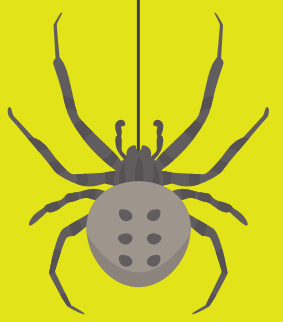


# EWWW



# GRASS



## FOUL FACTS AND PUTRID PICTURES



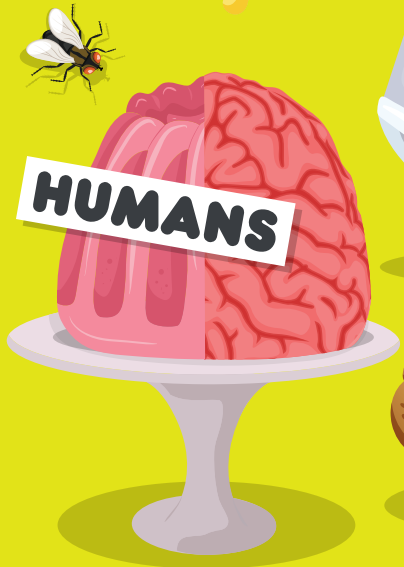
**EARTH**



**SPACE**



**SCIENCE**



**HUMANS**

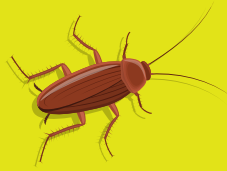


**ANIMALS**



**Uncorrected  
Sample**

# Dan Marshall



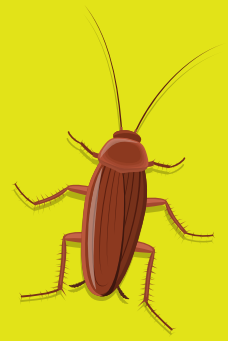
**SPACE**

12

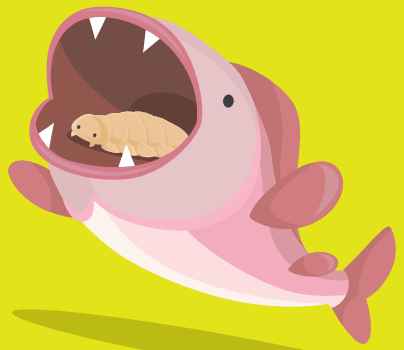


**HELLO**

8



**CANT**



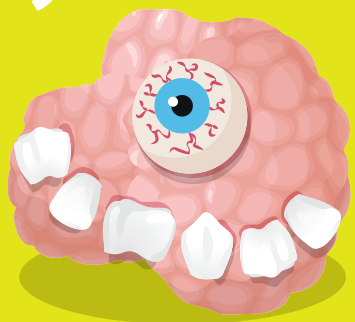
**ANIMALS**

134



**HUMANS**

90



**EARTH**

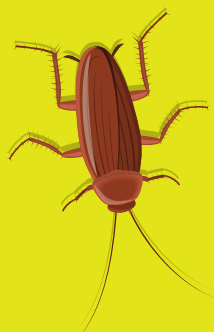
42



# RENTERS

**SCIENCE**

180



**GOODBYE**

220

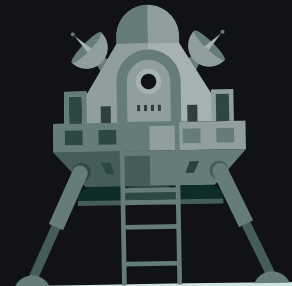


# THERE'S POO ON THE MOON



Littering is something we all try not to do. There's always a bin nearby for us to dispose of our rubbish. But the astronauts on the **6** Apollo moon landing missions did not have this luxury. Because the astronauts aboard those landers collected large amounts of moon rocks to return to Earth, the extra weight had to be offset by leaving some things behind on the moon so the landers could lift off.

