

# Blood and Gore

What you need:

**Materials for fake blood.**

**Each group will need:**

Toothpick

Cup

Spoon

Zipper sandwich baggie

2 spoonfuls of "white" corn syrup

Spoonful of water

Red food coloring

Cornstarch

Cocoa

**Materials for fake wound demo.**

**Demonstrator will need:**

Petroleum jelly

Red food coloring

Plate

Tissue

Cocoa powder

What to say and **What to do:**

At the *Grossology* exhibit, you probably saw all sorts of gross things. Who would like to name their favourite gross thing that they saw at the exhibit.

Take some suggestions.

Today's activity is about blood and wounds.

Raise your hand if you've ever eaten blood. Blood is very nutritious stuff. It contains lots of protein and protein is necessary for a balanced diet.

Raise your hand if you have ever tried a blood milk shake. The Masai people in Africa give blood milk shakes to people who are elderly or ill. The Masai are a herding people. They make a blood milk shake by cutting a vein in the neck of a cow and collecting some blood. Then they mix in some milk. A blood milk shake is actually very nutritious.

*continued ...*

Maybe you haven't tried a blood milk shake, but have you ever eaten a rare steak? So you have probably eaten blood after all!

What color do you think of when you think of blood?

Take suggestions.

Most people probably think of red. What color is the blood flowing in our bodies?

Take a suggestion.

You might be surprised to learn that it's deep blue or purple. When you cut yourself, the blood is exposed to air and it oxidizes. That's a fancy way of saying that it rusts. Blood has iron in it, and iron turns red when it rusts.

We're going to make some blood ... fake blood, that is.

Lead the group through instructions for making fake blood.

**To make fake blood:**

1. Place two spoonfuls of clear syrup inot a cup.
2. Add one spoonful of water.
3. Stir with a toothpick.
4. Add two drops of red food coloring. Stir with the toothpick.
5. Pour the mixture into a baggie.

**It doesn't look much like blood yet, does it? Blood is darker red, and it's not clear!**

6. Add two pinches of cornstarch and one pinch of cocoa to the mixture.
7. Write your name on the baggie.

**Everyone hold up your bag of blood. Wow, good job!**

Your teacher (parent, group leader) will look after the blood until you get home. The red food coloring will stain your clothes, so don't use your fake blood when you're wearing your favourite white shirt. This blood is nontoxic, which means you can put it in your mouth and then let it drip out and say "I want to suck your blood".

**Raise your hand if you've ever cut yourself.**

Wait while they do this.

*continued ...*

Seems everyone has had that experience. If you cut yourself really badly, get an adult—you might need to see a doctor. But if you cut yourself just a little, how long do you guess it takes before you stop bleeding?

Take answers.

On average it takes about 6 minutes before you stop bleeding. The next time you get a small scrape you might want to time it!

When you cut yourself, your brain says, ACK! Save me! Your body goes into immediate action. It sends out special cells called platelet cells to the wound site. The cells change and become sticky. They form a net that stops blood from dripping out. Then the macrophages arrive. These are very large white blood cells that look like pom poms. The macrophages actually surround and engulf bacteria, dirt and other foreign invaders. Finally, your body sends out killer cells that come and mop up the dead macrophage and bacteria. The whole time, a dried blood bandage (or scab) is forming. Do any of you pick your scabs?

Wait for hands.

Yeah, it's tempting, but it's not a good idea. Scabs are nature's bandage.

Now, I'm going to show you how to make a really gory wound. Any volunteers? Oh, did I forget to say that it's a fake wound?

Pick a volunteer, preferably one with short sleeves.

First, you goop some petroleum jelly onto a plate.

Add some red food coloring and mix.

Hold up the plate.

Does this look like blood?

No.

What did we add to the fake blood to make it more realistic?

Cocoa powder.

Add some cocoa powder and mix. Show what it looks like.

Now you need one layer of a tissue.

Place this on the wound site. Smear the petroleum jelly over the tissue.

*continued ...*

Now you get to be artistic. Mold the tissue until it looks like ripped skin. Rub in some cocoa powder around the edges so it looks like it's scabbing over.

**AlIIGH! Look at that awful gash!**

Leave some space for reaction, then settle the group down again.

This fake wound will never dry out. That's both good and bad. Good because it will always look fresh and disgusting. Bad because it can stick on things. Suppose our volunteer decided to put on a sweater. Where would the wound end up?

