

Pendulum experiment by Phoebe, Year 8



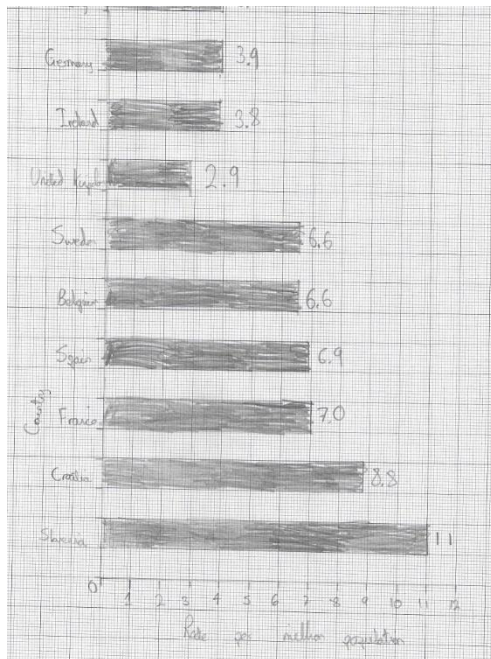
'Should Heart Donations be compulsory'. By Archie Year 7

The role of the heart in the body is extremely vital. Blood is pumped by the heart to the lungs where it disposes of carbon dioxide and picks up oxygen and glucose. It then goes back to the heart where it is pumped all the way around the body and then the cycle begins again. If you didn't have a heart, you could not live.

I think that heart donation should not be compulsory. However i still believe that there should be an increase in the number of hearts being donated. Heart donations can be vital and can save lives. Sometimes heart failures can occur due to coronary artery disease and this occurs when too much fat builds up in these arteries and the heart cannot get energy. Other reasons for heart failures could be diabetes, heart valves not working properly, high blood pressure and sometimes it is just inherited.

Around the world heart transplants are not extremely common. Here is a graph comparing the number of heart transplants in Europe in 2018

A graph to show the number of heart transplants per million population in different European countries in 2018



This table shows us that in Slovenia they performed 11 heart transplants per million population however in the United Kingdom we performed just 2.9. This figure shows us that we must increase the number of heart donors so that more can be carried out

There are also many risks that come with heart transplants. One of the most common is rejection. This is when the body decides that the heart is foreign and attacks the body. Signs of rejection are fatigue, shortness of breath and tummy pains. Another risk is graft failure and this is when the heart donated fails and does not work properly. This only occurs in 5-10% of people but can be very serious. One more risk with heart donations are that the side effects can be quite nasty such as weight increase, increase in blood pressure and more vulnerability to infections.