This discarded junk included, among other things, **2** golf balls, **12** cameras, **12** pairs of boots, **1** gold-plated telescope and almost **100** bags of human waste. This means that right now there are bags of poo on the surface of the moon. And lots of them!



It isn't just poo that the human waste bags contain. For extra yuckiness, there is also vomit and pee inside them. Eww gross!





## Mutant poo

The extreme conditions of the moon's surface wouldn't have allowed any microorganisms in the poo to grow over the past **50** years, but today's astrobiologists are interested in seeing if those microorganisms have undergone any genetic mutations. They're hoping someone will bring the poo back home to study.

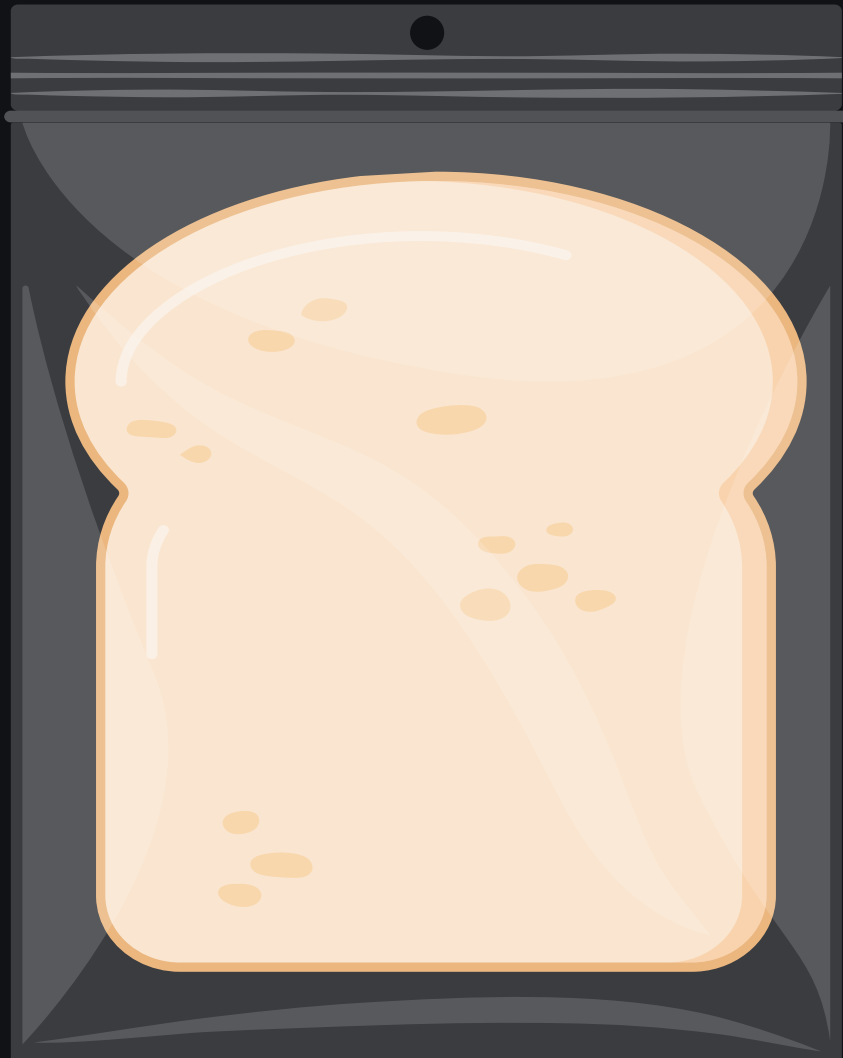
## Space nappies

During the flight to the moon, the astronauts relied on a plastic bag which was taped to their buttocks to capture poos. A space nappy. It was a revolting and inconvenient process that the astronauts, understandably, did not enjoy.

LET'S  
DO  
THIS!

# GROWING MOULD

Here on Earth, you can easily set up your own experiment to observe just how fast mould can grow in the right conditions.



