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Delivered weekdays at 6am.
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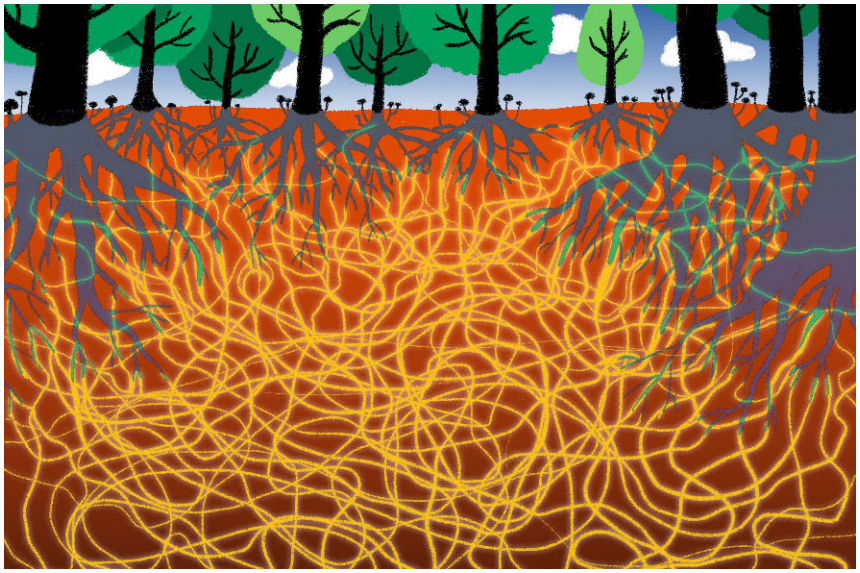
THE DAY Build a better world

News Detectives

TODAY'S BIG STORY

The hidden power of the wood wide web

The network of fungus beneath our feet is one of the biggest mysteries on our planet. Now, a new science mission is set to finally uncover its secrets.



Underground internet: The soil is home to one quarter of Earth's species.

Beneath every forest is an underground web. Plants use it to send each other messages. Now, scientists are starting to understand their secret language.

Did you know that a mushroom is not a plant? Actually, it is a fungus.

A fungus is a kind of living thing. It breaks down dead plants and animals for food.

Experts once thought **fungi** were harmful for plants. But this is not true. Fungi make a special **connection** with trees and plants.

A plant gives a fungus water and sugar. The fungus gives the plant important **nutrients** from the soil.

Fungi connect trees across whole forests. Experts call it the **"Wood Wide Web"**. Now, they want to make a map to show how it works.

You decide: Are plants talking to each other?

YES!

The Wood Wide Web helps plants **communicate**. It may not sound like human speech, but they are talking all the same!

NO!

These links are amazing. But they do not mean plants are talking. This is just a natural process that happens in forests.

KEY WORDS

Fungi: Plural of fungus, an organism that feeds on organic matter. Mushrooms and yeast are two kinds of fungus.

Connection: The act of linking together.

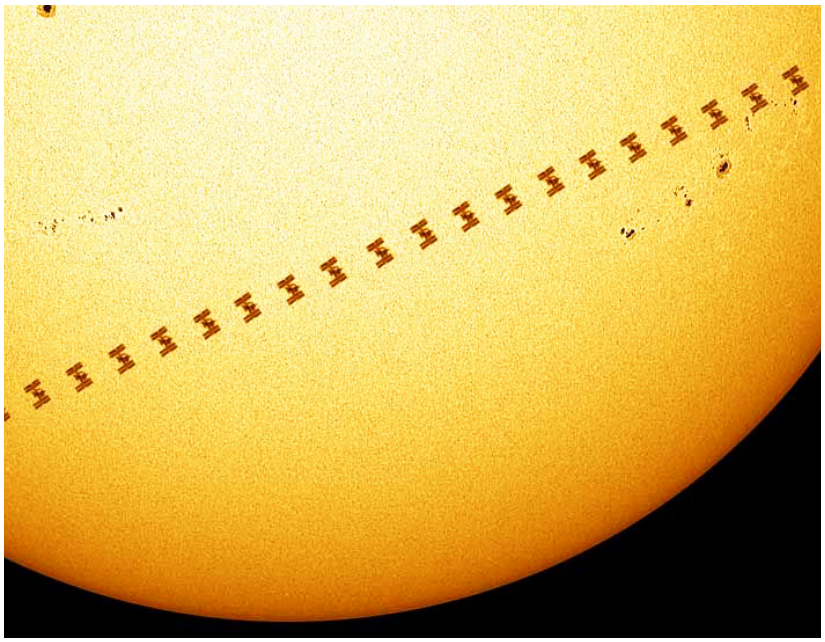
Nutrients: A substance that provides nourishment essential for healthy life.

