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مجلس 1 - نطاق 3
أبي بن كعب للتعليم الأساسي ح 1



دولة الإمارات العربية المتحدة
وزارة التربية والتعليم



رسالة تواصل مادة التصميم والتكنولوجيا (1)

الفصل الدراسي الأول

اليوم والتاريخ
الخميس 27 / 09 / 2018

العنوان	الصف الثالث / الوحدة : الأولى	
Robots – Robotics – Programming	ص 12 - 37	
<p>أبي وأمي .. يرجى مراجعة ما تم دراسته خلال الوحدة الأولى يرجى التكرم بحفظ الكلمات الجديدة ص 12 يرجى استكمال الواجبات على حسب ما هو مقرر واستكمال النقص (بسبب تغيب ابنكم أو نسيانه للكتاب) في نهاية الوحدة ص 36 - 37 ، قمنا بحل اختبار قصير من 5 - وتم وضع درجة للطالب حاليا نحن في الوحدة الثانية سيتم الانتهاء منها خلال الاسبوع القادم</p>		
همسة تربوية	الواجب	ركز على الكلمات
<p>عزيزي الطالب رتب كتبك حسب الجدول اليومي لتفادي حمل حقيبة ثقيلة كن منظماً</p> 	<p>قم برسم روبوتك الخاص بك على A4 قم بتسميته نتظر ابداعك</p>	<p>Robot Robotics Input Output Edison Sensor Actuator Drone Android</p>

إدارة المدرسة
أ. فاطمة الحسني

معلمة المادة
علياء العيان





UNITED ARAB EMIRATES
MINISTRY OF EDUCATION



YEAR OF
ZAYED

Design and Technology



Grade **3**
volume

1 2 3



Unit overview

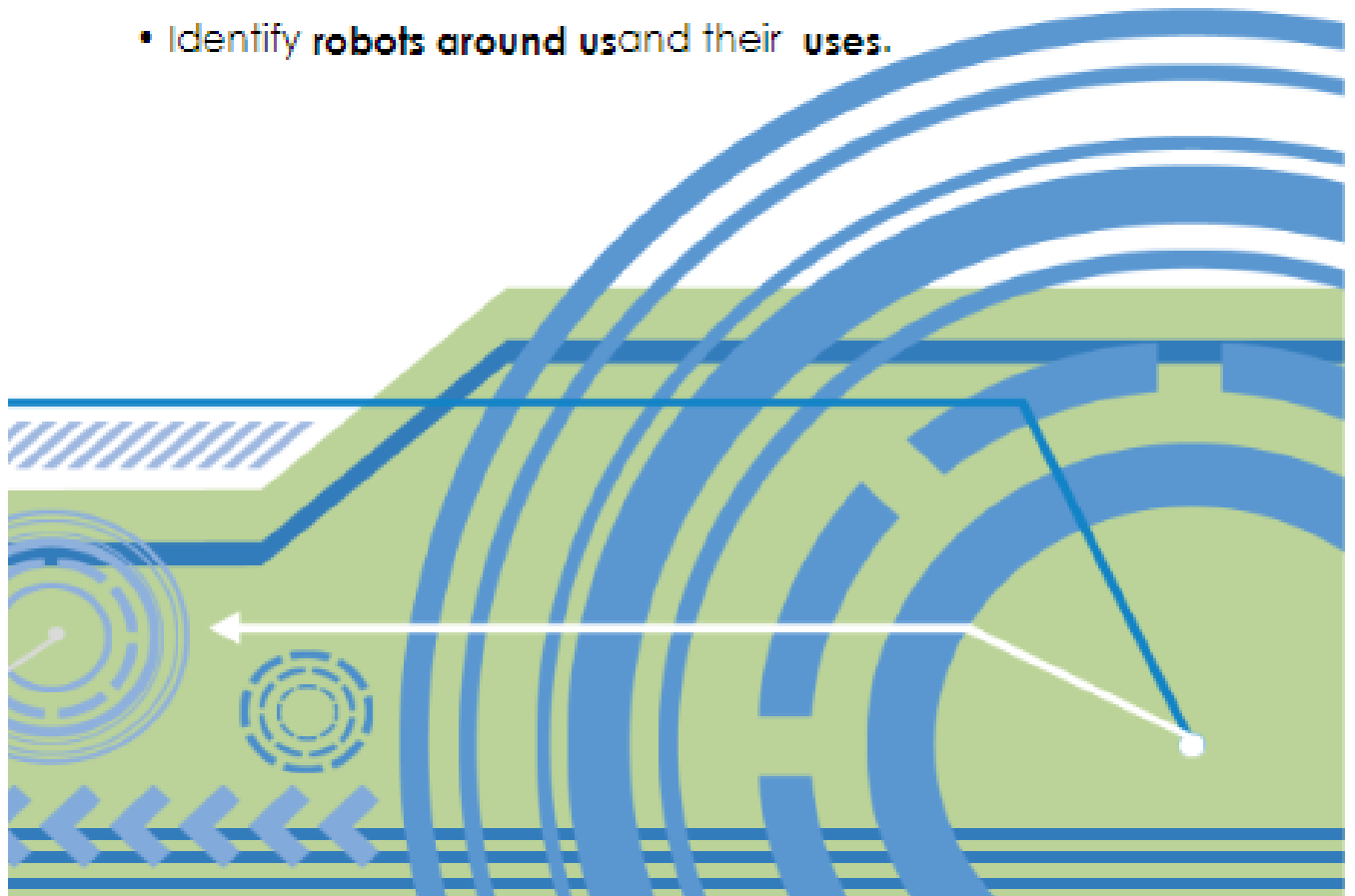
This unit will serve as an introduction to **robotics** and **robots**. The main parts of a robot will be introduced. This will help students understand how **robots** think and work. Students will also see that **robots** are everywhere and how they make our lives easier. **Programming** will also be introduced as a way of communicating with **robots**.

