# Food from the lab

**LEVEL**
Advanced

**NUMBER**
C1_3054S_EN
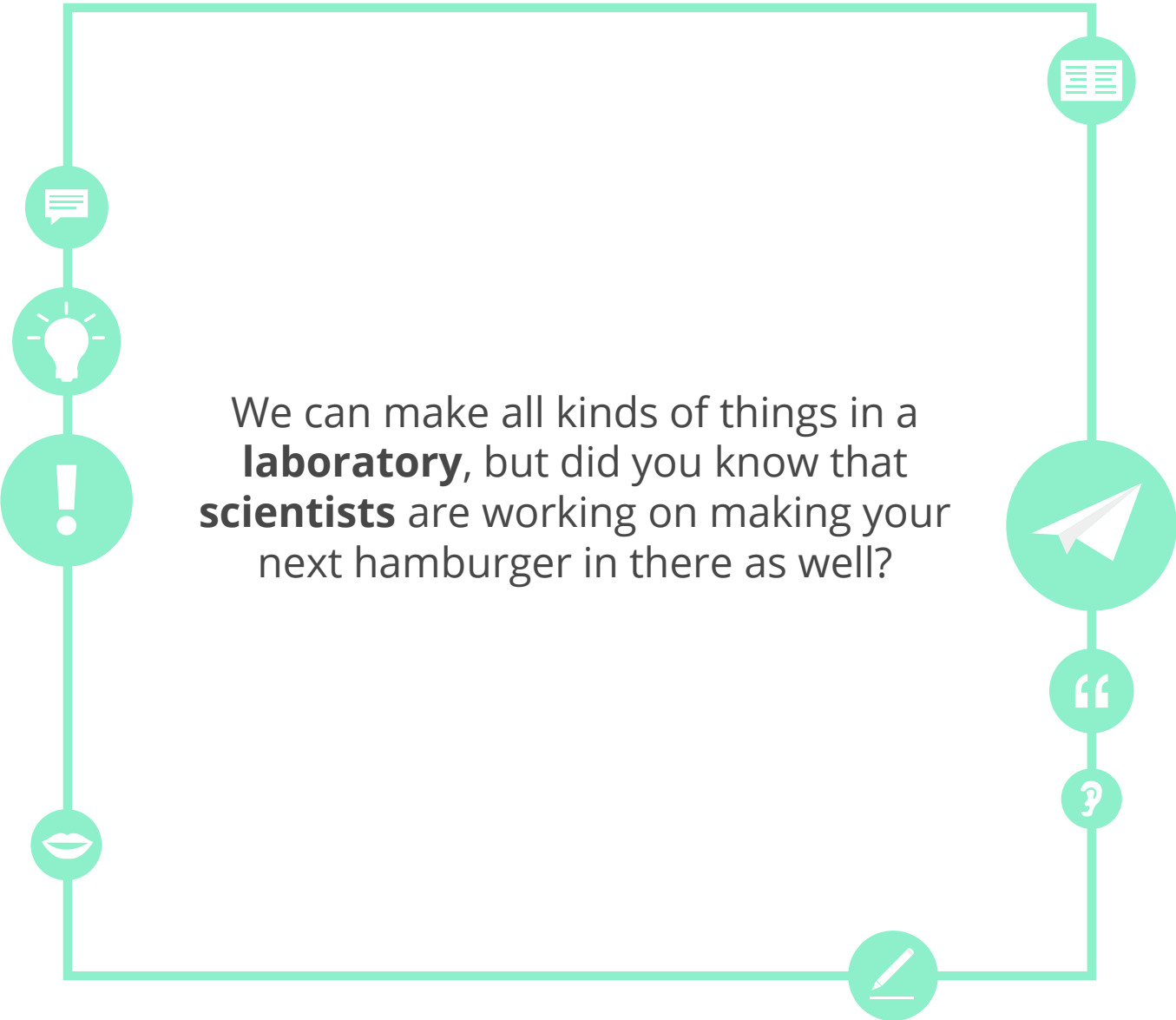
**LANGUAGE**
English

# Goals

- Can read, listen to and understand a complex text about food technologies

- Can present my own views on the idea of 'lab meat' and explain why overpopulation can be a problem.