## What you will need



Plastic zip lock bag



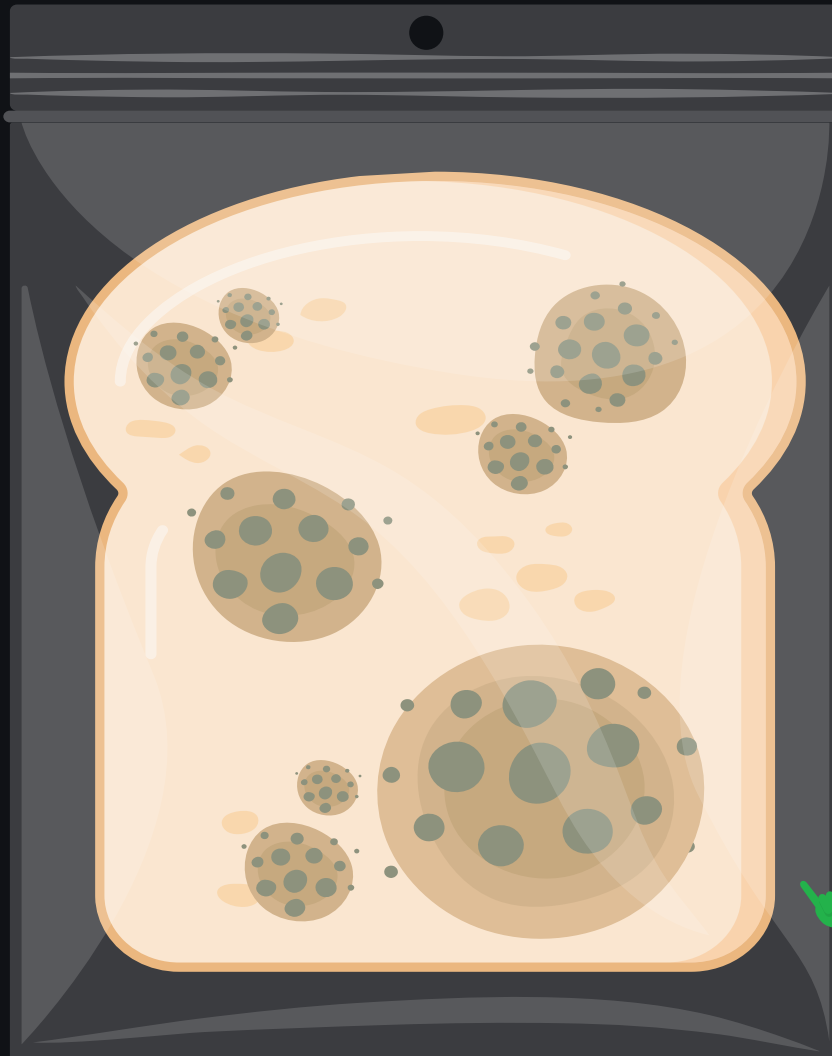
Bread slice



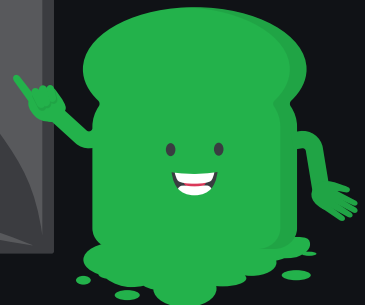
Water sprayer

## How to make the mould

- 1 Spray some patches of the bread with water
- 2 Seal the bread inside the plastic bag.
- 3 Store the bag in a warm area.
- 4 Observe the mould growth over time.
- 5 When finished, dispose of the bag carefully without opening it. Wash your hands thoroughly every time you have touched the bag.



It should take around **7-10** days before you see any significant growth on the bread.