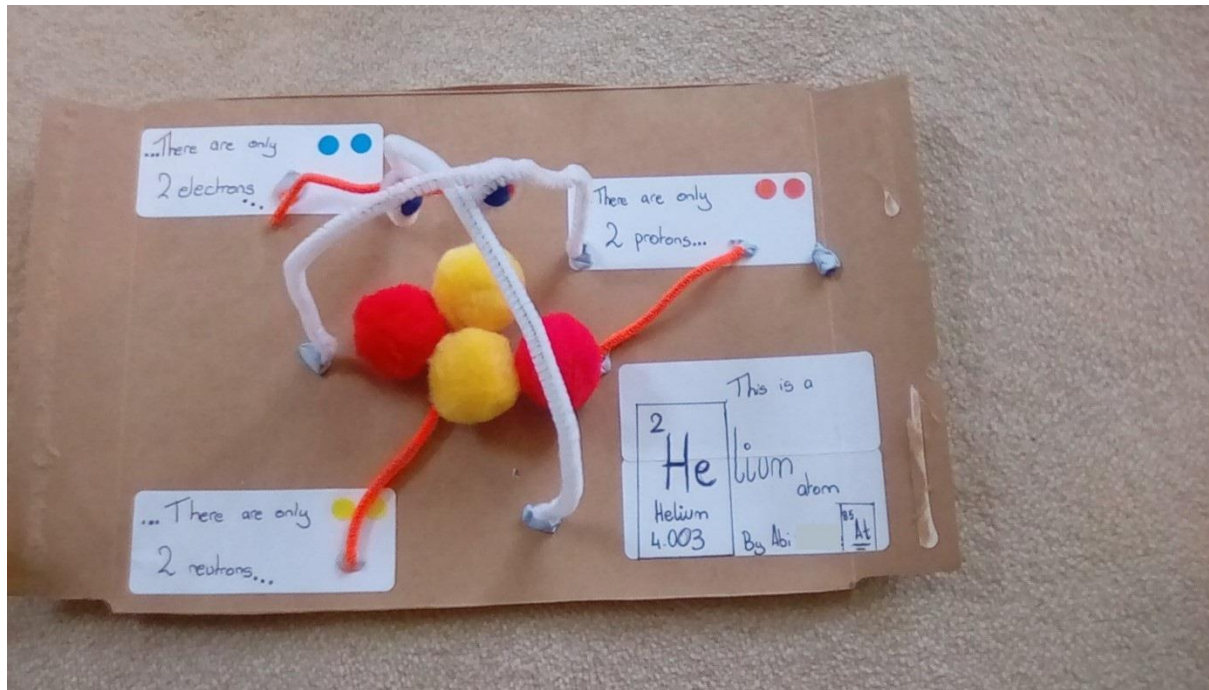
One reason to become a heart donor is that it doesn't affect you as you are already dead. In the UK there is a shortage of hearts being donated and your heart could save someone's life. The heart transplantation shows no risk to the donor and it helps people feel hope that they can live and can start again, with their heart. Some people are against heart donations due to the fact that they want to die with their whole body and keep the whole of them together. Some may believe that their body is sacred and want to keep it and all of these reasons are perfectly fine. However if you do not feel a need to keep your heart, donating it could save someone's life.

In conclusion, I believe there should be a system where everybody is assumed to want it donated, but there is an opt out feature where people against it can opt out. I believe this is the fairest way because people who severely want their heart can keep it but the rest who don't mind will help save lives.

References:

<https://myheartsisters.org/2016/03/13/two-ways-to-portray-heart-failure-one-of-them-works/>
<https://www.statista.com/statistics/537910/heart-transplant-rate-in-europe/>
<https://www.nhs.uk/conditions/heart-transplant/risks/>

Helium by Abigail Year 6



Gas exchange in the lung by Tanisha, Year 7

Route into the body

The air enters the respiratory system through the nose or mouth and down the trachea. The trachea branches off into 2 bronchi and bronchioles.

Adaptation of alveolus

The smallest bronchioles end with air sacs called alveoli. They inflate during inhalation and deflate during exhalation.

Deoxygenated blood

Carbon dioxide and red blood cells low on oxygen flow through the alveolus. The carbon dioxide diffuses across the membrane to be expelled with the next exhalation.

Gas exchange

When we inhale, the oxygen from the air diffuses across the membrane and attaches onto the passing red blood cells. At the same time, the carbon dioxide is also expelled so it can be exhaled next.