We can make all kinds of things in a **laboratory**, but did you know that **scientists** are working on making your next hamburger in there as well?

lingoda

# What did you eat?

What did you eat yesterday? Was that a typical day for you?



| | |
|---|---|
| breakfast | lunch |
| dinner | snacks |

# How much do you know about where your food comes from? Do you know how it is treated?

local farms

pesticides

big agriculture

# Population



What's the population of your country? Is it increasing or decreasing?

What's the population of the world?

lingoda

**While the global population is rising, many developed countries are seeing their population fall. What difficulties does this cause?**

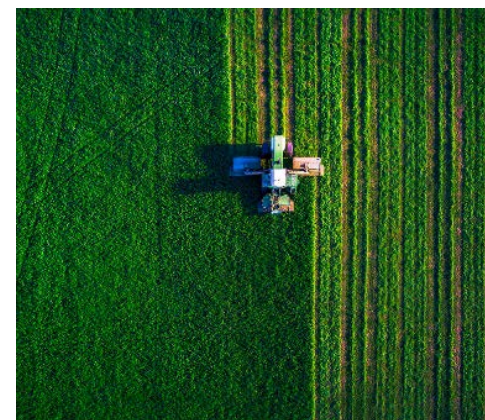lingoda

# Food from the lab

The human population is growing at an **unprecedented** rate; we are adding a billion people to Earth every twelve to fifteen years, and the world's population stood at seven and a half billion in 2017. There are many problems with the overpopulation of the Earth, mainly centred upon the fact that we are using up resources at **unsustainable** levels; we cannot feed everyone now, let alone in the future, when it is estimated that by the year 2050 we will need 70% more food than we do now.

# Food from the lab

The **burning question** is where is that food going to come from? Over the past fifty years we have seen huge improvements in **crop yields**, particularly of **staple** foods like cereals. However, little attention has been paid to the quality of the food, leaving many, especially in poorer societies, **deficient** of nutrients.

# Food from the lab

On top of these issues, clearing land for agriculture is causing enormous problems connected to deforestation, which is having a devastating effect on our environment. We need a better answer, and that answer may lie in **synthetically produced** food.

**Frankenmeat**, I hear you say? Yes, indeed. Let's look first at how food, or specifically meat and fish, can be produced in a lab. Very simply, the first stage is to collect cells from an animal or fish; these cells can be taken harmlessly from living animals, or from those which have died of natural causes. The cells are then treated with a protein which stimulates **tissue** growth, and grown on an **edible scaffold**, which creates the shape of the meat. Theoretically, no more cells need to be harvested from living animals, as the lab cells can go on to produce all the meat we need.

**Vocabulary: which do you recognise and which are new? Give a synonym or definition of 6 words or less for each card.**

unprecedented

unsustainable

burning question

staple

deficient

(cell) tissue

# Vocabulary

Look at these words and phrases from the text. Do you know what they mean? Can you remember what they were referring to?

*Frankenmeat*

synthetically produced

crop yields

an edible scaffold

**Do you think vegetarians would eat lab meat? Why or why not?**

# Tell your teacher

**Answer these questions about some of the issues raised in the text.**

**1** One of the effects of overpopulation is that we need more food. What other effects does overpopulation have?

**2** Do you think there are any solutions other than lab meat to solve the problem of feeding a growing population?

**3** Have you noticed a decline in food quality in your country?

# Get ready to listen

The next few slides will focus on training your listening comprehension

# While you're listening...

**As you listen to your teacher read, answer the following questions.**

1. What does the text say is a slippery concept? What reason does it give for this?

2. Which two environmental benefits of lab-grown meat are mentioned?

3. Why may lab-grown meat possibly be healthier than traditional meat?

4. What have Richard Branson and Bill Gates recently done? What does the text say this means?

# What were each of these new words in the text referring to? Can you put each one in another example sentence?

revulsion

slippery

multitude

livestock

pesticide

repulsive

lingoda

What is your initial reaction to the idea of lab meat? How willing would you be to try it?

