Fast Five

1) What does soluble mean?
2) What does insoluble mean?
3) What do we call the end product of a solid that has dissolved into a liquid?
4) Paper is a _____ (conductor/insulator) of electricity.
5) What material is a good thermal conductor?

Fast Five Answers

1) What does soluble mean? **Matter that dissolves.**
2) What does insoluble mean? **Matter that doesn't dissolve.**
3) What do we call the end product of a solid that has dissolved into a liquid? **A solution.**
4) Paper is an **insulator** of electricity.
5) What material is a good thermal conductor? **Metal.**

Can I understand different ways to separate mixtures of materials?

What do we mean by ‘separate’?

Sometimes we need to separate mixtures so that we can have access to both of the materials.

For example, gold miners used to use a separation technique to separate the gravel (and potential nuggets of gold) from the water they had they had just scooped out of the river.

Can you think of the name for this technique?

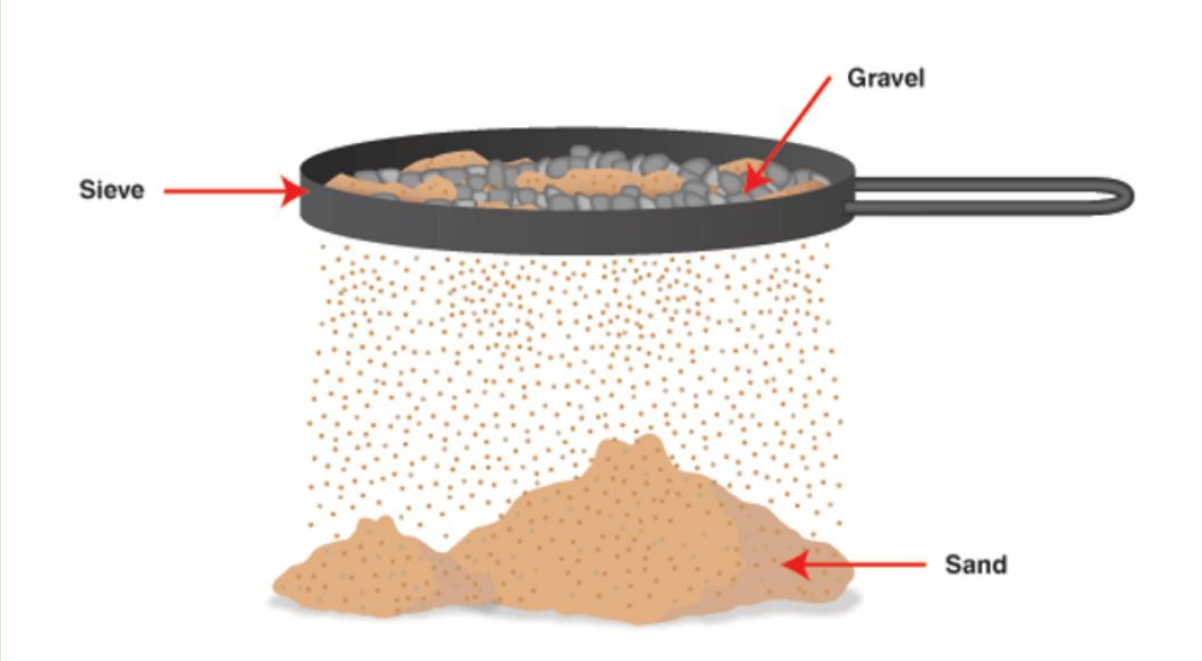
Sieving

Gold miners used to use a type of sieving method to separate the gravel from the water and mud from the river. They would then be able to search for chunks of gold within the gravel.

Separation techniques have therefore been important throughout human history, as well as in science.

In science, sieving is normally used to separate two types of solids.

How does sieving work?



The process of sieving is when you pass a mixture of different solids through a fine mesh.

Smaller particles can pass through the mesh, while larger particles get stuck - this separates the two solids.

