Technology Around Us:
Information Technology of the Future

National Curriculum

Recognise common uses of information technology beyond school.

Aim

To begin to think about how information technology may develop in the future.

Lesson Duration

It is estimated that this lesson will take approximately 60 minutes.

60 mins

Success Criteria

I know about new ideas in information technology.

I can give some examples of how information technology may change in the future.

I can use my knowledge of information technology to design a digital device of the future.

Key Vocabulary:

Artificial intelligence (AI), virtual reality (VR), augmented reality (AR).

Resources

Lesson Pack

coloured pencils or felt tips

Preparation

Knowledge Organiser – one per child (This contains all the key knowledge for the unit and will be used during every lesson.)

Technology of the Future Picture Cards - one set per group.

Differentiated Design a School SmartAssistant Activity Sheets – one per child, as required.

In order to gather valuable data about how effective this unit has been and how much your children have understood the topic, we recommend completing the KWL Grid at the end of this lesson.

Prior Learning: Children should be familiar with current information technology and be able to talk about the digital devices around them. They should know that information technology helps to make our lives easier. In Lesson 5, children will have learnt about how digital devices have changed and developed over time.

In this lesson, children will be creating their own designs and it would be helpful if they have had some experience of communicating their ideas through drawings and annotations.

Learning Sequence

Remember It: Use the corresponding slides on the Lesson Presentation to remind children about the significant computer scientists of the past. Can they remember the names of these key personalities? Use the quiz to test their knowledge of key moments in computer development.

Revise how digital devices have changed over time by sorting the words and phrases into the table depending on whether they best describe computers today or in the past. Click on each word or phrase to sort it into the correct place in the table.

What's Happening in IT Now?: Use the corresponding slides on the Lesson Presentation to introduce children to three current trends in information technology: augmented reality, virtual reality and artificial intelligence.

When exploring artificial intelligence, ensure that children understand that this refers to machines being able to learn and adapt their behaviour. Ask the question: What is the difference between humans and computers when they have to learn something new? Some children may think that computers are cleverer than humans and although this is true for some tasks, children need to realise that humans have the advantage of being able to learn from their mistakes whereas computers can only carry out the task they are programmed to do. Ensure that children understand that creating machines that can learn as we do is very difficult to achieve.

IT in the Future: Divide children into small groups and provide them with the four Technology of the Future Picture Cards. Ask children to talk in their groups about the technology they can see in each picture. What do they think the technology is? How might it work? How would it help us in the future? Use the corresponding slides on the Lesson Presentation to look at each technology in more detail and share ideas together. Which technology is their favourite? When exploring the idea of smart glasses, ask the children: How do you think you will receive and send information in the future?

School Smart Assistant: Use the corresponding slides on the **Lesson Presentation** to introduce children to the design challenge in this lesson. The children are encouraged to reflect on what items they may bring to school with them today and then think about how this might change in the future as information technology develops. The children are asked to use their knowledge of information technology and their imagination to design a School Smart Assistant of the future. Ask children: **What sort of digital device might help us learn in the future?**

This task has been deliberately left open ended to allow children to be as creative as possible with their ideas.

Children draw a picture to show their idea for a School Smart Assistant.

Children draw a picture to show their idea for a School Smart Assistant and label the key features.

Children draw a picture to show their idea for a School Smart Assistant and label the key features. They describe what the Smart Assistant does and how it works.

Imagine It: Invite children to share their design ideas with their peers. This could be done as a show and tell with the class, sharing in small groups or even just as a discussion with a partner. Encourage children to talk about their designs and explain the different features to their friends.

Finish the lesson by asking children what technology they would love to see in the future. Encourage them to be as creative as they can be about what technology may look like in 2050.

Exploreit

Tryit: Download the _____. Children can then explore augmented reality for themselves as they investigate 3D models superimposed onto the real world. They can turn and resize each model and take picture of them in their classroom. Choose from going back in time and meeting dinosaurs or getting up close and personal with some giant minibeasts. There are lots of different packs for you to choose and they are a great way to use technology in a cross curricular way.