# Read the dialogue

**Read through the dialogue between two friends with your teacher.**

> Ugh! The very idea of *Frankenmeat* is revolting! I try hard to only eat natural products and lab meat is definitely not normal.

> Oh come on, you eat bread, cheese, chocolate. Do you think they're taken straight from the ground? And if you're so conscious about the natural environment, think about how good it would be to stop industrial farming.

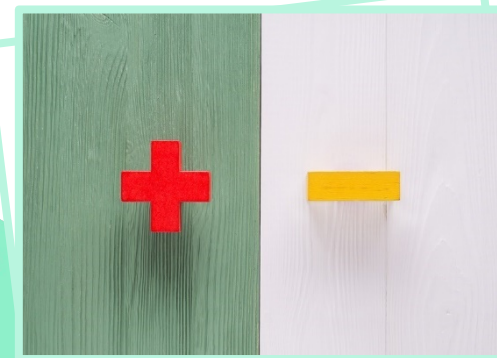> Well I suppose that's true. Maybe it'd be better to stop eating meat at all.

> I think that's an unrealistic expectation for most people. As long as meat exists we're going to crave it. I'd definitely be up for trying some lab meat.

# Pros and cons

**Make a list of pros and cons of lab meat from your perspective, thinking about the different points the text makes and the conversation on the previous slide. Can you think of any negative sides that haven't been mentioned, or any additional positives?**

Using the ideas from the dialogue page and your pro/con list to help you, have a similar discussion about lab-grown meat with your teacher. Decide which side you're on!

Lab meat is gross!

Lab meat sounds great!

Scientists are experimenting with creating many other foods inside the lab, aside from meat. Would it be more appealing to you to eat another type of lab-produced food? Why or why not?

**The future of food**

Twenty years ago, the idea of meat grown in a lab would have been considered very far-fetched. What do you think we will be eating another twenty years from now? Will lab-grown meat be normal then? Will we be eating liquid meals, or entire meals concentrated into a tiny tablet? What do you think?

# Reflect on the lesson

Take a moment to review any new **vocabulary**, **phrases**, **language structures** or **grammar points** you have come across for the first time in this lesson.