Oxygenated blood

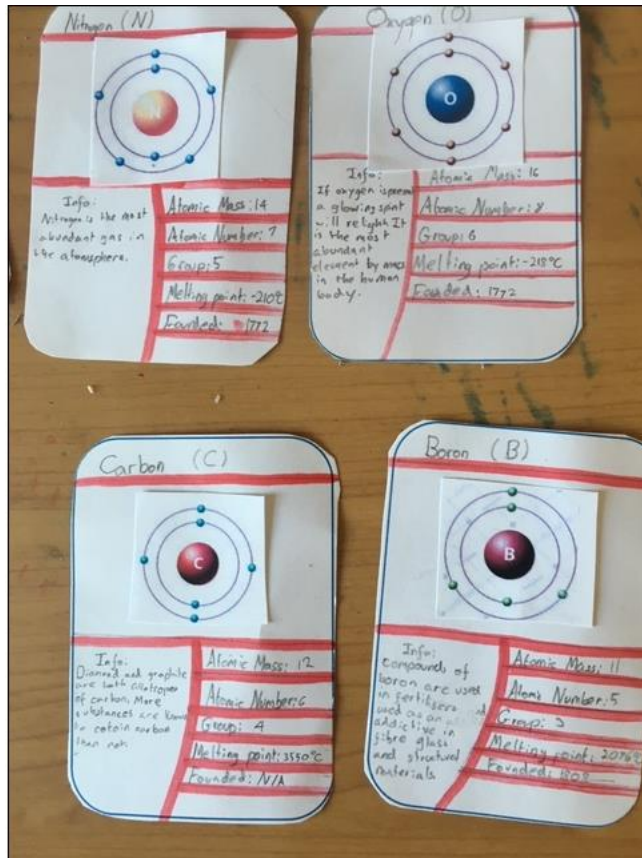
Once the oxygen has attached to the red blood cell, it makes its way to the heart. The heart then pumps the blood cells to the rest of the body.

Composition of gas

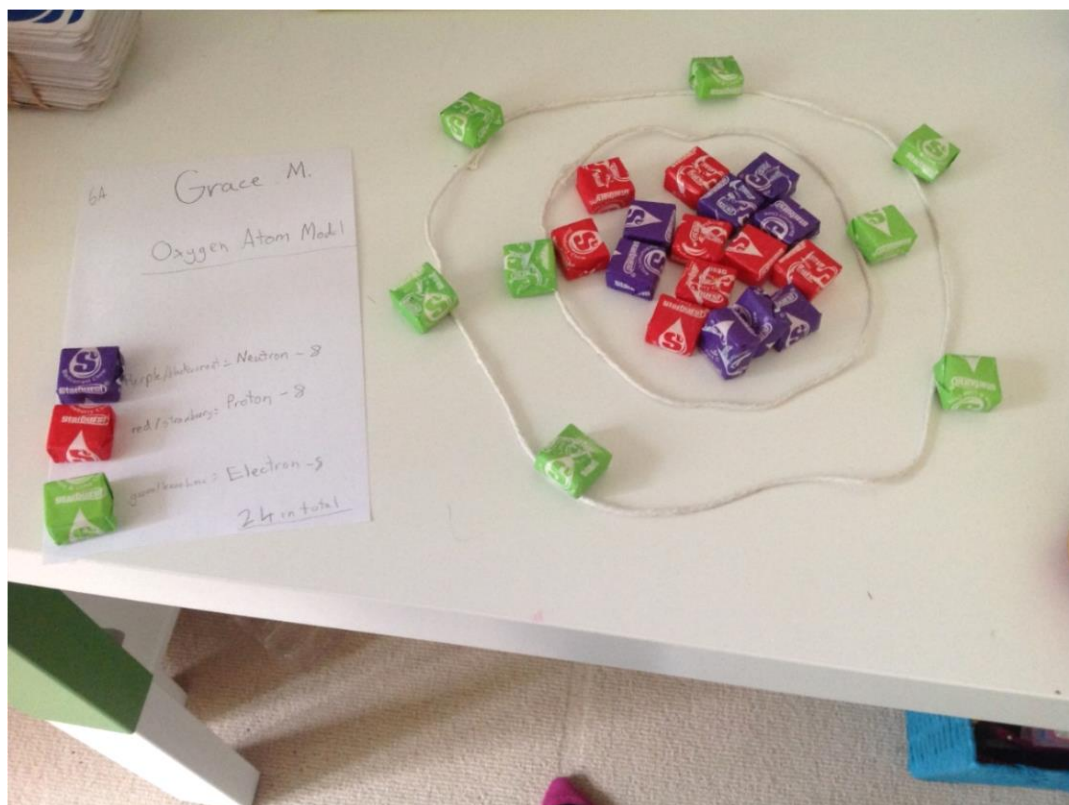
Gas	% in inhaled air	% in exhaled air
oxygen	21	17
carbon dioxide	0.04	4
nitrogen	78	78

As a result of the gas exchange the inhaled air has a higher percent of oxygen and a lower percentage of carbon dioxide than the air we breathe out.

