

Show Me The Science

How Clean Are Your Hands

Introduction:

We are living in strange times with the global coronavirus pandemic as it's affected the way we live our lives like nothing many of us have never experienced before. We've been advised to stay indoors and isolate, keep 2m apart and wash our hands more often. You would think washing your hands properly is easy!! Well it's a lot harder than you may think and we've come up with this activity to show you how important it is to wash your hands properly and also just because your hands look clean it doesn't mean they are!!

Your skin has a natural microbiome; this means that to keep healthy our skin has many tiny living organisms called microbes on it. However through the day our skin will pick up extra microbes as microbes are everywhere. As we touch door handles, lift buttons, stair rails and cover our mouth to cough and sneeze then you can see how easy it is for us to pick up microbes. This is why it's really important to use correct hand washing techniques to keep the number of microbes at a safe level. This activity will show you how effective you are at washing your hands with some items you will probably already have at home. We carry this out using fluorescent powder or lotion and a UV torch to highlight areas where people need to concentrate on when washing their hands, but you can easily carry out this experiment which demonstrate the same thing with stuff you will have in the cupboards.

You Will Need:

3 Slices of bread

3 Sandwich bags

Soap and water

Pen to label the sandwich bags

Hypothesis:

We are going to demonstrate the difference between clean and dirty hands and to do this we are going to grow some microbes on bread. We expect the dirty hand to grow more microbes and using correct hand washing techniques we would expect to see minimal growth although we expect to see some growth due to our skins microbiome.

Method:

- Take one slice of bread and put it in a sandwich bag and label it “control” along with the date. This is what we are going to use to compare the growth of what is found on your hands compared to what would naturally happen to a slice of bread if left.
- Put a few drops of water on another slice of bread, you don’t want it wet but a little damp. Now place a hand on the slice of bread and put it in a sandwich bag and label it “Dirty” along with the date.
- Now go wash your hands for 30 seconds and remember to wash between your fingers, thumbs, use your fingers to really clean the palms of your hands, don’t forget the back of your hands, and wash your knuckles and finally your wrists. Repeat the previous step but label the sandwich bag “Clean” along with the date.
- Leave the 3 slices of bread in the sandwich bags in a warm sunny place, by a window are ideal, for 2-3 days then compare the growth.
- ***NOTE: DO NOT REMOVE THE BREAD FROM THE SANDWICH BAGS**

Results:

Do the results match the hypothesis? How clean are your hands? Did you think your hands were clean before the experiment? Has this experiment made you change how you will wash your hands in the future? Do you think it’s important to wash hands properly especially with the coronavirus pandemic?