

He knew that his robot friends would need to know..... **What it is that he is explaining.**

The order that things happen.

What causes them to happen.

The effect of what happens.

Dusty He also knew that he needed an **introduction** to introduce his explanation.

He knew he could use a **flowchart** to plan what he was going to write.

This happens... leading to... this... leading to... this...

Dusty He also knew that he could use **illustrations** and **diagrams** with **labels** and **captions** if he thought it would help him to explain.

He knew that it was very important to explain things **step by step**. Pod had told him that it was called explaining things in a **logical order** but Dusty just thought of it as steps. He imagined going on, step by step, until he had finished his explanation and everyone understood.

Dusty

He also knew that it was a good idea to use **paragraphs** to talk about each step and, he knew he needed a good ending.

Dusty thought he was ready to start writing. He started with his title

Why do humans have lungs?

Why do humans have lungs?

Then he wrote his introduction.

Lungs have a very important job to do. On Earth, all humans breathe. Their lungs help them breathe. As they breathe in, their ribs move up and out and air rushes in to fill their lungs. Then they breathe out and their ribs drop back. That forces all the air out again.

Then he thought he'd draw a little illustration to show how human lungs breathe in and out.

Dusty started to explain. This is what he wrote in his first paragraph.

The air that humans breathe is sucked up their nose or into their mouth. Then it goes down their windpipe into their lungs.

Dusty drew a diagram to explain.

Air goes in through the nose. It goes down the windpipe. Then goes into the lungs.

Dusty was ready to explain the next step so he started his second paragraph

There are lots of tubes in human lungs and at the end of the tubes there are bunches of air sacs. The air sacs fill up with air like balloons then, oxygen from the air goes through the air sac walls into the human's blood.

Dusty drew another diagram to show what he meant.

Dusty was ready to explain the next step so he started his third paragraph.

After the oxygen has gone through the air sac walls, blood carries it from the lungs round the body. The main job of blood is to carry food and oxygen to all parts of the human's body. The food and the oxygen give humans energy so that they can do all the things they want to do.

Dusty drew another picture to show how the blood travelled round a human body.

Dusty was ready to explain the next step so he started his fourth paragraph.

While the oxygen is mixing with food and travelling round the human's body making energy, humans breathe out. All the used, waste air in their lungs is squeezed out ready for new air to be breathed in again. The waste air is carbon dioxide which humans do not need.

Dusty drew another diagram.

Dusty decided to finish his explanation by saying how important lungs are to humans.

Lungs are very important because they help humans to take oxygen into their bodies. Oxygen helps to give them enough energy to do all the things they want to do and helps their bodies to work properly. Humans can live for several days without food and water but they can live only a few minutes without breathing air and taking in oxygen. That's why they need their lungs!

Now that Dusty had written all the different parts of his explanation, he decided to put them all together to see if they made sense.

Why do humans need lungs?

Lungs have a very important job to do. On Earth, all humans breathe. Their lungs help them breathe. As they breathe their ribs move up and out and air rushes in to fill their lungs. Then they breathe out and their ribs drop back. That forces all the air out again.

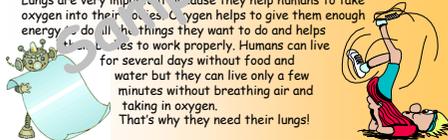
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There are lots of tubes in human lungs and at the end of the tubes there are bunches of air sacs. The air sacs fill up with air like balloons then, oxygen from the air goes through the air sac walls into the human's blood.

After the oxygen has gone through the air sac walls, blood carries it from the lungs round the body. The main job of blood is to carry food and oxygen to all parts of the human's body. The food and the oxygen give humans energy so that they can do all the things they want to do.

While the oxygen is mixing with food and moving round the human's body making energy, humans breathe out. All the used, waste air in their lungs is squeezed out ready for new air to be breathed in again. The waste air is carbon dioxide in it that humans don't need.

Lungs are very important because they help humans to take oxygen into their bodies. Oxygen helps to give them enough energy to do all the things they want to do and helps them to breathe properly. Humans can live for several days without food and water but they can live only a few minutes without breathing air and taking in oxygen. That's why they need their lungs!