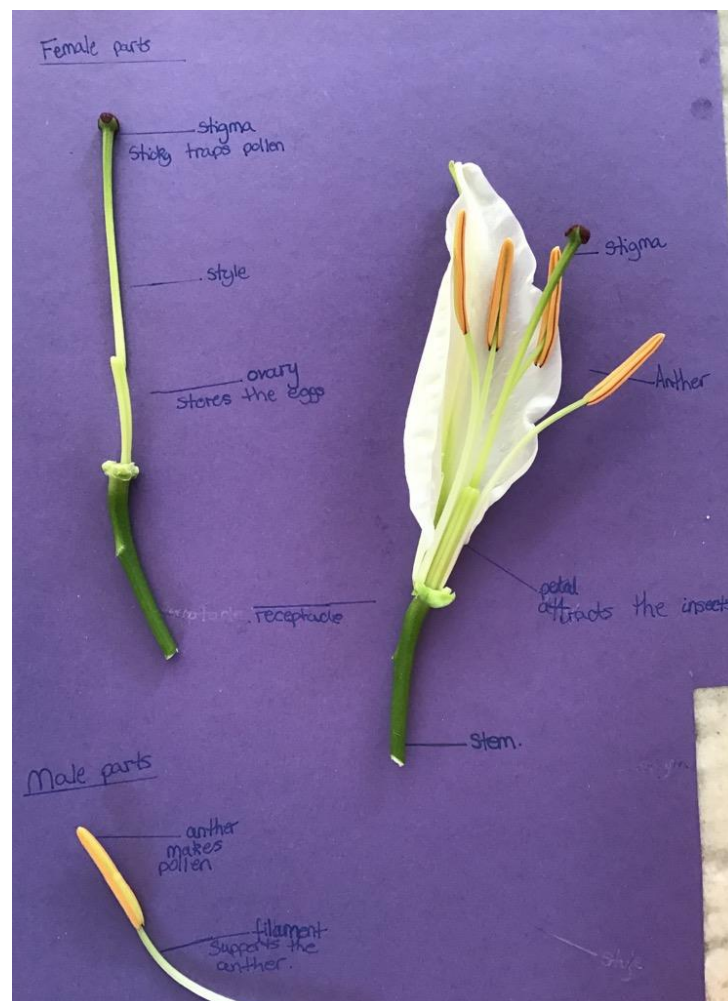
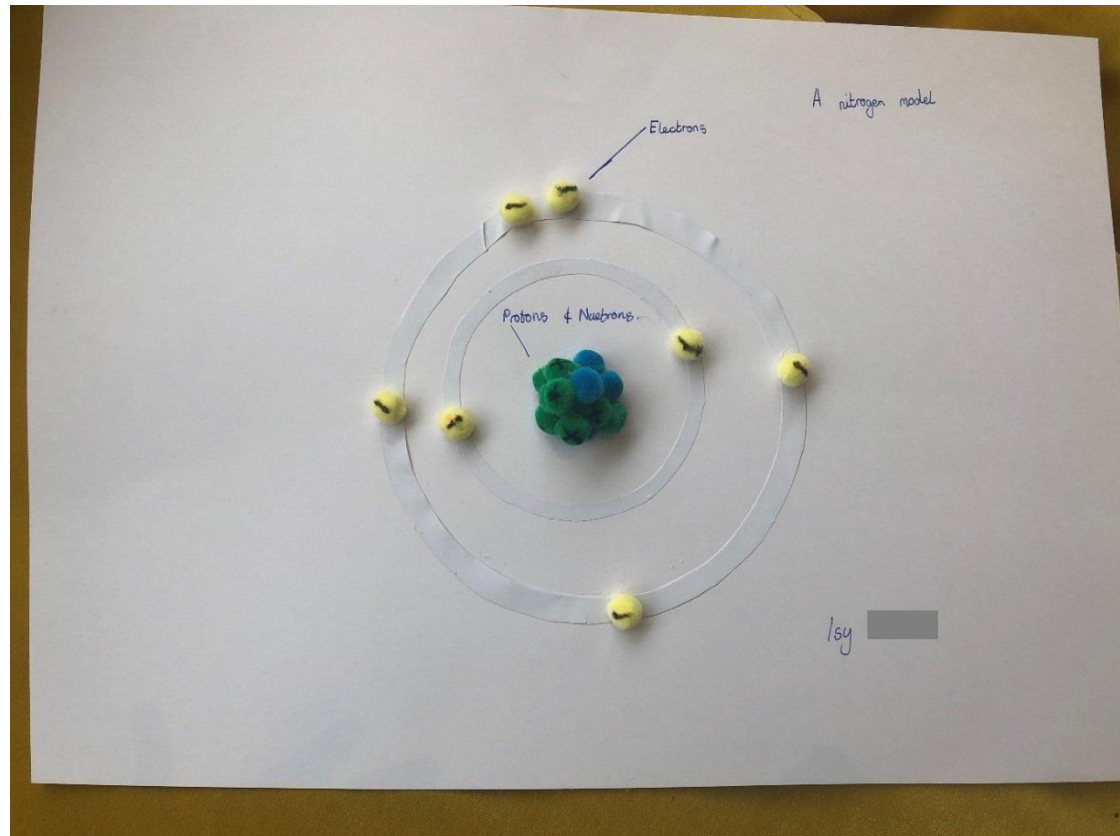
Elemental Top trumps by Neal, Year 6



