ENGLISH

Chapter 4
Session B

5th
SECONDARY

Welcome to the Future!

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HELICOMOTIVATION

A scientific report

1 **Work in pairs. How do you think these things will be done in the future?**

a farming and producing food

b communicating with each other

c diagnosing and treating illnesses

INNOVATIONS THAT WILL ROCK OUR WORLD

Subskill: Predicting content

Use the title, photos and any general comprehension questions to predict the content of a text. Then read to check your predictions.

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2 **Look at the report title and photos. Read sentences 1–5. Circle the option you think is correct.**

1 By the middle of this century, the world population will have reached ...

a just under 10 billion people.

b almost 15 billion.

2 ... will check that indoor crops are getting enough light and food to grow.

a Farmers **b** Computers

3 Indoor farming is likely to be ... to the environment than traditional farming.

a more harmful **b** less harmful

4 The writer ... we'll be able to keep in touch with our friends without a physical device.

a isn't certain whether **b** is sure that

5 Microdevices will be able to treat patients ... of humans.

a without the help **b** with the help

3 11 **Read and listen to the report. Check your predictions in exercise 2 and find evidence to support them.**

INNOVATIONS THAT WILL ROCK OUR WORLD

In this week's report, we're going to take a look at some rapidly evolving technologies and consider how they might change our lives forever.

High-rise farming and food production

The United Nations predicts that the world population will have reached 9.8 billion by 2050, but our farmland will probably not be able to support the necessary food production. A solution may be to grow crops and raise animals on top of skyscrapers or, alternatively, develop indoor farming using artificial light. The crops will be grown in vertical containers of water rather than soil, and then fertilized by the waste products from animals.

Computers will control the process automatically, making sure the plants get the right balance of food and light. This means we'll enjoy a variety of food all year round without relying on the weather or damaging the land further. In the same way, creating meat and seafood by growing cells from the muscle of an animal in the laboratory is a fast-approaching reality. This lab-grown or 'clean' meat could mean that we no longer need to raise animals on farms. Both advances will help to reduce the impact farming has on the environment.

Communication via wearable screens

You're meeting a friend in town in 15 minutes, but you've missed the bus. The next bus doesn't leave for ten minutes. You're going to be late again. In 2040, you probably won't need to reach for your smartphone: you'll contact your friend through a screen projected onto your arm. What makes us think that? There has been a sharp rise in wearable phones. They're an improvement on smartwatches because you can take calls, swipe through your favorite apps and tap to select one from your wrist. They don't only have voice recognition, but also gesture recognition – you can wave your finger to scroll up or down. And one day, perhaps we'll be able to replace devices with small implants under our skin.

Microdevice treatment

Scientists in Switzerland have created a tiny device which looks something like an origami bird. This mind-blowing bird is just a few micrometers long, so it can only be seen under a microscope. Through the use of **magnets**, it can be programed to move its wings, bend its neck, move its head, hover and turn. How will that improve our lives? Well, in a not-too-distant future, perhaps doctors will be programing these birds to perform medical tasks in the body. For example, one of them could fly through our **blood vessels** killing cancer cells.

5 **Complete the sentences with the correct form of some of the words in exercise 4.**

1 We've used a magnet to get the key out from behind the cupboard.

2 My grandpa's tomatoes are fertilized with organic waste from our kitchen.

3 Red blood cells carry oxygen around our bodies.

4 Our neighbors have always raised chickens in their yard.

5 Would you welcome a cell phone implant behind your ear or in your arm?

6 Read the report again and answer the questions.

1 In what ways will indoor farming have less of an impact on the environment?

Crops will grow vertically (so they will need less space); we'll be reusing the waste from animals to fertilize the crops; the creation of meat and seafood from cells in laboratories will mean we won't need to exploit the land.

2 How will scientists create meat in the

by growing cells from the muscle of an animal

3 What are the main differences between the smartphones we use now and the wearable screens we may use in the future?

You can do everything on your wrist or there's no physical device – it's a projected screen controlled by a skin implant and it recognizes gestures.

4 Why are the robot birds such a major breakthrough?

Because they're small enough that they might be able to travel through blood vessels.

CRITICAL THINKING — SUPER SKILLS

1 **Remember** Write one sentence to describe each of the three advances in the report.

2 **Analyze** Which are the most useful? Why?

3 **Create** Design your own wearable screen. What functions does it have? Do you think wearable screens will have a positive or negative impact on our lives?

4 **Word work** **Match the definitions to the words in bold in the report.**

1 pieces of metal that can stick to other metal objects _____

2 the smallest parts of a living structure that can operate as independent units _____

3 objects that doctors put into someone's body during a medical operation _____

4 given a natural or chemical substance in order to grow _____

5 tubes inside humans through which blood flows _____

6 take care of an animal, sometimes when farming raise

HOMEWORK
from 1 to 5