E-Safety

Ensure that you do not share your password with anyone, even with your friends. Always create a password which is difficult to guess. Never use your name, date of birth, city name, country name or car registration number for your password.

Learning outcomes

- Define **robot** and **robotics**.
- Understand **how a robot thinks**.
- Understand the **main parts of a robot**.
- Identify **robots around us** and their **uses**.





KEYWORD

Term	Definition	Image
robots آلة مبرمجة أو نستطيع أن نبرمجها	a machine programmed by a computer to carry out actions	
robotics علم أو دراسة الروبوتات	the study of robots	
input المدخلات	where power or information enters	
output المخرجات - الناتج	where power or information leaves after processing	
sensor حساس	a device that detects heat, sound, motion, moisture or light	
actuator مشغل ميكانيكي - محرك	part of a robot that performs physical action	

What is robotics?

Robotics is the study of robots. In robotics, we learn how:

- to design a robot.
- to make a robot.
- a robot works.
- we use robots.



Robotics has made our lives easier.



Activity

Find these words in the box below (one has been done for you):

M	S	T	O	B	O	R	Z	D
A	S	C	T	T	O	B	O	R
R	M	D	A	K	M	F	U	T
G	A	R	N	R	I	R	O	U
C	C	O	D	I	G	I	Y	F
R	H	N	R	D	N	I	T	T
F	I	O	Z	J	P	V	U	O
Y	N	N	I	P	X	L	U	O
V	E	M	D	Z	F	V	X	T

- android
- robots
- robotics
- input
- output
- drone
- program
- machine





Activity 2

Pair up with a friend.

Did you know the meaning of all the words? List the ones you know.

اكتب كلمات من الصفحة 12

الكلمات الجديدة التي تعلمناها

Each pair should pick one word from their list.

Explain to the rest of the class what it means.

What is a robot?

الروبوت هو آلة نبرمجها

A robot is a machine. You can tell it what to do. It can also do things by itself. Robots can do most of the things you can.



Robots are useful because they:

- do the work we usually do.
- don't need to sleep or rest.
- are fast and do things correctly.

الروبوت مفيد لأنه

1. يقوم بالأعمال التي نقوم بها
2. لا يحتاج إلى راحة أو نوم
3. يقوم بالأعمال بسرعة وبشكل صحيح



Some robots look like people. Look at the picture below.



Did you know?

A robot designed to look and act like a human is called an android.

Android

روبوت يشبه الإنسان
بالشكل والسلوك



Some look different. Look at the robot below.



Drone

روبوت الطائرة ذاتية التحكم

This is a drone. A drone is a flying robot.



Remember!

