



## Oxygen - O<sub>2</sub>

Dr Jekyll and Mr Hyde

Were opposite sides of one coin.

One had noble virtues -

The other: a model of 'wrong'.

And so, it is with many things,

A struggle 'tween one or another.

But what of a gas, which gives life with one hand

Whilst dispensing decay with the other?

Oxygen is full of verve:

Reacting and bonding with ease.

But though sustaining existence,

It authors much rot that one sees.

Dissolved in water, a fifth of our air,

Filling lungs, refreshing gills.

It permitted life to evolve on earth.

Countless role it fulfils:

Haematite, bauxite, limestone and sand -

All rocks and ores with O<sub>2</sub>.

DNA, water, ozone and blood:

Essential for fire too.

The very fact that it reacts so well

(And helps microbes to prosper)

Causes corrosion, decomposition, rust

And all that dies to fester.

So, oxygen, like Jekyll and Hyde,

Switches from 'hero' to 'villain'.

Spoiling what we may wish to retain,

But giving breath to the living.

©JMS



eve-the-strange@deviantart

Oxygen is essential to life on earth. We simply can't live without it.  
But it's not just us - animals, plants, everything needs it!

At the same time, however, it causes a lot of decay which, as we will see, is not necessarily a bad thing!

So, let's investigate oxygen - the Jekyll and Hyde of the periodic table - using our poem.



## INVESTIGATE THE SCIENCE

- ✓ When we breathe in air it doesn't just contain the gas oxygen. Can you discover what other gases air consists of? Try to find out the percentage of each gas that makes up air. Display this in a graph of your choosing.
- ✓ Once air is breathed in, using your lungs, it is carried around to every part of your body. However, it is not carried as a gas anymore, but it is dissolved in a liquid. Can you name it? (clue: it's red, and not everyone likes to look at it!!!)
- ✓ But, how do we actually breathe in? Well, it has to do with air pressure and a large muscle inside our body cavity called the **diaphragm**. Fortunately, how it happens is easy to understand if you build a simple model. Find out how to here:

<https://www.youtube.com/watch?v=CBv2BqqAydE>

## Anatomy Experiment: Model Lung



- ✓ Oxygen also supports decay or rotting. Organisms which cause rotting (or decomposition), called **decomposers**, often need oxygen to live. This is why wrapping food in clingfilm can help prevent rotting - it stops the oxygen feeding the decomposers that are already on the food. Can you think of other ways that food is preserved? Hint: Look in your cupboards.
- ✓ Oxygen also plays a part in rusting. You'll not be surprised that dropping an **iron nail** into water will give you **rusty iron nails!** Can you devise an experiment to test how you can prevent iron nails in water from rusting? Hint: can you block oxygen coming into contact with the iron nail. Remember water is H<sub>2</sub>O - that's hydrogen and.....**oxygen!**

- ✓ What would happen if things didn't decay? Imagine a world where nothing rotted. What problems would this cause? (Think autumn leaves for a start!)



## INVESTIGATE THE STORY

- ✓ **The Strange Case of Dr Jekyll and Mr Hyde** is a novel by **Robert Louis Stevenson**. The charming and good Dr Jekyll invents and takes a potion that changes him into the horrible and dangerous Mr Hyde.
- ✓ If you could invent a potion to change some aspect of yourself, what would you change? What ingredients would be in your potion? Write a comic strip that tells the story of you and your potion.
- ✓ Can you name any other books by Robert Louis Stevenson? One was made into a film featuring the Muppets! You could watch it or, even better, read the book. It's a good read and not too hard!



## INVESTIGATE THE POEM

- ✓ This poem tells a story. Each verse tells a different aspect of the story. Can you spot any patterns in each verse?

- ✓ Try taking a story that you are familiar with and turn it into a poem. What patterns, if any, will you include in yours?
- ✓ What do the following words mean: virtue, noble, sustaining, dispensing, essential?
- ✓ The word '**tween**' is used in the poem. What job does the apostrophe fulfil in this word?