

## STUDENT ACTIVITY: Making snot

### Activity idea

In this activity, students are hooked into ideas about immunity by making fake snot. Students discover what snot is and how it is an important part of the body's defence against infection.

By the end of this activity, students should be able to:

- explain what mucus (snot) is and how it's an important part of the body's defence against infection.

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### Introduction/background

As disgusting as it might sound, get your students to make some fake snot! It's a fun activity (for most students) to engage them and get them thinking about what snot actually is and why the body makes it.

Snot is simply mucus that is produced by a special membrane in the nose. The purpose of snot is to trap dust particles, germs and pollen that are inhaled and to prevent them from getting into the lungs. When the inhaled particle and the surrounding mucus that surrounds it dry and solidify, you get what most people call 'boogies'.

Runny noses and lots of snot can be really annoying during the winter. Colds and flu can lead to increased nasal mucus production, but even those in good health can find themselves sniffing and snotting when they walk from the cold outside air into a well heated room. This is because mucus will thicken outside in the cold, but in a heated room, the mucus thins and becomes runny.

Normally the mucus is a clear, thin fluid, which filters the air that you breathe. If your snot turns yellow, it means you have an infection. If it becomes green, your infection has got worse and it's time to visit the doctor.

We actually produce a cupful of nasal mucus every day, and much of it ends up getting swallowed!

Here are four recipes for making snot. It gives you a choice depending on what ingredients you might have at hand. The first one uses protein and sugar, which is what real snot is mostly made of – though, of course, it is made from different sugars and proteins. The long, fine strings you can see in your fake snot when you move it around are protein strands. These protein strands make snot sticky and capable of stretching.

The second recipe works quickly (you have to wait about 30 minutes for the first one) and is effective, but don't let the students taste or eat it. Borax is sodium borate, which is a mild alkali. It is used in cosmetics and washing powders. Although it's not poisonous, it's not good for you either. Students should wash their hands after using it.

The third recipe uses psyllium husks, which are a plant-based product – made mainly of cellulose. Cellulose absorbs water easily and swells into a jelly like substance.

The fourth recipe uses borax and guar gum. Guar gum is a vegetable gum commonly used as a food thickening agent and in gluten-free baking.

## What you need

- Access to the Science Ideas and Concepts article [Infection](#)
- [Fake snot recipes](#)
- Ingredients for chosen recipe

## What to do

1. Have students take the pre-test.
2. In your groups, read the Infection article and discuss:
  - What is infection?
  - Why do people sneeze and cough?
3. Follow the attached fake snot recipe to make fake snot! You can add a drop of green food colouring for effect.
4. While the snot is gelling, follow along with the apple/skin activity. Before starting, ask the students:
  - Is skin part of your immune system? What does it do?
5. If there is still time, have the students each take a piece of paper to make a personal health journal. They should orient the paper landscape and draw a table with 5 columns labelled: "Eating healthy", "Exercise and Rest", "Personal Hygiene", "No drugs, tobacco, or alcohol", and "See the doctor". Have them write down all the things they do in a typical week to stay healthy in these ways. For seeing the doctor, just ask them if they can remember the last time they went in for a shot or a check-up.
6. Discuss the texture of their fake snot (stringy, stretchy). Tell students real snot is made of proteins and sugars (just like in recipe 1 – but not the same proteins and sugars, of course). The stringy, stretchy texture of real snot is because of the proteins it is made from.
7. Take the post-test. Compare with their original answers.

## 1. How to make fake snot using gelatine and syrup

### ***What you need***

- Hot tap water
- A cup
- A teaspoon
- Gelatine
- Glucose syrup or corn syrup
- A fork

### ***What to do***

1. Put 50ml of hot tap water in a cup.
2. Add 6 teaspoons of gelatine.
3. Stir.
4. Leave for 20–30 minutes.
5. Add a spoonful of glucose syrup or squirt of corn syrup.
6. Trail fingers or fork through the mixture.



## 2. How to make fake snot using borax and glue

### **What you need**

- Glue – gel glue gives translucent, slimy snot; white glue gives opaque snot
- Teaspoon
- 10–15 small dishes or saucers
- Warm water
- Borax solution – stir 1 tablespoon of borax powder (you can get borax from a pharmacy) into 250ml warm water. (This will be enough for the whole class.)

### **What to do**

1. Put 2tsp of either white or gel glue into a small dish.
2. Add 3tsp of water.
3. Stir.
4. Add 1tsp of the borax solution to the glue mixture.
5. Stir or squish. The mixture will react immediately. As the mixture firms up, you could divide it up and share your snot among your group.



### 3. How to make fake snot using psyllium (Metamucil)

#### ***What you need***

- Psyllium husks (you can buy Metamucil from the supermarket)
- Spoon
- Water
- Cups

#### ***What to do***

1. Add some psyllium husks to water in a cup.
2. Trail your fingers through the mixture – try to pick it up. It has snot-like properties.



#### 4. How to make fake snot using guar gum and borax

##### ***What you need***

- Coloured guar gum solution – mix 2 teaspoons of guar gum in 1 litre of water and a couple of drops of green food colouring
- Borax solution – 1 tablespoon of borax in 1 cup of water
- Zip lock bags

##### ***What to do***

1. Pour half a cup of coloured guar gum solution into the bag.
2. Add 1 teaspoon of borax solution.
3. Seal the bag.
4. Move the contents around – rub and squeeze between your hands.
5. Tip the 'snot' out to see what it feels like.