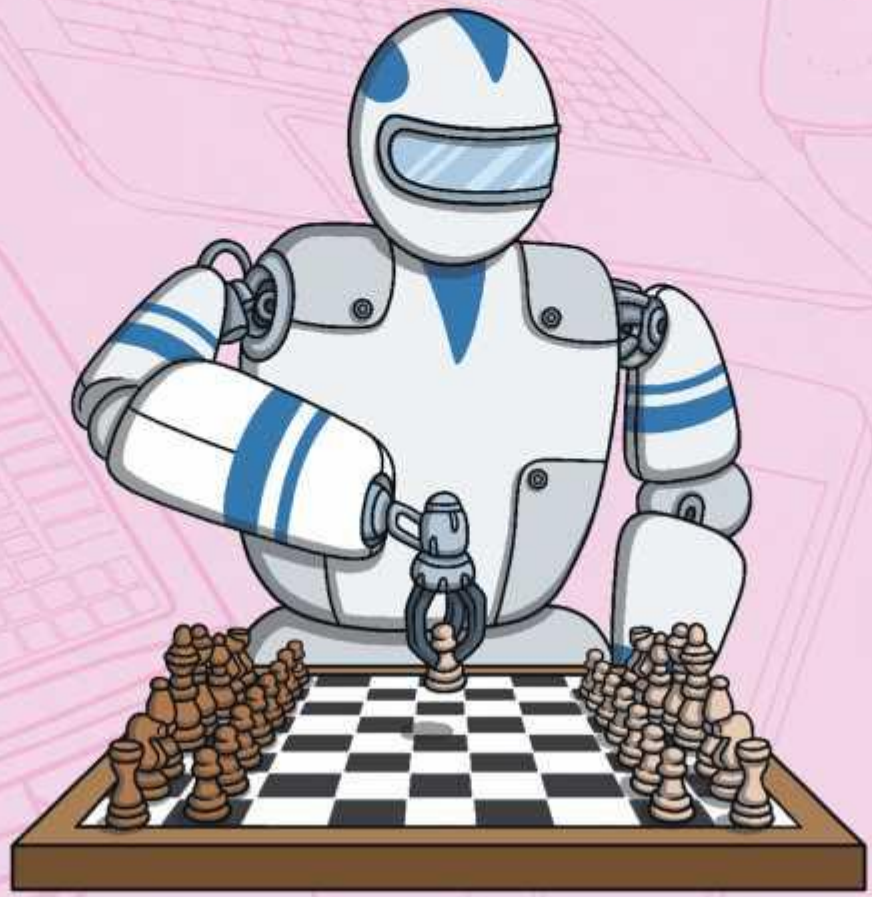
Drawit: Encourage imaginative skills by challenging children to think of how different sorts of technology might change in the future. What will transport look like? What sort of houses will we live in? Will we have robotic pets? Provide children with drawing materials and let their imaginations run wild.

Assessment Notes:

Computing

Technology Around Us

Information Technology of the Future



Meet Quizby!

Can you spot me in the Lesson Presentation?

The questions that appear will help you to think about the key learning throughout the lesson.

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Success Criteria

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Remember It

These people have all had an important part to play in the story of information technology.

Can you remember their names? Do you remember what they are famous for? Talk to your partner about them.

Ada Lovelace

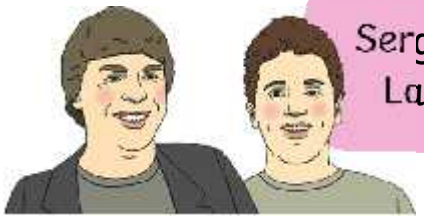
Alan Turing

Douglas Engelbart

Bill Gates

Tim Berners-Lee

Steve Jobs



Sergey Brin & Larry Page

Click on the Start button to take a quiz and test your knowledge. Good luck!

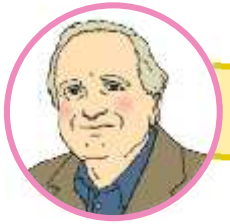
Start

Remember It

Question 1:

Who invented the computer mouse?

Steve Jobs ✗



Douglas Engelbart ✓

Ada Lovelace ✗

Next

Remember It

Question 2:

Who invented the World Wide Web?

Bill Gates ✗

Alan Turing ✗

Sir Tim Berners-Lee ✓

Next

Remember It

Question 3:

Who wrote the first computer algorithm?

Ada Lovelace ✓

Alan Turing ✗

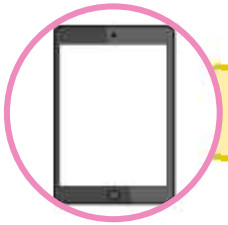
Larry Page ✗

Next

Remember It

Question 4:

What important software company did Bill Gates start?



Apple ✗

Microsoft ✓

Google ✗

Remember It

Compare computers today with computers in the past. Look at each describing word or phrase. Decide whether it best describes computers in the past or computers today.

Computers in the Past	Computers Today

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What's Happening in IT Now?

Information technology is changing all the time. There are lots of exciting developments happening in IT right now.