Review them with your teacher one more time to make sure you don't forget!
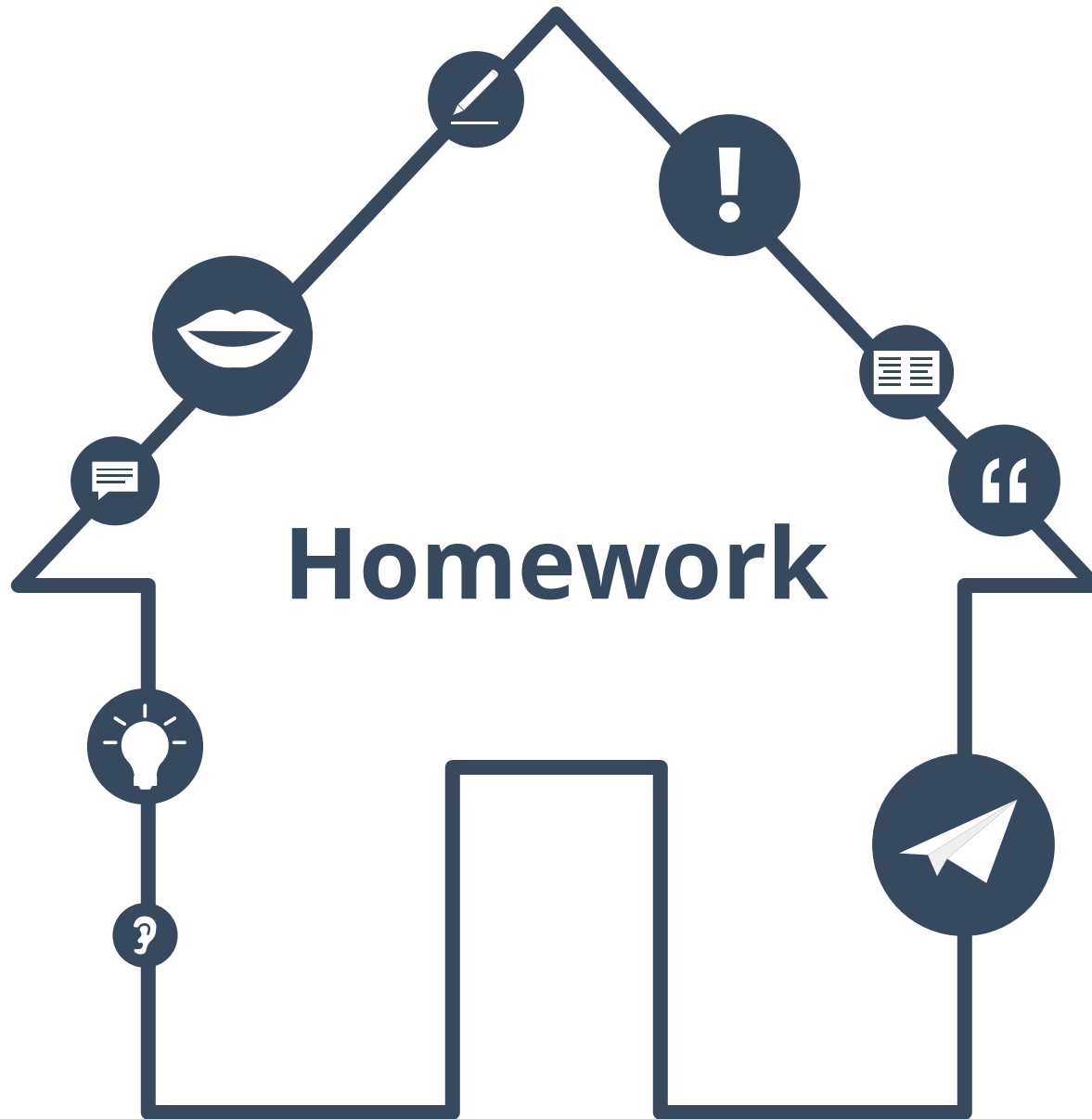
The initial reaction to meat grown in a laboratory is usually **revulsion**, with people believing that lab-grown meat is unnatural. Naturalness is a **slippery** concept however, as almost all of the food we eat is processed to a greater or lesser degree, and it can hardly be argued that intensive farming with all of its chemicals is creating natural food.

The many benefits to lab-grown meat may change our minds about its **repulsiveness**. First are the **multitude** of benefits for the environment; much less land will be needed for farming, meaning deforestation and intensive farming may become a thing of the past, and huge amounts of water will be saved if we do not need it to maintain **livestock**. Lab-grown meat may also be healthier than traditional meat, as exposure to chemicals such as **pesticides** will be reduced, and scientists say that omega-3 fatty acid can be added to lab-grown meat as a health benefit.

With famous figures such as Bill Gates and Richard Branson recently making large investments in lab meat, there can be little doubt that it will end up on our plates eventually.

**Homework**

Population growth at the moment is _____, and with that growth come problems related to _____. To solve the problem of food production, scientists have begun to create food in _____. Reviled by some as _____, the food could in fact be healthier and better for the environment than the food we are eating at the moment. Harvesting _____ and then cultivating it on an edible _____ is a way of producing meat without harming animals.

**scaffold**

**unprecedented**

**laboratories**

**overpopulation**

**Frankenmeat**

## What's your opinion?

Using the vocabulary on the previous page, and any other words you can remember from the lesson, write a short text on how you feel about lab-produced meat.

important vocabulary

overpopulation

scaffold

# Homework answer key

**Exercise p. 27**

unprecedented, overpopulation, laboratories, Frankenmeat, scaffold

# About this material

This material is provided by

**lingoda**

**lingoda** Who are we?

Why learn English online?

What kinds of English classes do we offer?

Who are our English teachers?

How do our English certificates work?

We also have a language blog!