pottery

what is it?

It's using clay to make pots and other items - food and drink containers, flower pots, tiles etc. There are various methods of making pots, then they have to be dried and fired in a kiln. After firing, the clay becomes ceramic, which is hard, and doesn't break down in contact with water, as unfired clay would. Patterns and colours can be introduced onto the pot by scratching, painting, printing or via transfers. Pottery for use with food and drink has to be glazed, or it will be porous and unhygenic.

clays: are extremely fine-grained soils formed by the chemical weathering of rocks. Primary clays, or kaolins, are found at the site of their formation. Secondary clays were moved by wind, water or ice, which reduces particle sizes and makes the clay smoother, and it picks up impurities that change its colour and lower its firing temperature. Ceramics, such as earthenware, stoneware and porcelain are classified according to the type of clays used and firing temperatures.

history: it's one of the oldest technologies. Ceramic figures have been found almost 30,000 years old, and fragments of pots have been found in Japan, dated around 14,000BCE. The potter's wheel is also an ancient invention - around 3-3500BCE in the Indus Valley, China, Egypt and Mesopotamia. No-one's sure who was first; but it wasn't invented in the Americas at all.

techniques: hand-building is easier than using a wheel. The main methods are coiling, pinch pots, slab pots, rolling and wrapping or press-moulding. Making a pot on a potter's wheel is called 'throwing'. This method needs a lot of practice.

firing and glazing: kilns can be electric, gas, coal- or wood-fired. Bisque firing turns your clay pot into a hard, ceramic pot, after which you glaze it and back it goes into the kiln for the glaze firing. Glaze is a silicon-based liquid or powder that is applied to pottery to make it non-porous, but also for decoration. Glaze contains silica (glass), alumina (clay to make it stick to the side of the pot) and flux to lower the melting temperature of the silica (from 1700°C, which is too high). Firing makes it set hard as a protective layer.

what are the benefits?

You can learn to make your own useful and beautiful items. It can be therapeutic, and you can gain skills to start your own small business. If you don't want to make your own, you can buy ceramic items from a local potter, if you have one. They will be more expensive, but barring accidents, will last a lifetime. You'll be supporting your local economy, rather than multinationals importing cheap, sweat-shop mugs and plates from the other side of the world, with all the pollution and carbon emissions that that entails.
The most environmentally-friendly way of making your own pottery is by using locally-dug clay, handbuilding or using a kickwheel and a wood-fired kiln - or you can go a step further and hand-build 'wild pottery' from hand-dug clay, fired on an open fire, and glazed with milk.

what can I do?

Pottery isn't something you can learn from books. You have to have a go - so maybe the first thing to do is attend a course. You can dig up some

From clay to mug: cutting and weighing clay; throwing; adding a handle; bisque firing; decorating; glazing; glaze firing; finished mug.

clay and experiment - see if you can make pots, and if it fires at an appropriate temperature. If you can't find local clay, you can buy everything you need from potters' suppliers. Prepare your clay, by wedging and kneading to get rid of air bubbles. Then have a go at the different techniques.

hand building:

- coiling - you can make different shapes using long, rolled pieces of clay and building up from the bottom. Do the bottom part on day one, build a little higher on day two etc.
- pinch pots - made from a single ball of clay, by pinching the sides up
- slab pots - with square/rectangular base / sides
- press-moulding - clay is rolled flat and pressed into (or around) a mould to make shallow dishes
- just rolling out the clay and wrapping it round ready-made shapes or tubes to form vases, for example; can make square shapes as well

Techniques can also be combined on single items. You can press designs into the clay when it's wet, and scratch patterns when it's 'leather hard' - the tidying-up stage. Then leave to dry before firing.

throwing: get a potter's wheel, from potters' suppliers, or second-hand. Choose a good-quality wheel and it will last a lifetime. Actually, a kickwheel will last a lifetime, and is more environmentally-friendly than an electric wheel, as it's spun by leg-power rather than electricity. You can also build your own wheel by adapting almost anything that spins - like a bike wheel. You'll find lots of ideas on YouTube. 1lb (0.5kg) of clay will give you a mug or a small bowl - you'll know how much clay to use with practice. Form the clay into a ball and do a bit of 'coning and balling' - squeezing up and pushing down to prepare the clay for throwing. Centre the clay on the wheel by turning it a few times, then stick your thumb in to open up a hole, before turning the wheel and bringing up the clay at the sides with your hands (the most difficult part for beginners). Master small pieces before trying bigger items. Put your pot aside, and when it's 'leather hard', put it back on the wheel to trim off excess clay from the bottom and to tidy up the outside. Then make your handle if necessary - score it where it joins the pot/mug and fix using slip (watered-down clay).

drying, firing and glazing: your pot can crack if it dries unevenly, which may happen if it's not the same thickness throughout. Items have to be bone-dry before firing, which usually means leaving them on a shelf for a week. Kilns are expensive, but there are places you can hire kiln time to fire your pieces - search online or your local classifieds. Earthenware is usually fired at 1000-1200°C, stoneware 1100-1300°C and porcelain 1200-1400°C. You don't know what you're going to find when you open the kiln. Hopefully everything will have gone well, but your pot may have cracked, or even blown up if there was air in the clay. You can also fire 'wild pottery' on an open fire or in a pit (see 'benefits', above).

'Wild' pottery made from locally-dug clay and fired on an open fire.

There is an enormous amount of information that is beyond the scope of this factsheet - such as: various types of glazes, including shiny, matt, dry and raku; salt or sugar firing - thrown into the kiln at peak temperature to give an 'orange peel' effect; oxidation (allowing air in) and reduction (keeping air out) glaze firing, to produce different colours and effects; raku firing, at lower temperatures for a lustred appearance. But these and more can all be learnt after you've mastered the basics.

resources

- see lowimpact.org/pottery for more information, courses and books, including:
- Steve Mattison, *the Complete Potter*
- Alex McErlain, *the Art of Throwing*
- Susan Bruce, *the Art of Handbuilt Ceramics*
- Frederick Olsen, *the Kiln Book*
- Craft Potters Association, cpaceramics.co.uk, equipment suppliers and regional associations
- Potfest, potfest.co.uk, potters' festival / markets
- jhpottery.com - mini-tutorial