Do you recognise any of these new technologies? Click on each one to find out more about it.

augmented reality (AR)

virtual reality (VR)

artificial intelligence (AI)

Next section

What's Happening in IT Now?

What Is Augmented Reality?

Augmented reality is also known as AR.

Augmented reality is when technology is used to combine the real world with computer generated images and models.

Next

What's Happening in IT Now?

Where Can We See Augmented Reality?

Augmented reality is used in films to create special effects. It makes characters or places look more exciting.

You can even try AR yourself. Download an AR app onto your tablet or smartphone. Imagine being able to bring a giant 3D dinosaur to life in your back garden or hold the Earth in the palm of your hand!

Back

What's Happening in IT Now?

What Is Virtual Reality?

Virtual reality is often called VR.

Virtual reality is a way of using technology to make someone feel like they are somewhere else. It creates images, sounds and even sensations.

Think About It: VR can take you to different places around the world or even into imaginary worlds. If you could use VR to transport you to a different place, where would you choose to go?

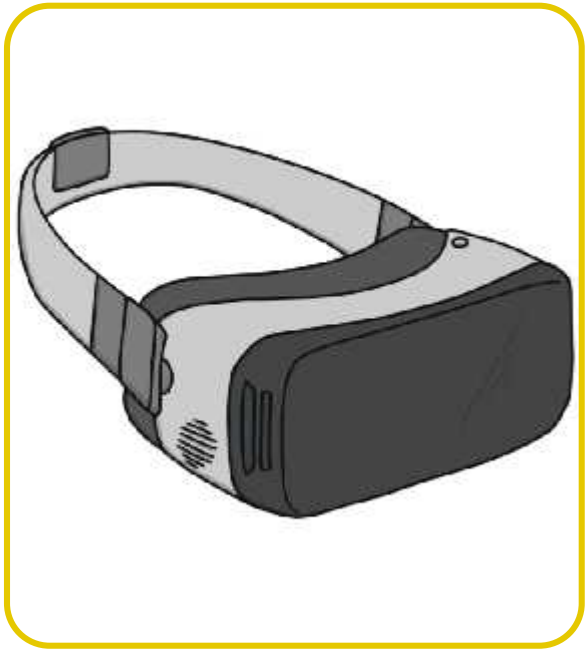
Next

What's Happening in IT Now?

How Does Virtual Reality Work?

To use VR you need to wear a special VR headset. Some people use hand controllers with built in sensors to interact with the virtual world.

VR can be used to play games and is lots of fun. It can also be used to train people to do difficult or dangerous jobs. Pilots use VR to practise landing planes. Can you think of someone else who might use VR to train for their job?



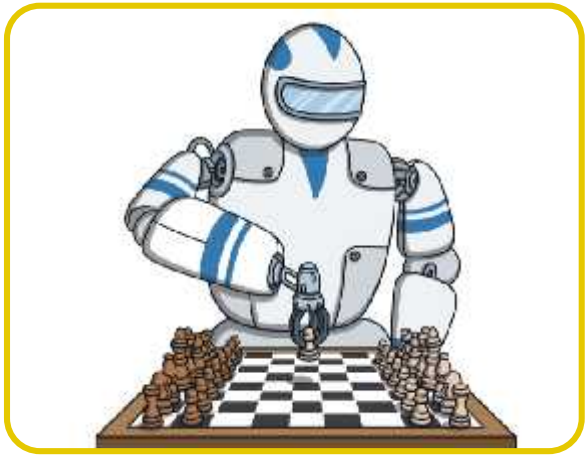
Back

What's Happening in IT Now?

What Is Artificial Intelligence?

Artificial intelligence is also known as AI.

Artificial intelligence is all about trying to make computers think and learn like humans do. It helps computers carry out human-like tasks.



Next

X

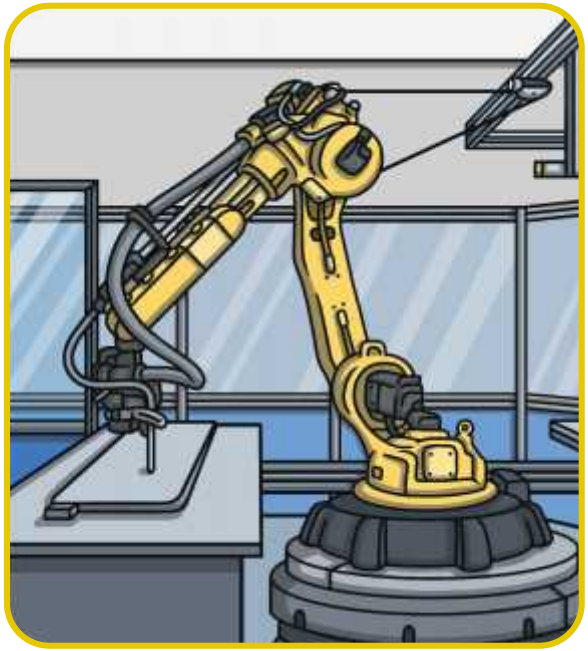
What is the difference between humans and computers when they have to learn something new?