On the sweater.

Suppose our volunteer leans on the table. Where would the wound end up?

On the table.

To get rid of the wound all you need is some tissue.

Take some tissue and wipe off the wound.

Swipe it off first and then wash up in the sink. Otherwise you could clog the sink with petroleum jelly and tissue.

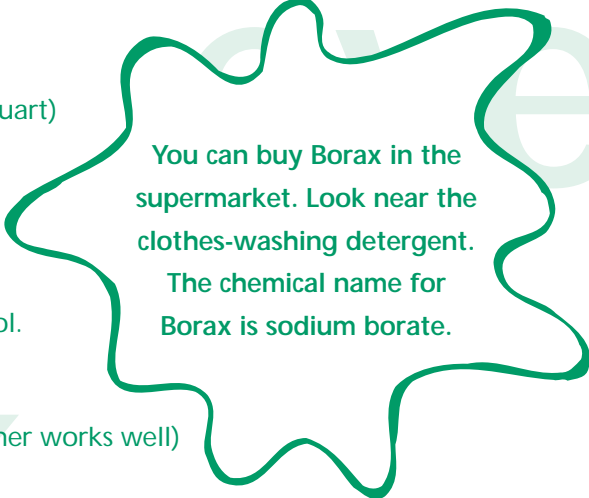
Thanks for being part of the *Blood and Gore*. Enjoy the rest of your day at (your museum).

# Holes in Your Head

What you need:

**Borax solution, made as follows:**

Use about 1/4 cup Borax to 1 litre (1 quart) of hot tap water. Stir well. There should be some Borax left in the bottom of the container. If all the Borax dissolves, add more until no more will dissolve. Let the solution cool.



You can buy Borax in the supermarket. Look near the clothes-washing detergent.

The chemical name for Borax is sodium borate.

**For each participant:**

Small plate (the lid of a yogurt container works well)

Popsicle stick

Film canister or zipper sandwich bag

**To share in small groups:**

White glue (not school glue), about 1 tbsp per participant

Water, about 1 tsp per participant

Dropper or spoon for water

Food coloring

Borax solution (about 1 tbsp per participant)

Dropper or spoon for Borax solution.

What to say and **What to do:**

At the *Grossology* exhibit, you probably saw all sorts of gross things. Who would like to name their favourite gross thing that they saw at the exhibit.

Take some suggestions.

**Today's activities are about holes in your head!**

**Turn to the person beside you and point at their caruncle.**

Wait for looks of confusion.

**The caruncle is the bump at the corner of your eye. Turn to the person beside you and check out their caruncle.**

Wait for them to do this.

*continued ...*

Did anyone find eye gunk in the corner of their neighbor's caruncle? Your caruncles are actually oil and sweat glands. Besides these glands you have 30 other glands that drip tears into your eyes. These glands have wild names like glands of Zeis and glands of Wolfring. Tears actually have 3 layers—mucus, oil and tear. Everybody blink your eyes rapidly. Wait for them to do this.

You normally blink about 20 times a minute. The tears flow over your eyes and drain into the little hole by your nose. The drains close when you close your eyes. At night, when you're asleep, the drain holes are closed. The tears pool up. The liquid evaporates and in the morning ... EYE GUNK!

Besides the holes in your eyes, you have many other holes in your head that collect and ooze stuff ... like the holes in your nose for example. What do your nose holes ooze?

Take a suggestion if you dare.

Yup, snot. Snot is amazing stuff. You need it to help keep dust, pollution and other junk out of your lungs. Tiny hairs in your sinuses, called cilia, move the snot toward your throat, where you swallow it. Gimp.

Good snot is clear and colorless. But when the cilia stop moving, your nose mucus gets clogged. Bacteria, bacteria waste, and other stuff gets stuck. The mucus changes from a clear liquid to gunky green. We're going to make the gunky green kind of snot ... okay, FAKE snot!

Lead the group through making fake snot.

**To make fake snot:**

1. Put about a tablespoon of glue on the plate.
2. Add a few drops of water and stir with the popsicle stick.
3. Add a couple of drops of food coloring and stir.
4. Add a teaspoon of Borax liquid and stir. The fake snot should start to gloop up on the stick.
5. Pick the fake snot up and roll it in your hands until it has a nice texture.
6. Fake a sneeze into your hand. Let the fake snot goop out between your fingers. GROSS!
7. Store your fake snot in the film canister.

