

Breath-Taking System

What's The Plan?

Take a deep breath in... now let it out! What is going on? Your *respiratory system* is working non-stop to get fresh oxygen into your body and used up carbon monoxide out! We can see some important parts of this system like our nose and mouth, but what about what happens inside? Follow along to build a model of our lungs and find out!

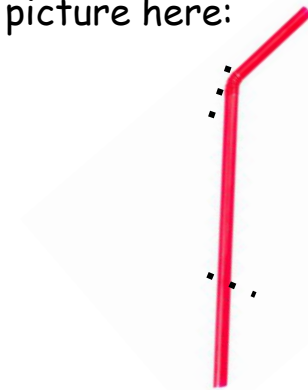
What You'll Need:

- Bendy Straw | Paper or Plastic, any small tube you can cut
 - 2 Small Balloons | Water balloons
 - 1 Regular Balloon | Plastic Wrap, any size balloon
 - Tape
- 500mL Recyclable Plastic Bottle (with the cap!) | Strong plastic is best, like a Gatorade bottle!
 - Hot Glue | White glue, Sticky Tack
 - Scissors



What To Do:

1. First, we'll start by creating the *trachea* and *bronchi*. To do this, take your bendy straw and bend it! Then make two cuts like in the picture here:



2. Now attach the piece you cut off the bottom to the small hole you made in the bend. Ask an adult to secure it with hot glue and you're good to go!
3. Time to add the *lungs*! Take two small balloons and cut the open end off each one. Then attach one to the end of each *bronchi* with some tape.
4. Human's lungs are in their chest cavity, we'll model this with a bottle! Have an adult cut a plastic bottle in half, keep the half that has the cap!
5. Take the cap from the bottle and ask an adult to cut a hole in the center of it, large enough for your *trachea* straw to poke through. Then place your lung model into the bottle and screw the cap on - make sure your straw pokes through the cap! Ask an adult to secure the straw with some hot glue, so no air can escape around it!

6. Finally, we need to create the *diaphragm* so that our *lungs* can inhale and exhale! Take the normal size balloon and cut the open-ended tail off. Now stretch that balloon all the way around the open bottom of your bottle, so it creates a tight seal all the way around. Tape the edges so the balloon stays in place!
7. You now have a finished lung model! Gently pull down on the *diaphragm* until the *lungs* inflate, then release it and watch them deflate!

Why Did We Do It?

Here is a list of important words we use during the project!

- *Respiratory System*: The respiratory system is made up of several different organs and muscles that help get oxygen into our body.
- *Trachea*: The trachea is found in the throat and helps move air between your head and chest. It is lined with tiny hairs called cilia that collect dust or other particles to keep the lungs safe!
- *Bronchi*: Each of the two bronchi connect to the lung on their side. Inside the lungs the bronchi start branching into smaller and smaller branches called bronchioles. Eventually the bronchioles end as alveoli, tiny air sacs where oxygen can enter the bloodstream!
- *Diaphragm*: This is a big muscle at the bottom of your chest cavity (sometimes called your thorax). When you breathe in, this muscle moves downward, and pulls air down from your mouth or

nose to your lungs. When the muscle relaxes it moves upwards, pushing the air out of your lungs!

How Did It Go?

We'd love to hear about all the amazing STEM projects you're doing! Show us your finished projects on any of the following social media platforms by tagging us!

Twitter: @MyMindsInMotion
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Instagram: @ucalgaryactive



Let us know how you felt about the project! Please [click here](#) or scan the QR code above to fill out a short survey!