What are antibiotics?

They were discovered in 1928 when Alexander Fleming (who was Scottish!) found a type of mold (Penicillium) which could stop bacteria from growing. This was the first antibiotic - penicillin.

When do we need them?

Yes!
- Whooping cough
- Strep throat
- Urinary tract infections

No!
- Cold and running nose
- Flu
- Sore throat
- Ear infections

Improper antibiotic use can make them less effective, so we should only use them when required.

What is antibiotic resistance?

It’s when bacteria change and become resistant to the antibiotic used to treat the infections they cause.

What can we do to help?

Don’t do the things below:
- Lack of hygiene and poor sanitation
- Over-using antibiotics
- Not finishing treatment

What will we do with these data?

We will then figure out which bacteria are present in your soil sample, and which possible new antibiotics they are making.

In our project, we will all be “modern Alexander Flemings” and we will look for organisms that could produce future novel antibiotics.

Our experience

We extracted DNA from strawberry, mango, kiwi, apricot, and banana. We also did a sequencing exercise.

Pupils from each class chose a place in the school and everyone helped.

When we get back to the university we will extract DNA from the soil you collected.

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Similar to the exercise you have just worked on with the fruit DNA, we will match different sequences to different bacteria.

Types of bacteria

Information from your spot

Step one: Choose a place

Step two: Label bag with
- a) School
- b) Date
- c) Class

Step three: Fill 2/3 of ziplock bag with soil

Step four: Ask teacher to take a photo of place

Our spot

When we get back to the university we will extract DNA from the soil you collected.

Extract DNA

Analyze on sequencer

We will then figure out which bacteria are present in your soil sample, and which possible new antibiotics they are making.

Similar to the exercise you have just worked on with the fruit DNA, we will match different sequences to different bacteria.

We collected the soil into a labeled ziplock bag.