# GIANT CORPSE FLOWERS SMELL OF DECOMPOSING MEAT

Flowers are usually associated with the nicer things in life. They're a great gift to brighten up anybody's day, but some flowers you definitely wouldn't want to give to anyone – except maybe your worst enemy. One such flower is referred to as the 'corpse flower'

and its stench has been likened to rotting flesh and even to death itself. The smell is so revolting that few people can last long around it. The most famous of these flowers are *Rafflesia arnoldii* and *Amorphophallus titanum*. Hold your nose!



*Rafflesia arnoldii*



The number of days the *Rafflesia arnoldii* flower stays open for.



## Rotten luck

The corpse flower's satanic scent is a chemical combination that mimics decomposition to attract insects who will help pollinate it. Beetles and flies who are drawn to the smell of decaying meat cannot help themselves and gravitate towards the flowers.

## Gentle giants

Both the *Rafflesia arnoldii* and the *Amorphophallus titanum* are enormous. The former can have a diameter up to **1 metre** and the latter can be up to **3 metres** tall. They are giants of the flower world.

*Amorphophallus titanum*



The number of hours the flower stays open for.

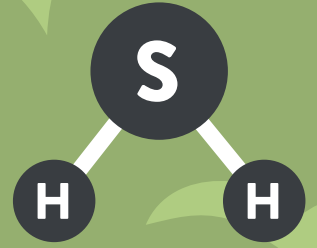
The number of years for *Amorphophallus titanum* to bloom.

## Getting warmer

Not only does *Amorphophallus titanum* fool insects with its smell, but it deceives them further by heating up to **36.7 degrees Celsius** to mimic a dying animal. So clever and so gross.

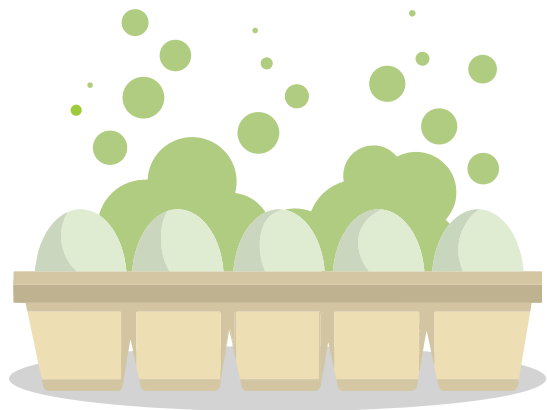
## Leaf it out

Although massive, the flowering *Rafflesia arnoldii* cannot support themselves. They have no leaves, stalks or even roots. They are parasites who rely on their jungle vine hosts for survival.



# VOLCANOS SMELL OF ROTTEN EGGS

An erupting volcano is a spectacular sight. The Earth's surface opens, allowing gas, hot lava and ash to escape from beneath the Earth's crust in a breathtaking and fabulous fashion. But if you were actually present at the volcano, it wouldn't just be a visual bombardment; your nose would be twitching too. And not in a good way. That's because the air around you would smell of the most rancid **rotten eggs** – a noxious smell so revolting you'd want to get out of there as fast as you possibly could.



## Burning up

The reason for the rotten egg smell around volcanos is **hydrogen sulphide** (H<sub>2</sub>S). Although low in toxicity to people, ingesting too much sulphur can cause a burning sensation or diarrhea. The dust you breathe in can irritate your airways and cause coughing, and your skin and eyes would be irritated too. You might even get blurred vision from the stench. Talk about a smell so bad it makes your eyes water!



## Mud slinging

As well as volcanos that erupt molten lava, there are also ones that spew out mud. The mud isn't the same staggering temperature as lava – in fact, it's cold to the touch! But it still reeks of rotten eggs. Cold, weird, eggy mud.

## Odoriferous eruption

When Iceland's **Bárðarbunga** volcano erupted in **2014**, the smell of rotten eggs could be whiffed as far away as Finland. That's over **2000** kilometres away.