Dusty read his explanation through again to make sure it made sense, then he gave it to Pod to see if Pod thought it was ready to show to his robot friends. I wonder what Pod said.....



Dusty had heard that sometimes people found it hard to breathe so, he asked Pod to explain why. This is what Pod told him.



Why do some people find it hard to breathe?

Sometimes people find it hard to breathe because they are **allergic** to things they breathe in, such as dust, pollen, feathers or pet hairs.

An **allergy** happens when a person's body fights ordinary things as if they were germs. This causes a rash, wheezing or tummy ache.

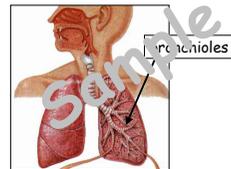


Hay fever can be caused by an allergy to pollen. When someone has hay fever their eyes become watery and itchy and they sneeze a lot.

Others have asthma. Asthma can be caused by an allergy. It makes it hard for people to breathe air into their lungs so they wheeze and cough.



When someone with asthma breathes air into their lungs, the air goes along tubes called **bronchioles**. Asthma makes the bronchioles narrow so less air can get through.



Breathing in medicine from an inhaler helps to open up the bronchioles again so that it's easier to breathe.

Most people who have asthma carry an inhaler with them for times when it's hard to breathe.



When people use an inhaler they have to take off the cap and give the inhaler a good shake.



Step 1 As they breathe out through their mouths, they put the inhaler between their lips and start to breathe in slowly.



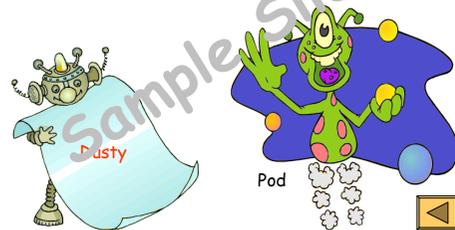
Step 2 At the same time they push down once on top of the inhaler so they breathe a spray of medicine. Then they hold their breath and count slowly to 10.

After that, they wait for one minute and do it all again.

It's hard to avoid things that cause people to have an allergy but doctors have medicines, like the medicines in an inhaler, that can help.



Dusty was excited, now he had something else that he could explain to his robot friends at home!



When Dusty had first arrived on planet Earth he thought that humans were very strange creatures. There were lots of things he didn't understand about but the longer he stayed on Earth, the more he began to understand.



The more he began to understand, the more he tried to explain to his robot friends at home.

Last week he sent a message to his friends explaining about the strange things humans had sticking out on either side of their heads.....

Humans called them ears.



Dusty decided to explain how ears work.



His title was

How ears work

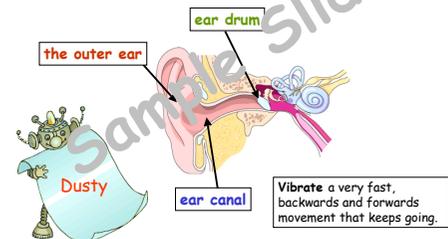
Ears help people and animals listen for sounds. They know where a sound comes from because they have two ears. The ear closest to the sound hears it a little louder and slightly before the other one so they can tell which direction the sound is coming from.



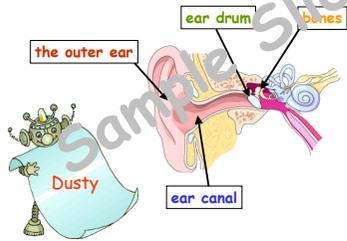
The **outer ear** catches the sound and moves it down the **ear canal** to the **eardrum**.



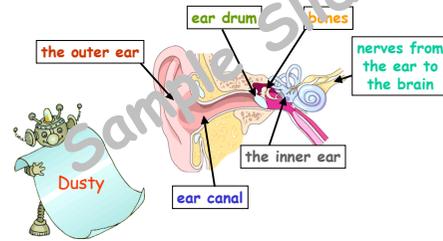
The sound reaches the **eardrum**. The eardrum is very thin. It vibrates easily. Even very soft sounds can make the eardrum move.



Tiny **bones** touch the **eardrum**. When it moves, they move.



The tiny **bones** push on the inner ear. The inner ear has lots of **nerves** in it. They sense the pushing and send signals to the brain.



What happens next?
People and animals hear the sounds!