We can control a drone with a remote control or it can fly by itself.



**Activity 3**

Think of two ways we can use drones.

ارسم أو اكتب استخدامين للطائرة ذاتية التحكم

واجب



Activity 4

Do you recognise these robots?



Parking barrier



Speed camera



Wall-E



How does a robot work?

A robot has three main parts:

- input (sensors)
- brain
- output

أجزاء الروبوت الثلاثة:

1. الإدخال/المدخلات (عن طريق الحساسات)

2. العقل أو المعالج

3. المخرجات

Input (sensors)

Input is something that is taken in, e.g. information about our surroundings. A sensor is a device that detects some type of input.

Five senses



touch



smell



taste



hearing



sight

Robots sense their environment through light, touch, sound and many other built-in sensors, just like we do.



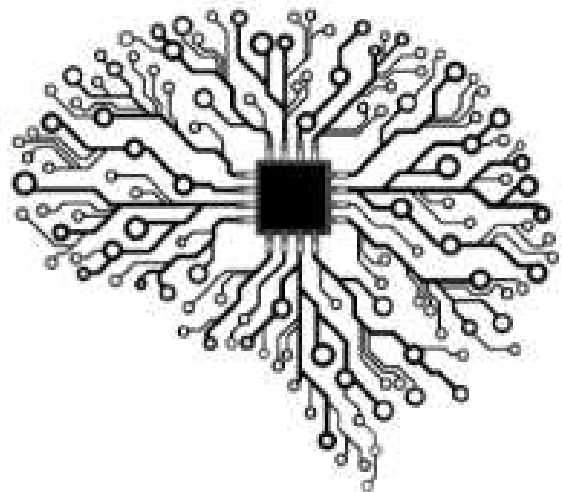
Activity 5

Name the 'sensors' our body uses to detect:

touch	Skin
smell	Nose
taste	Tongue
hearing	Ear
sight	eye

Brain

The brain of the robot processes the input and tells the robot to do an action (output) based on that input. It works just like a brain does in the human body.



Output

Output is anything that is given out. Any action done by a robot after processing is output. Movement and sound are examples of output.



Activity 6

Circle the correct answer.

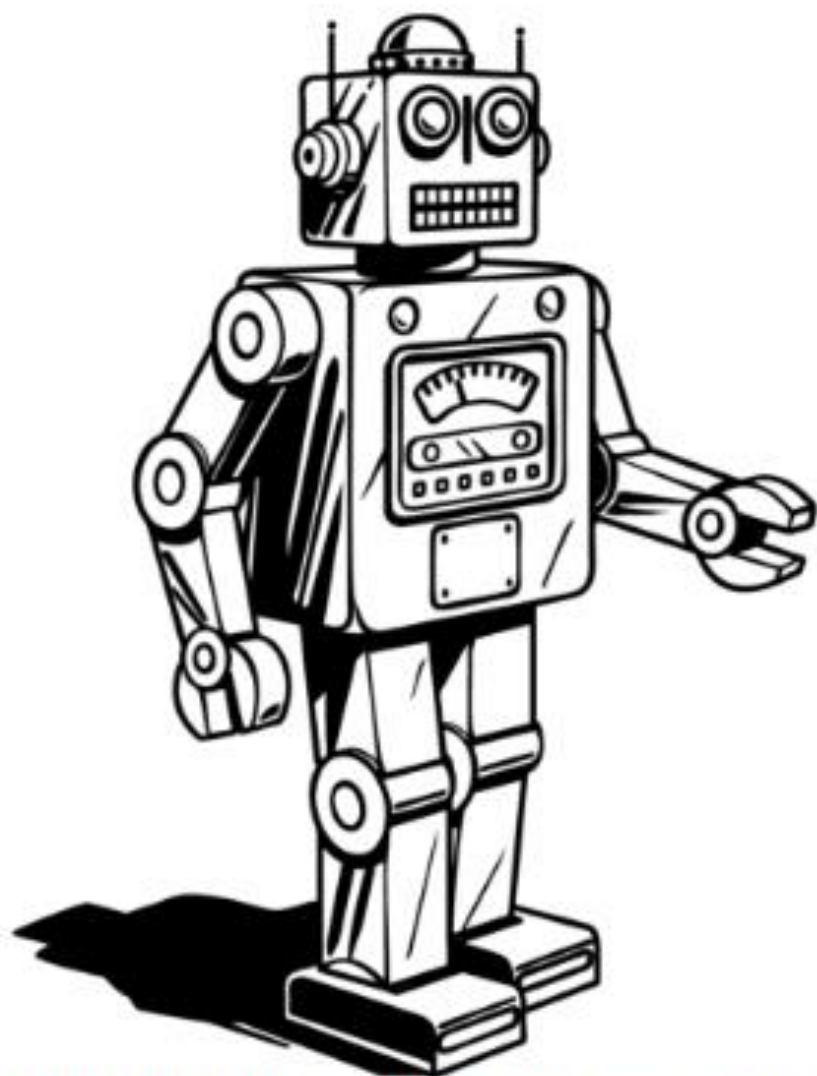
Lights on a robot are an example of:

