maps

Cantinas for water

Rulers or Permanent marker to mark on consistent height mark

Stopwatches/Phones with GPS or Altitude

Drainage pipe

Trowels/spades

Clinometers

Ranging poles

Plastic containers for soil samples

Knitting needles

Clipboards

Pencils

Paper

Camera

Table to write down your results

	<u>Site 1</u>	<u>Site 2</u>	<u>Site 3</u>	<u>Site 4</u>	<u>Site 5</u>	<u>Site 6</u>
<u>Test 1</u> <u>(seconds)</u>						
<u>Test 2</u> <u>(seconds)</u>						
<u>Test 3</u> <u>(seconds)</u>						
<u>Average</u> <u>(seconds)</u>						