

## Activities 4 home

Share your results with a friend, or you can get in touch with us!

### LONG DROP TOILETS

#### 1. Tubular

Long drop toilets had tube-shaped drop offs for all that waste to slide down (fun!). Can you build your own long drop toilet using toilet-roll tubes?

See how many rolls you can gather and tape together to build your own long drop. Get an object that you can safely drop down your newly made “toilet” tube (maybe a small ball, a lego person or a crayon).

Measure your long drop tube and make a note of the length. Put some water in a plastic bowl and now test your toilet out! Hold your toilet tube just above the water bowl and drop your ball down... how far up the tube did the splashback come?

If you want to experiment further, why not change the object to something slightly heavier or lighter. How does the weight of the object effect the splashback?

Gather some more tubes and see if this makes a difference. Is there more splashback when the same object is dropped from slightly higher?





## 2. Splashback

Think about splashback from the long drop toilet. Is the best way to design a toilet with water in the bottom?  
Do some research into compost toilets and write up a pros and cons list comparing all the toilets!

Long drop toilet		Compost toilet		Your toilet at home	
Pros	Cons	Pros	Cons	Pros	Cons

Using this information, can you design a new toilet?

Think about:

- What would it be made from?
- Is splashback an issue?
- Is it indoors or outdoors?
- Where does the poo go?



## PRIEST HOLES

### 1. Retrofit your home

Put your new retrofitting knowledge to the test and see if you can design a plan to develop your home! Think about what the effects will be. Does it look better? Is it more energy efficient?

### 2. Hole lot of fun

Take a look around your house and think about whether there's any good hiding places. If there's not, even better - you can design some! Pick the room that you want to redesign and then put on your architecture hat...

Draw out a rough plan of your room and then (the fun bit) start to plan where you would build in some secret spaces. Remember, these need to be super sneaky so that no one outside or inside the room would know that they're there! If you are really up for a challenge, then you can design extra bits as a bit of a decoy to confuse people.

While your drawing, think about the materials you'll use for your hiding spaces - why do some materials suit different purposes? You probably wouldn't make a hiding hole out of bricks - why not? Would that fit in with what your room looks like?

When you're finished, test your design out on family or friends and see if they can identify the secret space!





Drawing space





## WINDOWS

### 1. Follow the flow

If you have windows that open, you can experiment with air flow in your home.

You will need an adult to help with this activity! It will work best on windy days [and no, farts don't count!]

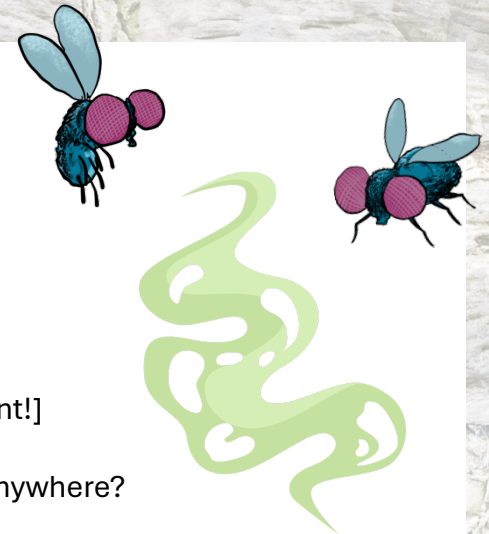
1. Open one window and try standing in different parts of your room - can you feel the air better anywhere? Where can you feel it [head, hands, feet]?

If you have a feather or leaf or a bit of fluff [something that is super light] you can test your theory to see if you're right. Let it go next to the open window and see where it travels.

2. Try opening another window, ideally in a room next to the one you already have open. Where can you feel the effects of this now? Is it in the same spot as before or somewhere else? [Remember to keep the doors open between these rooms too! If not, you'll trap the air in one room.]

To really test the air flow, find something smelly to put in the middle of the room! Get a smelly pair of shoes or ask an adult to spray a teeeeeeeny bit of perfume... Activate your sniffing skills and find out where you can find the smell in other parts of the room. Does it go straight towards the window, or can you sniff it out in other parts of the room first? This is another way to find out where the air is flowing!

Can you use this new knowledge to map the air flow around your home?





## 2. A glassy study

Why do you think the architect who designed your house chose those windows?  
How do they work?

Can you design a window that would work better?  
Think about how you can let in more air or light in.



## 3. Windows - let's reflect...

Do your windows open? If they do, how often do you have them open?  
Keep a window diary and see how it impacts your mood (and perhaps the mood of the people you live with!).

Think about:

- Does your mood change the more or less air you let into the house?
- Do you normally have the curtains/ blinds over the windows? Can you open those?  
What effect does this have on your mood?