*continued ...*



How did that happen?

The glue is made of long stringy molecules. When the Borax is added, it connects the glue molecules together. The mixture gets thick and gooey. You can think of the result as a ladder, with Borax making the rungs and the glue molecules as the sides.


Get everyone's attention again.

You may be wondering how boogers fit into the snot picture. Does anyone know?

Take suggestions.

The mucus coats the hairs inside your nose. The scientific name for nose hairs is vibrissae. When you breathe in, dirt gets trapped in the goopy hairs. The dirty mucus clumps up, dries out with your breathing, and a booger is formed!

Thanks for being part of *Holes in your Head*. Remember to keep your fake snot stored in the film canister, and have a great day at (your museum).



# The Poop on Poop

What you need:

Loud jacket and tie (to impersonate a game show host)

Scoreboard (chalkboard, or felt board with poop-shaped cutouts ...)

Game show questions as follows, written on index cards.

What do you call bat poop? (2 points)

a) manure

**b) guano**

c) cave whitewash

What do you call farm animal poop? (1 point)

**a) manure**

b) dung

c) cow patties

What do you call wild animal poop? (2 points)

a) droppings

**b) scat**

c) bear berries

What is the scientific name for poop? (2 points)

a) dookie

b) manure

**c) feces**

How long is your large intestine? (2 points)

**a) 1.5 metres (five feet)**

b) 100 metres (300 feet)

c) 30 centimetres (one foot)

About how long does it take your body to turn food into poop? (1 point)

**a) 24 hours**

b) two weeks

c) ten minutes

True or false—you can sometimes see corn kernels in your poop. (1 point)

True, your body can't digest plant fiber.

*continued ...*

**True or false—poop is made entirely of bacteria. (1 point)**

False, bacteria makes up about half of poop.

**What part of your body does poop exit from? (1 point)**

**a) anus**

b) small intestine

c) belly button

**What's the scientific name for taking a poop? (This should always be the last question! Assign an appropriate number of points so that the score is tied.)**

a) intestinal attack

**b) peristaltic rush**

c) number 2

**Materials for the peristalsis pinch:**

Hollow rubber tube (but not a garden hose). If you can't find one, try a hollow plastic jump rope or a long balloon with both ends cut off.

Funnel

Cooking oil

Marble

**What to say and What to do:**

**At the *Grossology* exhibit, you probably saw all sorts of gross things. Who would like to name their favourite gross thing that they saw at the exhibit?**

Take some suggestions.

**Today's activity is about poop! But before we begin, it's time for the poo poo IQ quiz. Are you ready?**

Put on your game show host costume.

**We'll divide the group into two teams. You're the large intestines, and you're the small intestines. I'll keep score. Each question is worth a certain number of points.**

Alternate asking questions to each group. If the large intestines don't get their question, the small intestines can try to answer it and get the points (and vice versa). Keep score. Assign the appropriate number of points to the last question so the score ends up tied.

**Wow, a tie! You guys really know your poop!**

*continued ...*

The scientific name for taking a poop is peristaltic rush. Everyone say it—  
**PERISTALTIC RUSH.**

Peristalsis is a pinching action that moves poop through your intestines. It's the same action that pushes food down your throat. We're going to make a model of peristalsis in your intestines.

**This rubber tube represents your intestines.**  
Have a couple of volunteers hold the intestines.

**These people represent the muscles in your intestines.**

**Your intestines have mucus in them. This oil represents the mucus.**  
Use the funnel to pour some cooking oil through the tube.

**This marble represents poop.**  
Put the marble in one end of the tube.

**Your intestines pinch the poop along like this.**  
Pinch behind the marble to make it move forward. Have your volunteers do the same thing.

**When your rectum (the last 8 inches of your large intestine) fills with poop, it's time for the peristaltic rush. Your body sends a message to your brain to let it go.**  
Have one volunteer push the marble right out the end of the tube.

**You can probably imagine what this end of the tube represents!**  
So the next time you've really GOT TO GO, you can say "Pardon me, it's time for a peristaltic rush."

**Thanks for being part of *The Poop on Poop*. Enjoy the rest of your day at (your museum).**