What's Happening in IT Now?

Why Is Artificial Intelligence Useful?

Creating machines with artificial intelligence would make them very useful. They could do lots of jobs to help us.

AI is being used to create smart robots. There are robot vacuum cleaners that can avoid bumping into things. There are smart machines that work on assembly lines, helping to build cars.



Back

IT in the Future

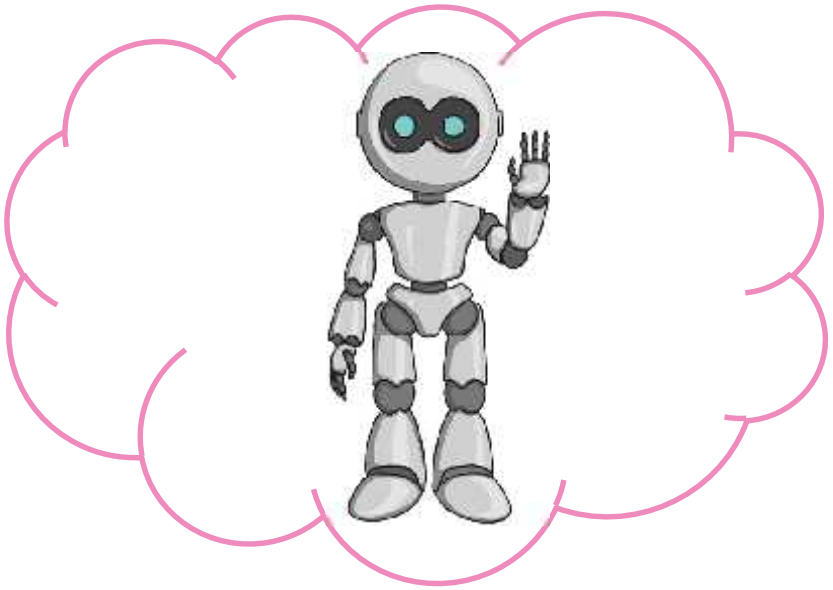
Laila, Dan, Amir and Nia have been talking about what information technology might look like in 2050.

Have a look at the Technology of the Future Picture Cards on your table to see some of their ideas. Can you guess what new technology they are thinking about? How might it work? How would it help us in the future?

Click on each child to find out more.

Next section

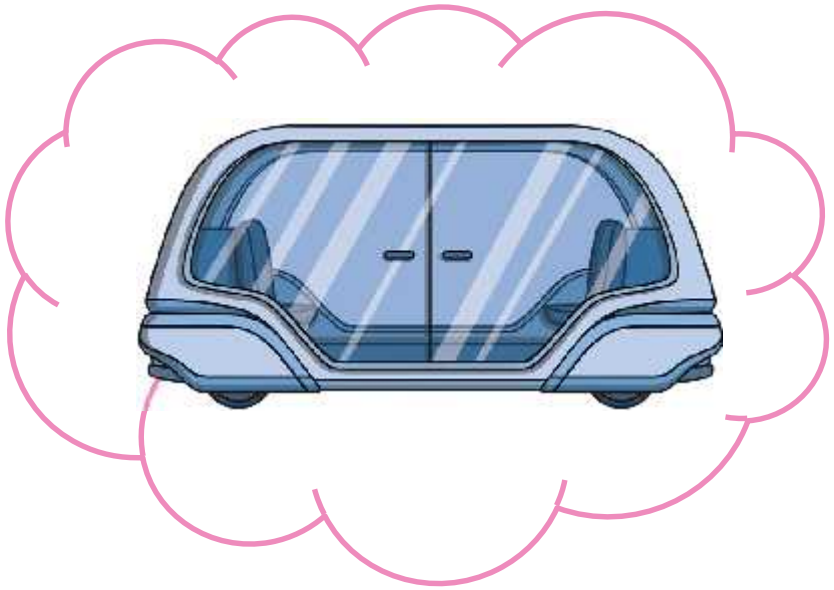
IT in the Future



If you had your own personal robot, what jobs would you like it to help you with?

