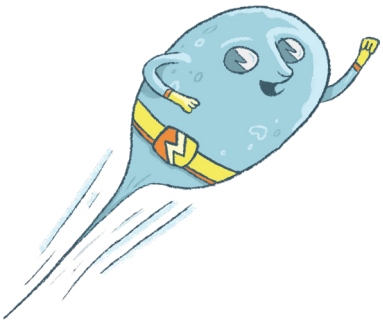


BACTERIA: LIFE'S SECRET SUPERHEROES

This exhibition is all about bacteria and how they survive, thrive, fight and die by the trillion every minute. They swim using nanoscopic motors, and battle with spears. They sense, communicate and remember. They are all around us, living in and on us, in the air, oceans and ground; in fact they're everywhere in nature!

Bacteria are so tiny that you cannot see them with your eyes but thanks to the help of a microscope (a bit like a magnifying glass) we can see what they look like. Some bacteria are harmful and can make us sick, but most bacteria are actually good for us. Discover more about these secret superheroes and their extraordinary powers! **Use this trail to help you explore this exhibition.**

THE LANTERN

Bacteria name: *Photobacterium leiognathi*

Take a close look at the anglerfish on display. Can you see the rod coming out of its head? This is called an 'esca' and bacteria live inside it. The bacteria inside glow blueish white making it light up just like a lantern. **How do you think the anglerfish uses its "lantern"?**

- **To look in dark spaces** ☐
- **To attract prey** ☐
- **To host disco parties** ☐

THE MEDICINE MAKER

Bacteria name: *Escherichia coli (E.coli)*

E.coli has a bit of a bad reputation as it can cause food poisoning. But millions of *E.coli* live harmlessly in your gut, keeping more dangerous bacteria away. Scientists use *E.coli* as a medicine making factory as it can produce human insulin - a life saving medicine for diabetics who are unable to produce insulin to break down sugars in their bodies.

Look up at the giant E.coli sculpture hanging from the ceiling. It looks like it has lots of wavy arms (flagella). **What do you think it uses them for?**

Eating ☐ **Attacking** ☐ **Swimming** ☐

Museum of Natural History

OXYGEN MAKER

Bacteria name: *Prochlorococcus*

This bacterium grows in wet and damp places, usually in rivers and oceans. Around 2 billion years ago bacteria like this started to make oxygen through photosynthesis, just like plants. This changed the world completely as it paved the way for the evolution of animals that breathe oxygen.

Can you name three things that need oxygen to exist?

....

PLASTIC GOBBLER

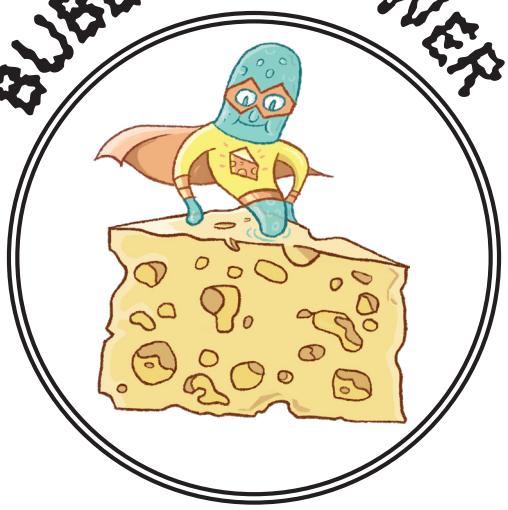
Bacteria name: *Ideonella sakaiensis*

Did you know that 38 million plastic bottles are used daily in the UK alone. Sadly, these can end up in our oceans where animals such as turtles and birds can confuse plastic for food. Scientists have discovered this new bacterium that can degrade (break down) plastic by eating it. This could mean less harmful plastic in our oceans!

How long do you think it takes for a plastic bottle to degrade naturally?

- ☐ 450 years or more
- ☐ 100 years
- ☐ 20 years

BUBBLE BLOWER



Bacteria name: *Propionibacterium freudenreichii*

This bacterium lives around human sweat glands, clogging them up. Sounds gross, but it also makes holes in tasty Swiss cheese. When cheese is made another type of bacteria eats the milk, making lactic acid. The "Bubble Blower" bacteria then eats the lactic acid, releasing bubbles of carbon dioxide. These bubbles make the holes in the cheese.

What do you think the sweatiest part of your body is?
Clue: You might want to think twice about high fiving a friend!

.....

HOT-FOOTED HUNTER

Bacteria name: *Bdellovibrio*

This speedy bacterium can move at over 100 times its body length a second. It is the fastest type of bacterium known. This tiny but powerful bacteria is found almost everywhere in nature. It hunts other bacteria, drilling into them and digesting them before multiplying itself. It then bursts out leaving behind just the outside of the bacterium like an old, torn carrier bag flapping in the wind.
It's a comma shaped bacterium and has a single flagellum coming out from one end like a long tail.

Draw a picture of what you think this superhero looks like.

Go to the Welcome Desk to check if you got the answers right!