

Mystery Boxes

Make your own



What are Mystery Boxes?

In the Mystery Boxes activity, students have to work out what is inside a set of boxes without opening them.

The boxes are an analogy for science – scientists are unable to ‘open the box’ to find a definitive answer as to whether or not their ideas are correct, but instead form theories based on evidence from their research, which are always open to further revision.

How do I make them?

To start you need a set of opaque containers of identical size and shape. Metal tins work best as objects can be heard easily when the tin is shaken.

For example:

Tea tins, baked-bean tins (emptied first!) and golden syrup/treacle tins will all do the job.

But any container will do – as long as you can hear the object moving around inside and tell the difference between objects.



Examples of suitable containers

Sealing and labelling the boxes

Once you have filled the boxes, seal them shut and label them.

Make sure your students cannot open the boxes. If you have used metal tins, soldering them shut is a good option. For other containers, duct or parcel tape should suffice. You can also wrap the boxes in paper once sealed.

They can be labelled simply with numbers or colours, or given scientifically-themed labels such as scientists' names.

How many do I need to make?



Examples of sealed containers

What do I put inside the boxes?

Each tin then needs an object inside it. You can use anything that will fit. Some examples are:

- sand
- flour
- rice
- ball of Blu-tack
- metal paper clip
- wooden block
- plastic die
- key
- table tennis ball
- playing card
- pen lid
- marble.

The options are almost endless!

We recommend using six boxes for a one-hour lesson. You can still run the activity with a minimum of two boxes, however, adding more will generate more discussion.

A set of six boxes will allow a class of 24 students to work in groups of four. If you have more than four in a group, you could consider making two identical sets of boxes and give each group a matching pair.

For this activity and many more, visit [sciencemuseum.org.uk/educators](https://www.sciencemuseum.org.uk/educators)

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