Back

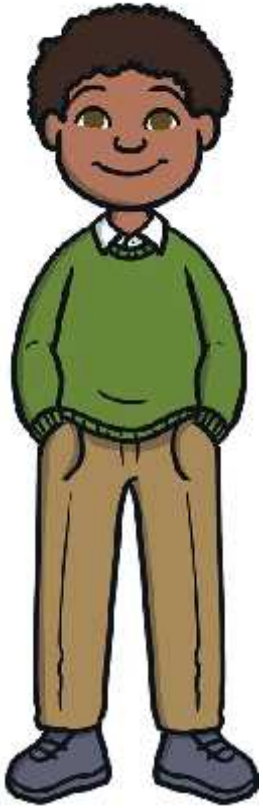
IT in the Future

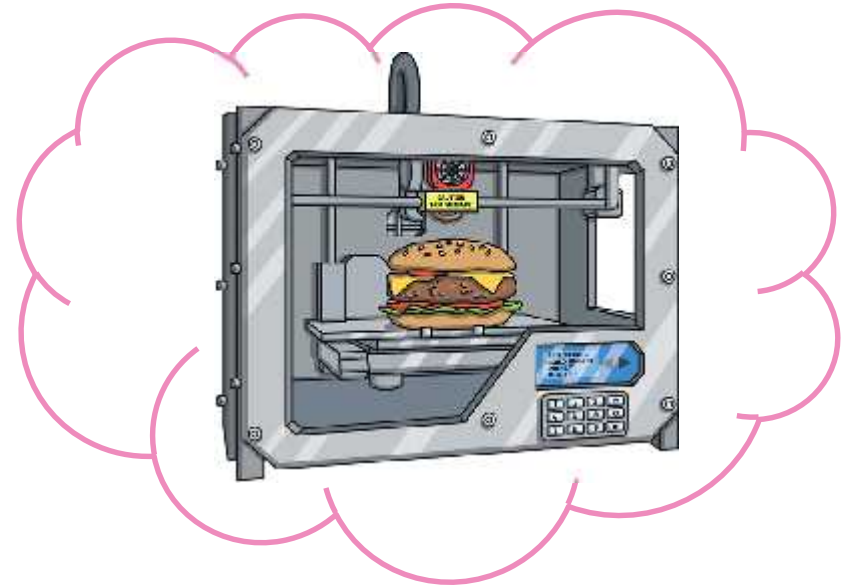


What are the good points and the bad points about driverless cars?

Back

IT in the Future

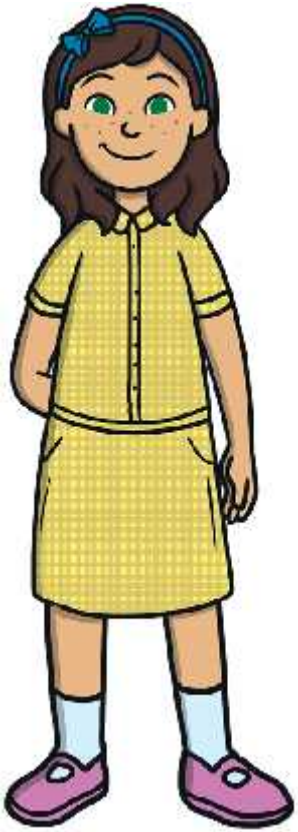




We already have 3D printers. Do you think that one day you will have a food printer in your home?

Back

IT in the Future



Smart glasses could have special screens to show you information as you move around.

Back

X

What is the difference between humans and computers when they have to learn something new?

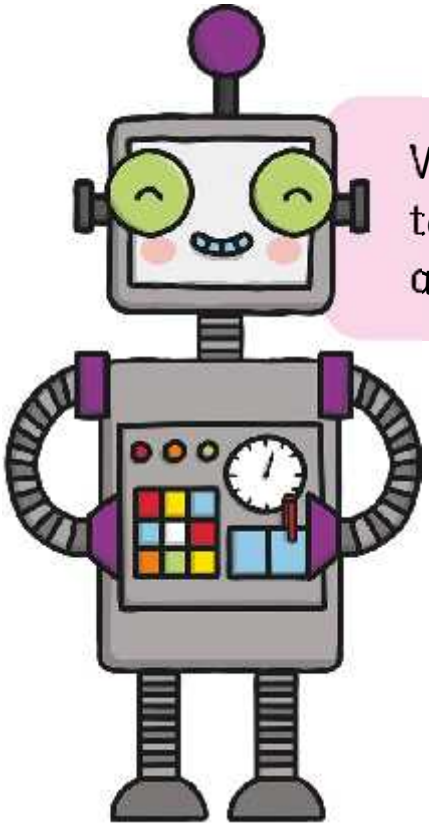
School Smart Assistant

Click on the school bag to have a look at some of the things you might use in school today?

