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Build a better world

News Detectives

TODAY'S BIG STORY

Order up! The hamburger that grows in a lab

Scientists around the world are using cells to grow beef, chicken or tuna from scratch. Some say it could replace normal farming – and help save the planet.



Moo! There are over 1.5 billion cows in the world farmed for meat or milk.

On a farm in **The Netherlands**, a herd of cows roams the fields. But they are not normal farm animals. Every few months, a **vet** comes to take a sample. They make a small cut and take a piece of muscle. The cow gets stitches and **painkillers**,

then returns to **grazing**.

Meanwhile, the muscle is sent to a lab. It is stored with **nutrients**. Soon, the muscle grows into meat.

Scientists first grew meat in a lab nine years ago. Now, more than 70 companies do it. They make

chicken and beef, tuna and shrimp. One cat food company makes mouse meat.

Growing farm animals is bad for the planet. It produces up to 14.5% of the world's **greenhouse gas**.

Lab-grown meat could be the answer.

You decide: Should we grow our meat in laboratories?

YES!

It is a great idea. We will no longer need space to farm cows, sheep and pigs. We will be able to enjoy meat and help the planet!

NO!

Most people eat far too much meat. Instead of growing it in a lab, we should eat less. Then we can eat natural food and fight climate change.

KEY WORDS

The Netherlands: A small country sandwiched between Belgium and Germany in Western Europe.

Vet: Someone who gives

animals medical treatment.

Painkillers: A kind of medication that reduces pain.

Grazing: Eating grass. Cows and sheep are grazing animals.

Nutrients: Substances needed for healthy growth, development, and functioning.

Greenhouse gas: Gases in the Earth's atmosphere that trap heat.

Detective zone

Picture puzzle



Can you work out what this is?

- ☐ An abstract painting
- ☐ A science experiment
- ☐ A rare sea creature

Spot the fake!

Only one of these three news stories is true. Which one?

- ☐ “Over 5,000 Emperor penguins land on Australian beach”
- ☐ “Company launches ‘warmer’ ice cream to cut CO2”
- ☐ “Car manufacturer designs tyres made of old shoes”

Build THE Change

What we eat has a big impact on the climate. For this activity, you will come up with a recipe that helps the environment.

Step 1: Choose your ingredients. What will you use to make your recipe sustainable?

Step 2: Now you can get creative! Make a model of your meal using everyday objects or LEGO bricks.

Did you know...?

- Cows and other farm animals produce 14% of all man-made climate emission.
- The average person in the UK drinks 70l of milk every year.

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.

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Teacher notes

TODAY'S BIG STORY BACKGROUND

The New Secret Chicken Recipe? Animal Cells.

Brown cows roam the meadows of a farm in the Netherlands. They are Limousins, a breed known for the quality of its meat. Every few months, a veterinarian makes a tiny cut in a cow's flank, removes a sample of muscle, and stitches the cow back up. A dab of painkiller on the skin means this doesn't hurt much.

At a nearby lab, scientists put the samples into steel containers with a nutrient broth. The cells grow and multiply. This process creates new muscle. And from that, something like hamburger meat is produced. It's a lot like the stuff you buy at a supermarket.

By 2030, meat grown in a lab could account for 0.5% of the world's meat supply, according to a recent report. One day, it might even replace factory farming, in which many cows are raised in small spaces. This could solve one of the big problems of our time: how to feed a growing global population without increasing greenhouse-gas emissions.

Every year, raising livestock for food causes up to 14.5% of the planet's greenhouse-gas emissions. That system is unsustainable, biologist Johanna Melke says. She works for a Dutch company called Mosa Meat. It grows meat in a lab. "People want to eat meat," she says. "This is how we solve the problem."

Nine years ago, Mosa cofounder Mark Post helped introduce the first lab-grown hamburger. Today, more than 70 companies are making lab-grown meats that include beef, chicken, tuna, shrimp, and even mouse (for cat treats). According to the World Resources Institute, global demand for meat will nearly double by 2050. Lab-grown meat could soon be a \$25 billion industry.



Credit: Amy Gunia for TIME

Post says half a gram of cow muscle could possibly be used to make up to 4.4 billion pounds of beef. That's more beef than Mexico consumes in a year. Growing meat could be as effective as solar and wind energy are at fighting climate change, he says.

"I can't give up meat, and most people are like me," Post says. "So I wanted to make the choice for those people easier: to be able to keep on eating meat without all the negative [consequences]."

So far, no company has figured out how to produce large amounts of lab-grown meat and bring down costs. Three chicken nuggets by the company Eat Just cost about \$17 at a restaurant in Singapore.

Cattle ranchers also stand in the way. The United States Cattlemen's Association asked the government to set rules. Ranchers want the terms beef and meat used only for products that come from animals raised in a traditional manner. That could

make it harder to sell meat from a lab. "The terms you can use make a critical difference," says market researcher Michael Dent. "Who's going to buy something called 'lab-grown cell-protein isolates'?"

Still, Mosa says its product can win people over, whatever it's called. "It was so intense – a rich, beefy, meaty flavour," says scientist Laura Jackisch, who gave up eating animal products years ago. "I started craving steak again."

Some of the fish we eat is caught faster than it can be replenished. Overfishing can wipe out whole species.

Avant Meats makes fish meat in a lab. This includes fish maw, a part of the fish that's popular in China. Lab-grown maw feels like real fish before it's cooked, chef Eddy Leung says. "But when you eat it, it doesn't yet have the kind of stickiness the real ones do."

ANSWERS TO PUZZLES

Picture this!

A rare sea creature. In fact, it is a sea gooseberry floating in front of a pier.

Spot the fake!

"Company launches 'warmer' ice cream to cut CO2"



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.