Investigating less than & more than

What you will need:
- At least 2 sticksA writing material (see our free writing materials sheet for outdoor ideas)
- Natural loose parts collected from your garden or outdoor space
- Counters - you could use glass beads, bottle tops, buttons, Lego (make sure they're the same sized pieces) anything you can get your hands on!

Begin by having a treasure hunt! You could give your children a small bag or container to put their natural loose parts in. Go for leaves, sticks, bark, petals (anything natural will work).

Next tip the bag or container out and take some time to look carefully at what you have found. You could use this as an opportunity to identify the natural parts & the plants they came from.

Then sort them into groups. You could sort them into the different groups by similarities first e.g. this group is all green, this group is all spikey. Or jump ahead to sorting them out into the individual items.

Once the natural parts are sorted begin counting how many of each kind you have collected. If your children find it difficult to count accurately, have them count the items one at a time as they move them to form a line. Then start making some verbal comparisons using the language more, less, most & least.

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Questions you could ask:

Which item have you collected the most/least of? How do you know?

Do you have more leaves or more twigs?

If you had 1 more pebble how many would you have?

If you had 10 more pine cones how many would you have?
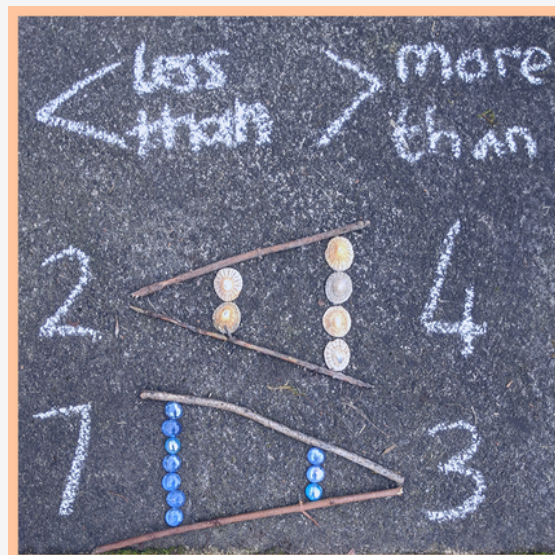
Harder questions:

How many more yellow petals than pink petals have you got?

Which group do you think is the odd one out? (Use mathematical reasons to answer e.g. a group of 4 because it's the only even number)

Is zero always the smallest number?

How can you order the groups? When doing this can you just look at two groups? Why?

Then explain that you're going to compare the numbers of objects you have found together! Introduce the signs < less than, > more than & = equals using the sticks. Model laying out the objects as shown in the photograph. Use the counters to represent the number of each item, then lay the sticks around them to create the correct symbol. Then allow the child some time to investigate the numbers!

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Taking it further with problem solving:

"I have some leaves. I have 1 more leaf than I do acorns. I have 6 less acorns than I do petals. I have 10 petals. How many leaves do I have?"

Replace the natural items in the question with ones you have available and use them to work out the problem. Try not to solve the problem for the child straight away. Instead explain your thinking to help them. For example if they get stuck on where to start say, 'so we don't know how many leaves or acorns there are, but we do know how many petals. Let's see if we can get started there.' Then read the problem again and ask the child if they can work out what to do next. Don't worry if they don't choose the right method first time, these types of activities are great for developing resilience!