Oxygen Atom by Grace, Year 6

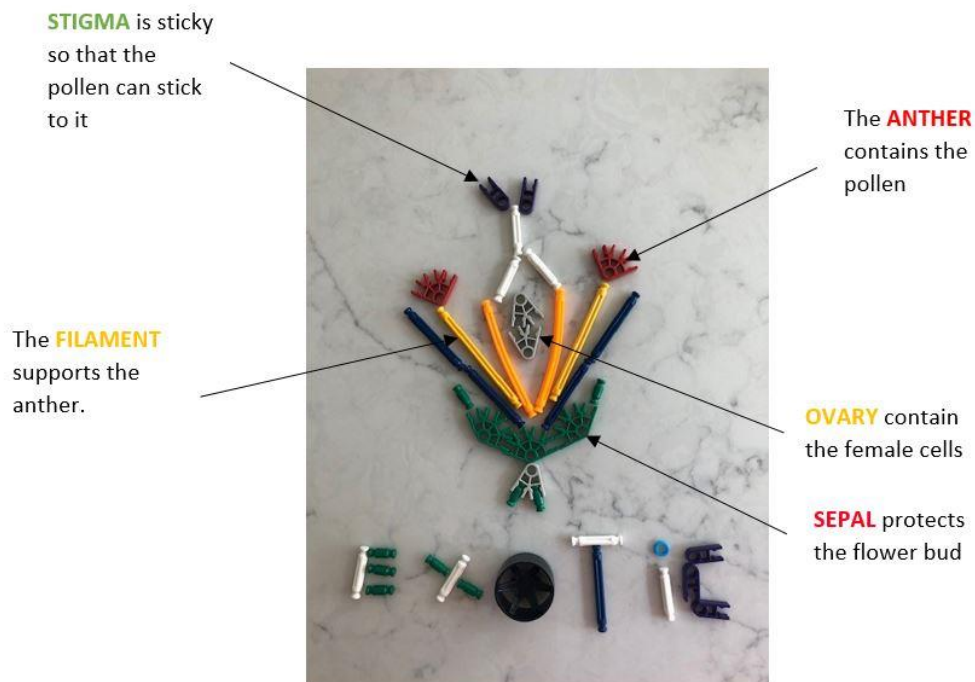


Nitrogen Atom by Isy, Year 6



Flower dissection by Anna, Year 5

Flower model by Ross, Year 5



Oxygen by Hannah, Year 6

