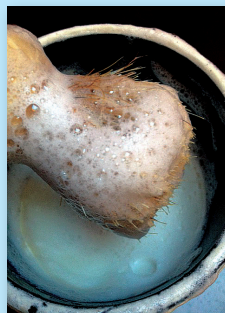


WOBBLY Corner

In response to a recent request, the 'Wobbly Corner' is making a comeback. If you have any 'wobbles', where you think you know about a concept but could do with clarification, then why not request a response from us? We will do our best to provide a simple but accurate answer – and we won't reveal who asked for the wobble to be explained!



TYPES OF MIXTURES

A large range of common items are colloids; these photographs show just a few of them

The 'wobbly' conversation that has provoked the return of the 'Wobbly Corner', focused on mixtures, whether there are special names for things like smoke and whether you could you have mixtures of liquids in solids as well as solids in liquids.

When considering very small particles (bigger than atoms and molecules) of one state of matter (solid, liquid or gas) evenly dispersed, or mixed but not dissolved, in another state (or the same state) of matter, we are in actual fact talking about **colloids**. These are different from **suspensions**, where the particles are much bigger and therefore will eventually separate out, such as oil and water or sand and water, and **solutions**, where the particles are smaller (the size of atoms and molecules) and have dissolved into the solvent, such as sugar and water. A solution will be transparent, whereas a colloid will scatter light, and appear translucent or opaque (called the

Tyndall effect). There are many types of colloids, with different names depending on the states of matter involved – see table.

While 'colloids' are not taught as a concept in primary science, it is interesting how many different types of 'mixtures' there are. We should not restrict our learning

and understanding of science to the things that we have to teach. It is the enrichment we can provide by our own outside learning and interests that will engage and enthuse the children. As many common household things are colloids this is an interesting piece of information that may fascinate your class!

Types of colloids

Continuous phase (the main appearance)	Dispersed phase (the particles inside)		
	Solid	Liquid	Gas
Solid	Solid in a solid = solid sol . There aren't many household examples unless you have things like cranberry or ruby glass.	Liquid in a solid = gel . Examples: jelly, gelatin, cheese.	Gas in a solid = solid foam . Examples: Aero, Crunchie middles, Wotsits, pumice, expanded polystyrene.
Liquid	Solid in a liquid = sol . Examples: blood, paint (e.g. powder paint).	Liquid in a liquid = emulsion . Examples: Paint (obvious as we even call some paint 'emulsion' – but depends on type as some are sols), hand cream, milk, cream, mayonnaise, salad dressing.	Gas in a liquid = foam . Examples: shaving foam, squirty cream.
Gas	Solid in a gas = solid aerosol . Example: smoke.	Liquid in a gas = aerosol . Examples: fog and mist, hairsprays (in fact any 'aerosols' you buy).	None, because gases are molecule or atom sized, so by mixing these, you have a solution, not a colloid.