input

output

Identifying robots and their uses

Not all machines are robots. Only a machine that intelligently interacts with its environment is a robot.



This means that robots, like us, take in information from their environment and make decisions based on that information.





Activity

Pair up with a friend. Come to the front of class.

You will show everyone how a robot works.

One of you will play a robot. The other will read the instructions.

For the reader:

1. Move forward.
2. If something is blocking your way, turn left.
3. Move forward.
4. If something is blocking your way, turn right.
5. Move forward.

Repeat until your robot touches the wall at the back of the room.



Self-driving cars are robots. They work like regular cars except that they do not need anyone to drive them.



You may have some robots in your home. Have you heard of the Roomba?



iRobot's Roomba is a vacuum cleaner that cleans your carpets and floor. If there is something blocking its way, it goes in another direction.





Did you know?

Some robots are now doing jobs that humans used to do. Look at the picture below. This robot is an officer in the Dubai Police Force!



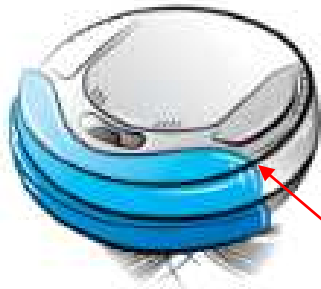
[<https://www.khaleejtimes.com/nation/dubai-police-have-vacancies-for-robots-knowledge-summit>]



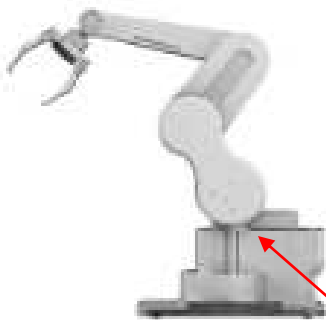


Activity 9

Match these robots to their jobs.



space exploration



cleaning



making things

Programming

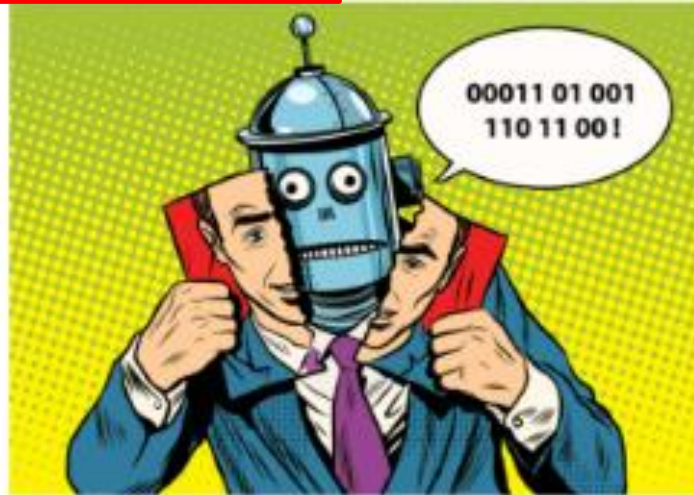
It is important that we know how to talk to robots. We cannot tell them what to do otherwise.



