

## Science Weekly Activities



**Competition time!**

[Click here](#) to watch a video

The **BIG SCIENCE EVENT** (at home) are asking you to create your own investigation at home. All you need to do is come up with a question, think of a way to investigate it, record what you've done and tell them about it!

There are lots of great ideas to get you thinking and resources to help you plan and record your investigation – all this can be found on their [website](#). Great prizes are available for entries too!

### Investigations to do at home

Here are a few working scientifically investigations for you to carry out at home.

(Do check what you are going to do with an adult first).

The Plan > Do > Review cycle of science enquiry helps to organise our thinking:

**Plan:** Try out, raise questions, plan enquiry

**Do:** Observe and/or measure, record results

**Review:** Interpret, report, conclude, evaluate

For each investigation, we can do the whole cycle, but we just choose one part to focus on for writing down or drawing.



**Year 3**

## Shoe grip

**TASK:** Collect a range of shoes and find a way of testing which has the best grip.

For example, you could feel which is harder when you slide or push them along with your hand; place on a tray and lift until it slides down; test which helps you to push off and run faster...

You could try out a couple of methods and decide which is the best way of deciding on the grippiest shoe.

**You could record by:** drawing a diagram to explain your method for testing the shoes.

*Plan focus in Physics context*



## Body parts

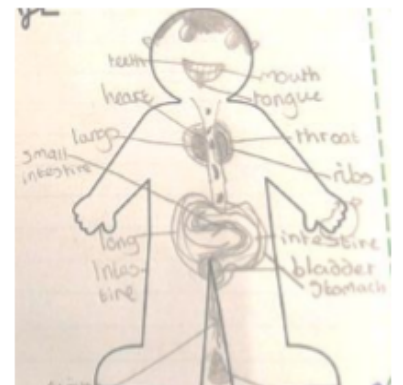
**TASK:** Investigate your body – how many parts can you name? What do they do?

Research the parts you cannot name using the internet, books or by asking an older sibling/adult.

For example, you could find out more about the senses or your internal organs.

**You could record by:** labelling a playdough model or drawing a body shaped diagram.

*Review focus in Biology context*



## Year 4

### Spinners

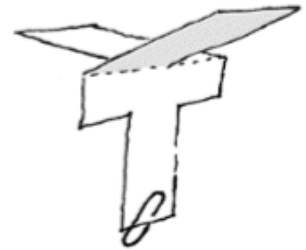
*Do focus in Physics context*

**TASK:** Make and explore dropping a paper spinner (any kind e.g. folded [here](#) or triangle shape [here](#)).

Choose something to change about the spinner e.g. size of paper, length of wings etc.

Investigate the effect of the change by timing or comparing the spinner drops. Repeat to improve accuracy of results.

**You could record:** the time taken to fall in your own table or you could video/slow-mo simultaneous drops.



### Paper planes

*Plan focus in Physics context*

**TASK:** Make and test some paper planes.

Design ideas here: [www.foldnfly.com](http://www.foldnfly.com)

Choose a design and pick one thing to change e.g. paper size, wing size, nose point/cut, bigger/smaller flaps etc.

Does your change variable make a difference to the flight distance or time? How can you compare the planes fairly – what will you try to keep the same?

**What to record:** List the variables you changed, measured and kept the same. Or write/draw instructions for how to compare plane designs fairly.



## Year 5

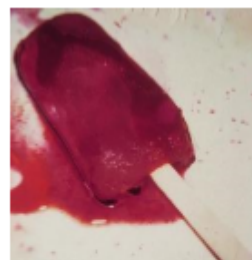
## Changing materials hunt

*Do focus in Chemistry context*

**TASK:** Go on a changing materials hunt around the house or keep a diary of changing materials at mealtimes. E.g. what has been melted/mixed/dissolved (mostly reversible) or cooked (mostly non-reversible).

**What to record:** You could record the reversible and non-reversible changes you observe in a table, with a camera or in labelled diagrams.

**Info to help:** Changes in materials can be **reversible changes** like e.g. melting/freezing ice cubes or dissolving sugar in tea (because you could get the sugar back by evaporating the water). Or changes can be **non-reversible** like toasting bread or boiling eggs (because new materials are formed and you can't get the raw bread/egg back).



## Ice escape

*Do focus in Chemistry context*

**TASK:** Find a couple of small objects to freeze in ice e.g. plastic animals, lego character etc. Put each object in a small pot with water (or water in a balloon works too) and place in freezer overnight.

Now the challenge is to find out the best way to help them escape from their mini-iceberg.

You could try putting them in different places, adding water or adding salt... (*Check your ideas with an adult first*).

Decide how to compare the 'escapes' e.g. will you time how long it takes for the object to be 'free'? Or will you compare every 10 minutes?

**You could record by:** drawing your observations over time or recording your times in a table.





## Year 6

### **Heart rate exercises**

*Plan focus in Biology context*

**TASK:** What kind of exercise do you think makes your body work the hardest? What about exercises where you are still e.g. balances or yoga poses?

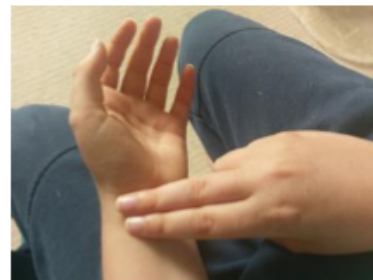
Make a list of still/moving exercises which you can investigate in the space you have available.

Decide how to compare the effect e.g. observation before and after 1 minute of the exercise.

You could observe or measure:

- breathing rate (count breaths or score out of 10 how out of breath you feel etc);
- or your pulse rate (you will need to practise finding your pulse on your neck or wrist, or ask someone else to check it for you for 30 seconds then double to get beats per minute- bpm).

**You could record:** your predictions for the different exercises.



### **Reaction catches**

*Plan focus in Biology context*

**TASK:** Test your reactions with a 30cm ruler or a straight stick by asking a partner to hold the ruler/stick above your hand and then drop it without warning. Your 'catch distance' is how far up the ruler/stick you catch it. Have a few practise goes and come up with some questions to investigate e.g. does it matter which hand/eyes open/if countdown/saying your times tables at the same time!

**What to record:** Write down the questions you investigated and briefly say what you found out.



**Extra – All year groups**

## Cleaning coins

*Review focus in Chemistry context*

### Bottle flip

**TASK:** Find a plastic bottle and put some water inside. Practice flipping the bottle to land on its base. Now explore a variable which may have an effect on how often it lands. For example, you could try different: amounts of water, bottles, landing surfaces, start positions (stand/kneel/sit) or flipping techniques.

**What to record:** Make a table to record how many attempts it took to land the bottle flip for each condition.

*Do focus in Physics context*