Talk to Your Partner: How do these things help you in school?

School Smart Assistant

What might school be like in the year 2050?
How will things have changed?



Will your teacher be a robot?

Will you all wear VR headsets and learn in a virtual world?

School Smart Assistant

In schools in the future will you need all of the things you use in school today?

Will you still write in books and use pens and pencils?

What will computers look like?

How will you find information?

Will there still be teachers?

X

What sort of digital device might help us learn in the future?

School Smart Assistant

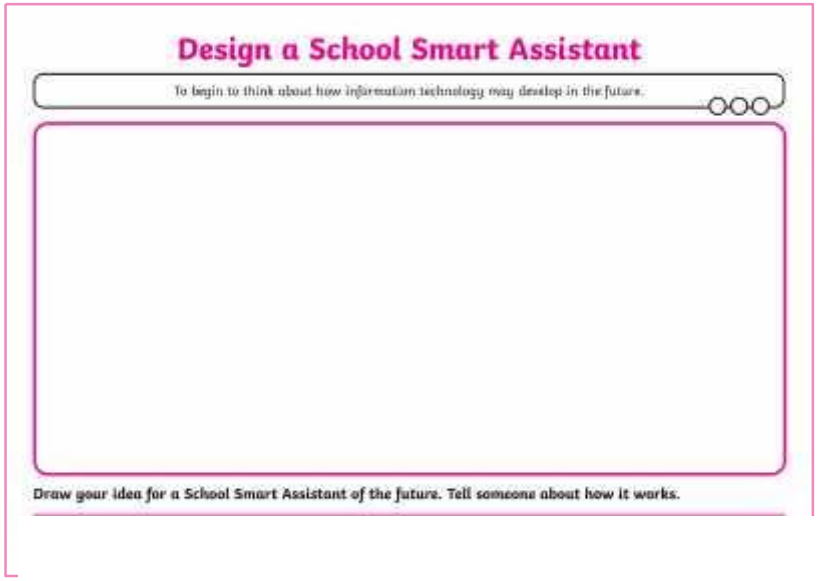
Think about what you have learnt about information technology so far. How have digital devices changed? How do they make our lives easier?

Task: Can you design a new digital device of the future called the School Smart Assistant?

Your School Smart Assistant might be a robot that helps the teacher.

It could be a digital pencil case with built in computer and helpful apps.

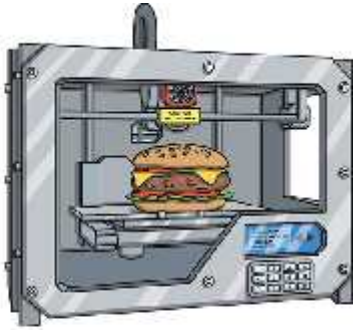
Or what about a futuristic desk that has touch screens, built in headphones and your own printer?



Imagine It

Flying cars, watches with hologram displays, robots to do your shopping...

Nobody really knows what information technology will look like in the future. It will be very exciting to find out.



Talk About: What other sorts of information technology might there be in the future?

Aim

- To begin to think about how information technology may develop in the future.

Success Criteria

- I know about new ideas in information technology.
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- I can use my knowledge of information technology to design a digital device of the future.

06:50

Design a School Smart Assistant

To begin to think about how information technology may develop in the future.

Draw your idea for a School Smart Assistant of the future. Tell someone about how it works.

Design a School Smart Assistant

To begin to think about how information technology may work in the future.

Draw your idea for a School Smart Assistant of the future.
Can you label the important features of your design?

Design a School Smart Assistant

To begin to think about how information technology may work in the future.

What does your School Smart Assistant do?

How does your School Smart Assistant work?

Draw your idea for a School Smart Assistant of the future.
Can you label the important features of your design?