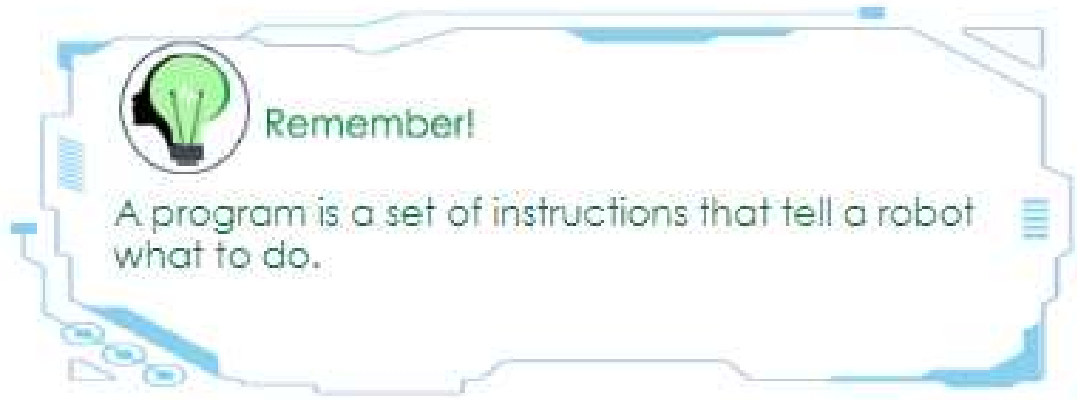
To talk to robots, we need to use a language that they understand. Some popular languages are:

- Java
- Python
- HTML

لغات برمجة معروفة



Telling a robot what to do is called programming a robot.



البرنامج

هو مجموعة من التعليمات أو الأوامر كي تخبر الروبوت ماذا يعمل



summary

ملخص

- Robotics is the study of robots.
- A robot is a machine that does things by itself once programmed.
- Robots that look like humans are called androids.
- Robots that fly are called drones.
- A robot has three main parts: input, brain, output.
- A program is a set of instructions that tell a robot what to do.





quiz

Question 1

Draw any robot.

ارسم صورة روبوت





quiz

Question 2

Complete the crossword puzzle shown below.

				i ₂						
				n						
		d ₁		P ₂	r	o	g	r	a	m
		r		u						
¹ R	o	b	o ₃	t	l	c	s			
		n		u						
		e		t						
				p						
				u						
³ r	o	b	o	t						

Across

1. study of robots
2. instructions for robot
3. programmable machine

Down

1. robots that flies
2. where information enters
3. where information exits



quiz

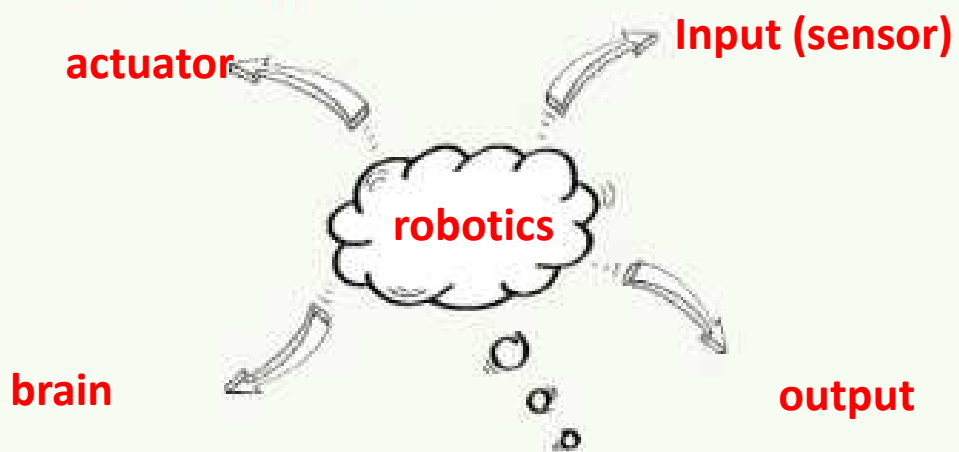
Question 3

What are the three main parts of a robot?

Input (sensor)
Brain
output

Question 4



What do we learn in robotics?




POP quiz 1

Date		
1	Java is a popular programming language.	
	TRUE	FALSE
2	We can talk to robots in any language.	
	TRUE	FALSE
3	A robot has three main parts.	
	TRUE	FALSE

POP quiz 1

4	Robotics is the study of robots.	
TRUE		FALSE
5	Output is anything that is taken in.	
TRUE		FALSE

Evaluation	
Student Evaluation	Teacher's Evaluation
	/5