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# Resources, Courses & Classes

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This product was created by Muddy Teacher Jess



**Gross Science Experiments | Lower KS2** 

## BEE GREEN AND ONLY PRINT IF YOU HIVE TO :)

### Preparation and safety

Each season, nature will bring you the resources that you need. However, if you do not have a natural setting or lack certain natural items, try to collect these in advance of your sessions. Make a habit of going out for a walk at weekends – you'll improve your own physical and mental health, which is good for you, and you'll collect your missing items. You can also encourage parents to get collecting through your newsletters! Make your world one big healthy, Muddy community. You will get an idea of the types of resources that you need each season. The only resource that you may need to buy is air-drying clay.

Weather wise, we will provide you with ideas for all types of weather. The only time that we advise you NOT to go outside is on extremely windy days and during thunderstorms. Otherwise, there's no excuses - get yourself out there!

Always risk assess with the children present. As you enter the natural environment, spend 30 seconds talking about the dangers that the weather conditions may present, such as slippery surfaces and hot sun. If possible, offer the children a solution to any issues, such as seeking out a safe, shady area if the sun is too hot. Keep sticks low and only use stones no bigger than the palm of the children's hands. remind them to use feet first then hands when collecting from the floor and wash hands thoroughly after.

Please be aware that all guidance and resources suggested within this guide are carried out at your own risk. We stipulate that all Muddy Puddle Teacher resources and guidance must be used within the context of your own company policies, procedures, guidance, risk assessments and insurance. We do not, in any way, suggest that you follow our guidance if it does not meet the requirements of your own company policies, procedures, guidance, risk assessments or insurance. It is your responsibility to ensure that any activities or resources used are suitable for the individual needs of the children within your care, including any needs related to age, health or allergies.

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## Ghost in a Jar

### Ghost In a Jar - Skills and Links

Lower Key stage 2 Science: Working scientifically - Setting up simple practical enquiries, comparative and fair tests. - Making systematic and careful observations - Recording findings using simple scientific language, drawings, labelled diagrams. - Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions States Of Matter - Observe that some materials change state when they are heated or cooled. - Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. **Cross Curricular links:** 

**Geography** - Learning about the water cycle (evaporation, condensation, precipitation).

## Ghost In a Jar Activity

Equipment: jar, warm water, ice, aerosol spray (hairspray)

This is a very quick and easy science experiment, based around 'states of matter', where the children can make a water vapour 'ghost' appear and float out of a jar. Before you start, you will need to go over safety rules for hot water and whether you feel it is appropriate for your children to pour it or not. Similarly, discuss with the children about using aerosol sprays safely. To start with, they will need a clear glass jar, then fill about a third of cup of hot or warm water into the jar. Then, quickly use some hair spray to fill the space in the rest of the jar. The spray gives the water vapour a surface to condense into tiny cloud droplets. Screw the lid on and place an ice cube on top of the lid. Then sit back and observe the condensation process, turning water droplets into water vapour and creating a mini cloud 'ghost'. Once the cloud has formed, unscrew the lid and release the ghost.

Ask the children to think about the process that occurred. Have they seen evaporation or condensation elsewhere? In the shower? In the car? On the window? On the playground ? Where do you find evaporation or condensation in nature? Can they see links with the water cycle? You should ask the children to reflect on the mini experiment- What have they learnt? What skills have they used?

You may want to record this experiment - they could draw a diagram and write a short explanation or create a short film of their experiment with them presenting in the background.





## **Zombie Fingers**

### Zombie Fingers- Skills

#### Lower Key stage 2 Science:

Working scientifically - Setting up simple practical enquiries, comparative and fair tests.

- Making systematic and careful observations.
- Recording findings using simple scientific language, drawings, labelled diagrams.
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results an

conclusions.

## **Zombie Fingers**

Equipment: rubber glove/ disposable gloves, water, food dye (added extra), a range of materials (foil, cardboard, polystyrene), natural materials (soil, leaves, stones).

In this experiment, children explore and learn about the changing state of water and how to insulate ice. First of all, prepare the experiment by filling a rubber glove with water (and a green food dye if you wish). You could, of course, have the children involved with this step too if you wanted. If you want to create a creepy hook to your lesson, it may be more exciting to have your ice fingers placed somewhere for your class to find! Then tell them they need to be reattached and we need to stop them from melting - can they help? Their challenge is to use materials to best insulate the ice fingers and stop them from melting. They may wish to use manmade materials, such as foil, bubble wrap or paper. Or alternatively, why not take the experiment outside and try burying in soil or wrapping in leaves? Once covered- check on the ice every 10 minutes - observe and record your results. Then compare your findings with the rest of the class at the end of the day to see which was best, and if any ice fingers survived.





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## Super Size Skeletons

## Super Size Skeleton - Skills and links

#### Lower Key stage 2 Science:

Animals Including Humans - Learn that humans and some other animals have skeletons and muscles for support, protection and movement.

#### Cross Curricular Links:

KS2 Art and Design -Improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials.

### Super Size Skeletons

Equipment: Pictures/photos of skeleton and natural outdoor objects - rocks, stones, flowers, twigs, leaves

For this activity, the children are to work in groups to create a giant skeleton. To start with, you will either need to provide a copy of an x-ray/photograph or labelled diagram of the human skeleton. Alternatively, ask the children to research it themselves and find a picture they want to use. Then give them the challenge to create their own skeleton using natural objects. Challenge them to make it as detailed as possible.