Examples of materials that can be sieved include:

- Sand and gravel
- Sand and soil
- Sand and gold

Different types of sieves with varying sized holes can be used to separate different sizes of particles.

Filtering

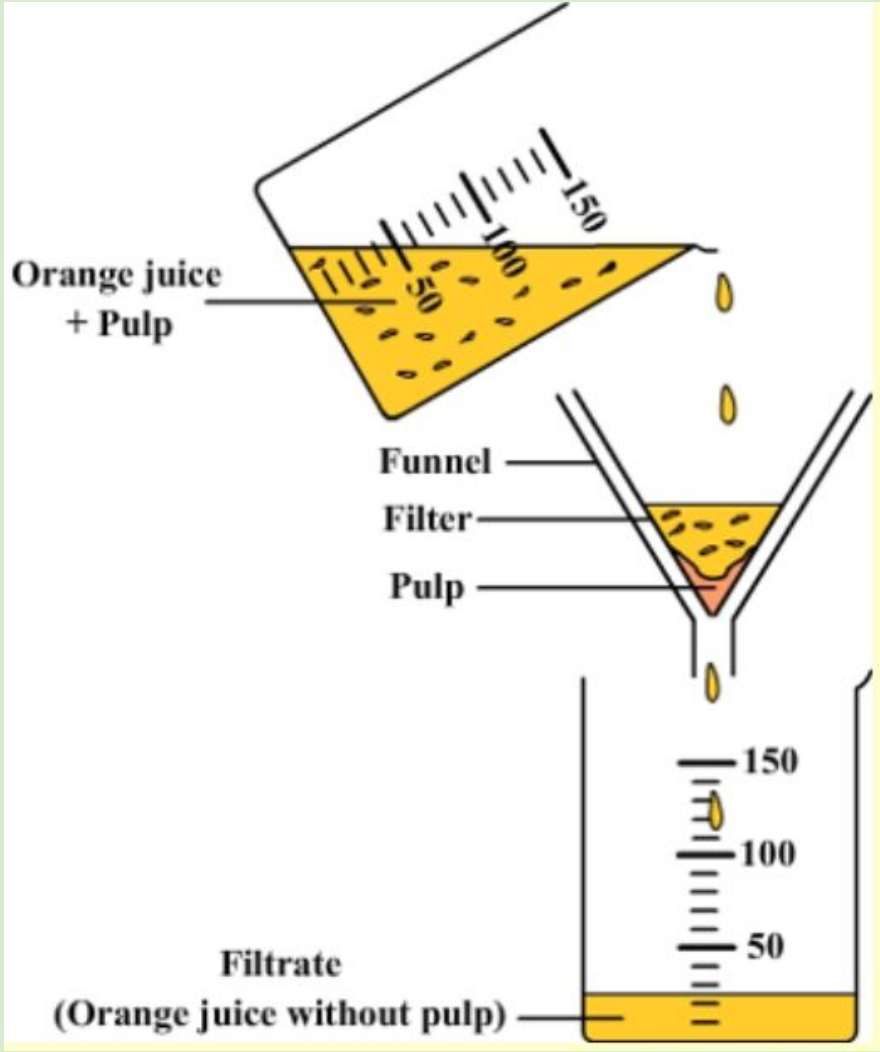
Filtering is the way in which we can separate solids from liquids. This works because sometimes the solid’s particles are too small for sieving to be an appropriate separation technique.

For this technique to work, the solid has to be **insoluble**, so it doesn’t dissolve into the liquid.

How does filtering work?

To separate a mixture of solids and liquids, they can be passed through a piece of **filter paper.**

The liquid will be able to pass through the tiny gaps in the paper but the solid particles will be too big and will be left on the surface of the filter paper.



Examples of materials that can be filtered include:

- Sand and water
- Soil and water
- Orange juice and orange pulp
- Coffee granules and water
- Tea leaves and water (tea bags are a form of filter paper)

Watch the video to recap the learning from this lesson before you choose your task:

https://www.bbc.co.uk/bitesize/topics/zcvv4wx/articles/zw7tv9q