# MAKING A VOLCANO

Seeing an erupting volcano up close is a difficult and dangerous task. Here's a way to see a volcanic eruption without the rotten egg smell and running the risk of being burned to a smoldering crisp. And it can be created using items you probably have at home. This experiment involves mixing baking

soda and white vinegar to simulate an eruption, and a little bit of modelling using Play-Doh. Since the Play-Doh gets wet, it's a good idea to use old Play-Doh that's starting to dry out a little. You can use a combination of different colours from past play sessions. Happy building!

## What you will need



Glass jar



Large plate



1 tablespoon  
baking soda  
(sodium  
bicarbonate)



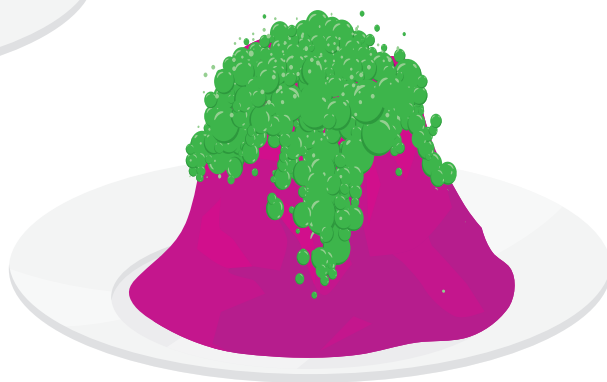
Food colouring  
(optional)



Play-Doh



125 millilitres  
white vinegar



## How to make the volcano

- 1 Place the glass jar on the plate.
- 2 Add the baking soda to the glass jar. You can also add some food colouring if you want to.
- 3 Build up Play-Doh around the glass jar and plate to create a volcano shape with a hole around the top of the glass jar.
- 4 Slowly pour the white vinegar into the volcano.
- 5 Enjoy the brilliant bubbly eruption!



The vinegar and baking soda react together to create **carbon dioxide** (CO<sub>2</sub>) and this gas makes the eruption!

# YOUNG CHILDREN'S SKULLS HAVE A FULL SET OF TEETH



You're a tooth-manufacturing factory. Your teeth start to grow even before you're born and over the course of your lifetime you'll have 20 baby (or milk) teeth and, once they've fallen out, 32 permanent teeth to take their place. However, there's a time in your life when you still have all your milk teeth and your permanent teeth are concealed inside your young skull, patiently lying in wait for their time to erupt through your gums and take their place in your jaw. Thankfully, we can't see them as they're all hidden inside your skull, below your eyes and in your chin. What a terrifying image!

# 526

This is the number of teeth that were found crammed inside the mouth of a 7-year-old Indian boy. They were inside a 'bag-like-mass', and were carefully removed by surgeons. It took the medical team 5 hours to carefully search through and count them all.



If you got a toothache in the Middle Ages, they would treat it by inserting live caterpillars into your mouth. Another 'remedy' was to put hot wax into your mouth. Ouch!

## Fall into decay

Tooth decay is one of the most prevalent diseases in the world, second only to the common cold. It's at least **5 times** more frequent than asthma and fevers and if left untreated can create some serious health problems and in very rare cases, death!



# Get ready to discover just how gross our universe really is.

Learn the foulest facts about space, Earth, humans, animals and science that have been tested by **real scientists**, and even do your own gross experiments.

Meet your guide, **Slimon**, who loves all things rotten, revolting, despicable and downright disgusting.

## For readers 8+

## Did you know ...

- There's poo on the moon?
- You will drool enough in your lifetime to fill two swimming pools?
- Whales do 974 litres of pee into the ocean every day?
- There's a wall covered in chewing gum that's over 30 years old?
- There's a robot designed to projectile vomit?

Full to the brim with the world's filthiest facts and most putrid pictures, this book is sure to make you and your friends say: '**Eww Gross!**'

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Published by Pantera Press 31 October 2023

ISBN 978-0-6456245-6-4 | RRP \$29.99

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ARC ISBN 978-0-6458180-8-6