Extension: Label their skeleton by writing on leaves the names of the bones/body parts.



Why not try an outdoor eBook?





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## **Garden Perfumes**

## Skills and Links

Lower Key stage 2	<u>Science:</u>
Working scientifical	ly - Setting up simple practical enquiries, comparative and fair tests.
	- Making systematic and careful observations.
	- Recording findings using simple scientific language, drawings, labelled diagrams.
	- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
States Of Matter	- Observe that some materials change state when they are heated or cooled.
	- Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

#### Cross Curricular Links:

sures as well.
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## Garden Perfumes - Speed Of Smell Test

Equipment: a smelly spray or perfume, a spray bottle, naturally-smelly resources, like petals/leaves/herbs, essential oils (optional)

Activity 1:This experiment is about creating a smelly garden perfume concoction. Think carefully about what flowers, leaves or plants would work. Do a sensory walk around your grounds smelling the different plants. Advise them, as much as possible, to only use fallen petals or a small amount of leaves from these plants. The children can crush them down and place in a bottle mixed in with water. They may want to add extras, such food colouring (or paint) or eco-friendly glitter. If you really want to create stronger aromas, how about adding couple of drops of essential oils or mix in some spray of your own perfume? This experiment is fun in itself and is sure to create a range of smells to test out!

Activity 2: If you want to extend it further, the children can test out how strong their perfumes are by seeing how quickly they can smell them from across the room/outdoor space. Once the perfume is prepared, one child stands at one side of the room and another child stands 3 metres away with a timer. Open the bottle and spray the perfume. Ask the child to start the timer then stop it when they smell it. For the children to find the speed of smell, they need to calculate speed= distance divided by time.

Strength | Mother Nature

Move | Mental

## How Long are Your Intestines?

#### **Skills and Links**

#### Lower Key stage 2 Science:

Working scientifically - Setting up simple practical enquiries, comparative and fair tests.

- Making systematic and careful observations.
- Recording findings using simple scientific language, drawings, labelled diagrams.
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

Animals, including humans - describe the simple functions of the basic parts of the digestive system in humans.

#### Cross Curricular links:

Maths - Measuring accurately using the tape measure.

#### Activity

Equipment: Hose pipe (or skipping ropes), tape measure, ruler.

This simple experiment allows children to work as a group, to research and find out the length of their small intestine. So, to start with, have the children make predictions of how long they think the small intestine is. Ask them: 'Which is longer the large or the small intestine?' Then, they can do the research themselves! Afterwards, either using a hose or something equivalent (skipping ropes), go outside and have them measure out the length using the hose (6 metres). The hose works well as it also has a similar diameter (1 inch). Other alternatives could be using chalk, or a series of sticks. The benefit of using a hose (at least for demonstrative purposes) or ropes is that once it has been spread out then get the children can fold it up to make it squished up as if it is inside the human body.

Possible extensions: How long is a child's intestine compared to an adults? Can you compare the length to anything else e,g it is the length of 5 children! What is longer the length of the classroom or your small intestine?







## Stop the Snot!

### Skills and Links

Lower Key stage 2 Science:

Working scientifically

- Setting up simple practical enquiries, comparative and fair tests.
- Making systematic and careful observations.
- Recording findings using simple scientific language, drawings, labelled diagrams.
- -Identifying differences, similarities or changes related to simple scientific ideas and processes.
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

## Activity

Equipment: Spray bottle, roll of wall paper, green dye or green paint, tissue, handkerchief

Researchers at Bristol University have found out that a sneeze shoots out a staggering 100,000 germs into the air at speeds of up to 100 miles per hour! This experiment tests out what is the best way to try and stop germs from sneezes from spreading so far.

First of all, fill up 2 spray bottles with green dyed water. Each spray bottle represents a nostril whilst the green water is the 'snot germs' ! Roll out the wallpaper on its back across the playground so the plain side is facing up.

Spray the 2 bottles at one end of the wallpaper roll and see how far the germs spread across the paper. Spread out another roll next to the first and do it again, but hold tissues a few cms in front of the bottle. Compare the difference. Do the same again, using a fabric handkerchief, then again using your hands.

This experiment should be a visual way to show different ways of stopping germs spreading.







# Gross Experiments Home Learning Activities

Find more free and home friendly resources to help your child learn on our website.

## Have a go at some of these fun and simple Gross Home Learning Experiments:

- Go for a walk or look in your garden and take part in a 'slug safari'- Where are they hiding? Where is their best habitat? In your compost? Under a rock? Behind the bins?
- Take part in your own snail or slug race! Experiment on different surfaces Which works best? Why?
- Use your senses and go on a 'smelly' walk and create a 'smelly' diary over the course of a week. Where are the smelliest places that you live? Why? Are they are all natural smells or are they created from a chemical reaction?
- Keep a running record of how often you burp- keep a 'gassy diary'! What causes it? Do you see any patterns? Research how your gut works.
- Experiment with creating your own muddy or sandy slime creations. Make a note of your ingredients and method until you find the best mix.



"To us, family means putting your arms around each other and being there." -Barbara Bush

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