Design a School Smart Assistant

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Technology of the Future

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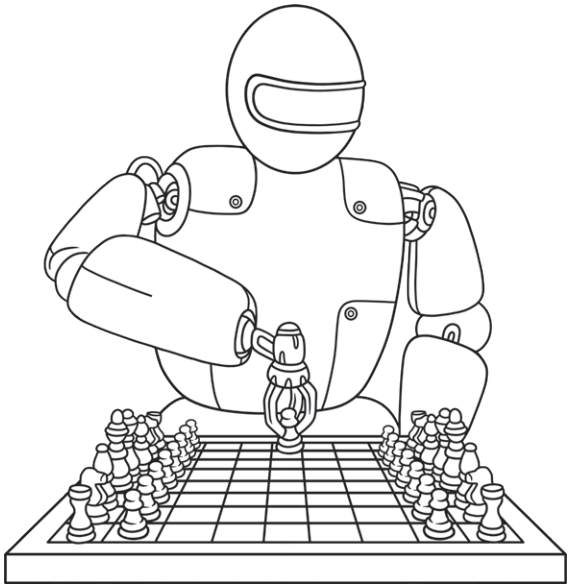
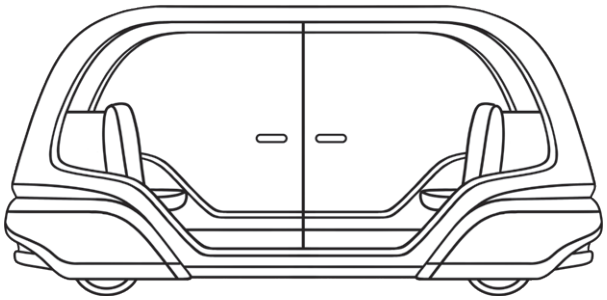


What is this? How might it help us in the future?



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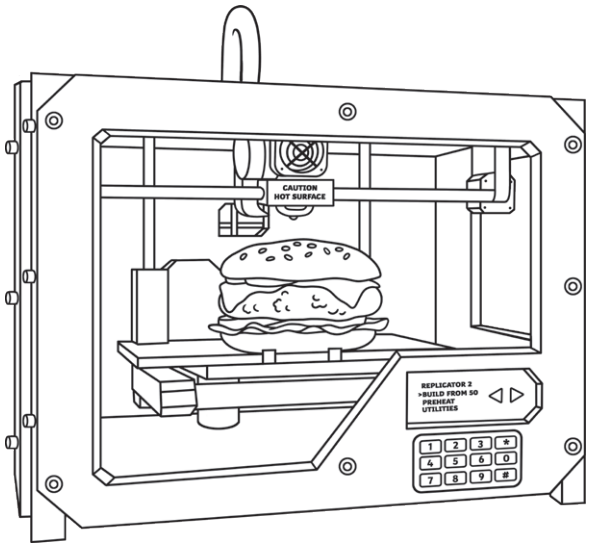

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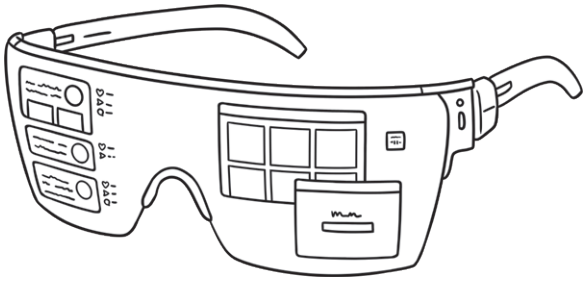

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Technology of the Future

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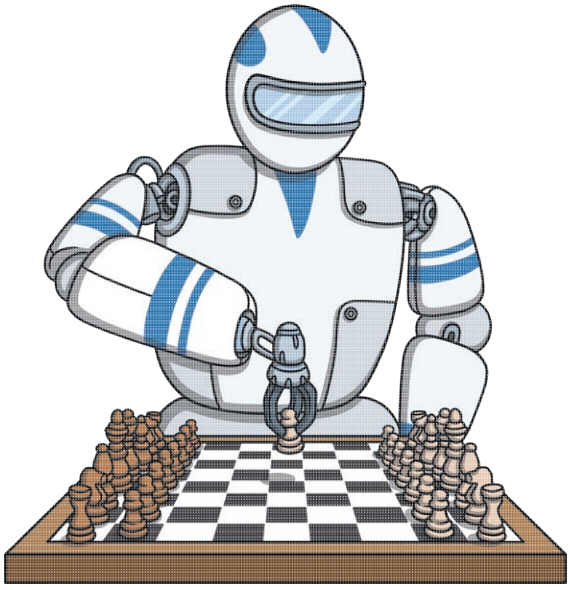

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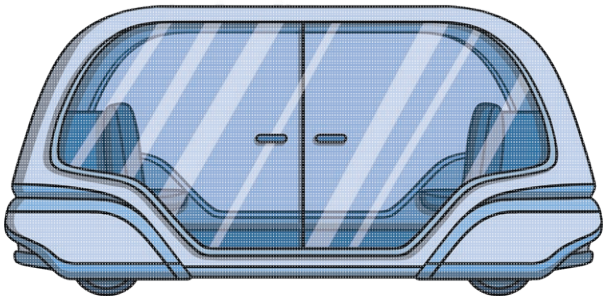