Wood Wide Web: The official name for the internet is World Wide Web. Experts think the underground network is like the internet because it has so many connections.

Communicate: To give, receive and share information – in other words, talking or writing, and listening or reading.

Detective zone

Picture puzzle



Can you work out what this is?

- [ ] The eye of a Nile crocodile
- [ ] The space station travelling in front of the sun
- [ ] Insects walking across an orange

Spot the fake!

Only one of these news stories is fake. Which one?

- [ ] "Robots clone pigs with no human help"
- [ ] "Frozen baby mammoth found in Canada"
- [ ] "Scottish bird tracked to New York home"

Build the Change

Scientists have discovered thousands of unique plants and fungi – and each one has a different job. In this challenge, you will design a new species that has adapted to help the planet even more.

Step 1: Think of a name for your new plant or fungus. Where will it grow? What are its strengths? Can it communicate, and who with?

Step 2: Create your plant! You can draw a picture of it or, if you have time, use craft materials and LEGO bricks to make a real version of your new species.

Did you know...?

- Some fungi can glow in the dark.
- The largest living thing on Earth is a fungus.

Share your genius

Show your work to your class

Upload a photo of your work to the Build the Change gallery by scanning the QR code and have your work displayed to inspire real-world change.

This worksheet is available online every weekday at 6am from theday.co.uk/newsdetectives.
For any feedback or help please contact newsdetectives@theday.co.uk. Thank you.

Teacher notes

TODAY'S BIG STORY BACKGROUND

A science mission is set to explore one of the final frontiers of untapped knowledge on the planet – the fungal networks in the soil beneath us.

Credit: BBC

Fungi form an underground network of connections with plant roots, helping to recycle nutrients and to lock up planet-warming CO2 in the soil.

But little is known about this giant mesh of fungi and its role in fighting climate change.

It is part of what's popularly known as the Wood Wide Web. This is an underground network of plant roots and fungi that, among other things, allows trees to share nutrients.

And scientists say "underground conservation" has been long overlooked.
The initiative to map and preserve the Earth's underground fungal networks is led by the Society for the Protection of Underground Networks.

It is the start of an "underground climate movement" to protect "this ancient life support system," said Toby Kiers, professor of evolutionary biology at VU University in Amsterdam.

Local experts, dubbed "myconauts" after mycology, the study of fungi, will collect 10,000 samples to compile a global map of fungal hotspots.

And machine learning will be used to build up a picture of the function of fungal networks and their role as carbon sinks - something that absorbs more carbon-containing compounds - such as carbon dioxide from the atmosphere - than it releases.

Scientists say fungal networks are under threat due to agricultural expansion, the use of fertilisers and pesticides, deforestation and urbanisation.

Current estimates put the amount of carbon dioxide taken out of the air and locked up in the soil with the help of fungal networks at five billion tonnes - although it could be more than three times higher.

"If we lose this system, this is going to have really serious consequences for our ability to fight climate change," Prof Kiers told BBC News.

Fungi are "the invisible ecosystem engineers and their loss is totally undocumented", she added.

Soils are home to 25% of all species on Earth, yet current plans to conserve biodiversity hotspots above ground fail to protect over 50% of biodiversity below ground.

The total length of the fungal network in the top 10cm of soil is more than 450 quadrillion kilometres: around half the width of our galaxy.

ANSWERS TO PUZZLES

Picture this!

The space station travelling in front of the sun

Spot the fake!

"Scottish bird tracked to New York home" *It was London!*

Build THE Change

This week's challenge is part of the LEGO® Build the Change programme. It can be done at school or as homework, and parents can help upload photos of pupils' work to the online gallery.

Visit the gallery at https://bit.ly/btcgallery and feel free to use it as discussion point in class.

Build the Change is the LEGO Group's learning through play-based sustainability program, encouraging children to become engaged global citizens with voices that are heard.

This worksheet is available online every weekday at 6am from theday.co.uk/newsdetectives.
For any feedback or help please contact newsdetectives@theday.co.uk. Thank you.