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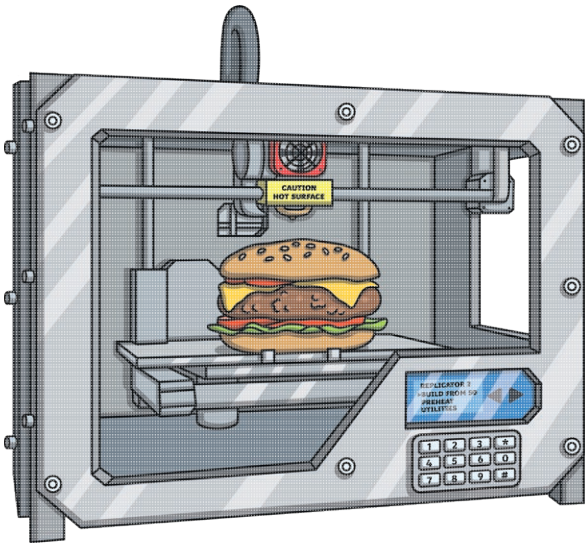

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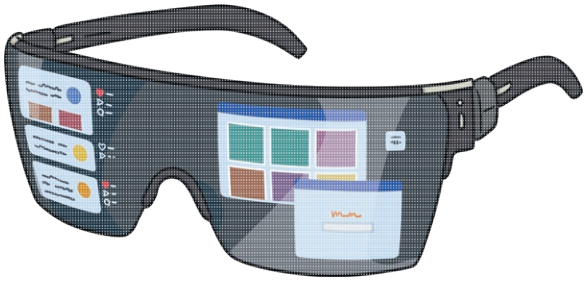

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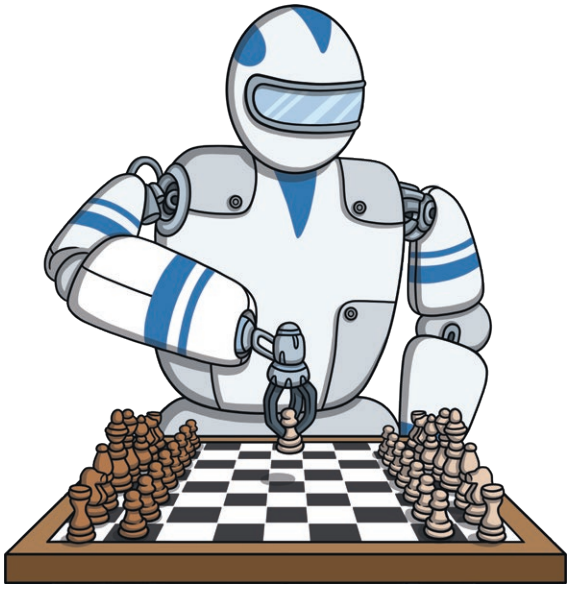

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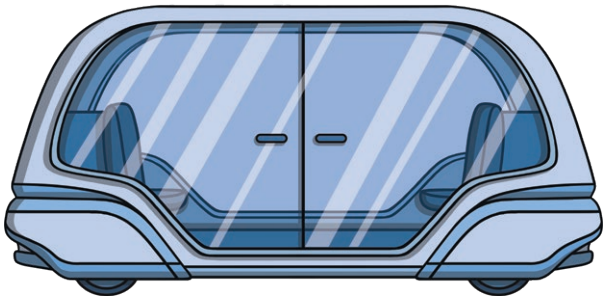

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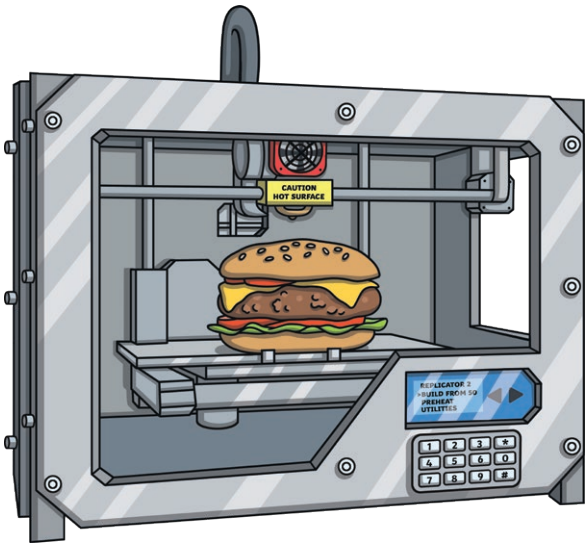

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