

10 All things high tech

Noun phrases • Compound nouns • *I need one of those things ...*



STARTER

- 1 Underline the nouns in these sentences.

My brother has the best computer in the world. Mine is just an old laptop.

Find ... a definite article an indefinite article
a possessive adjective a possessive pronoun

- 2 Underline the reflexive pronouns in these sentences.

Mike programs his computer himself.

I live by myself, which suits me fine.

CHIPS WITH EVERYTHING

Noun phrases

- 1 Work with a partner. Read the text about microprocessors. Answer the questions.

- 1 Do you agree with these statements? Why/Why not?
Microchips are huge. Microchips are tiny.
- 2 What things in our daily lives have microchips in them?
- 3 In what way are computers very simple?
- 4 How long does it take to make microprocessors?
- 5 Why do designers put pictures on the chips?
- 6 In what ways is the future exciting?

Microprocessors



The biggest thing since the invention of the wheel

How do they work?

Transistors are microscopic electronic switches that turn on and off billions of times a second. It's hard to believe that basically that is all a computer does – it either says *Yes* or *No*.

To process the words, images and sounds we use every day, computers and other devices (such as CD players) transform these communications into a simple code that uses the numerals 0 and 1 to represent the on and off states of a transistor. This language of 0s and 1s is known as digital information.

What are they?

A microprocessor (also known as a microchip, or just a chip) is a small, thin piece of silicon that has been printed with transistors. One chip can contain hundreds of millions of transistors, performing billions (yes, billions) of calculations each second. The smallest are just a few mm². It is the most complex product that has ever been made.

What do they do?

Microprocessors are the brains of your personal computer. They control everything in our lives. They are used in all digital devices – calculators, cameras, radios, ovens, fridges, washing machines, DVDs, and watches. Without microprocessors, modern cars wouldn't start or stop (there are about 60 per car), TV remotes wouldn't switch channels, and we couldn't text each other on our mobiles. Doctors and surgeons wouldn't be able to diagnose, treat, or operate. Nearly all of their equipment contains microchips.

How are they made?

It takes months to make a microprocessor, and involves over 250 manufacturing steps, but it can take years to design them. Sometimes the engineers put pictures on the surface of the chip because they want to show it's theirs. The pictures are incredibly tiny, and can only be seen with a microscope. They are like the designers' signature.



What about the future?

The digital world is only a few decades old. There are still countless more things we could do with microprocessors. Soon they'll be able to fix themselves and even make themselves. No one knows what will happen. The future hasn't happened yet.

- 2 Look back at the text on p78. Find and complete these sentences.

Microprocessors are the biggest thing since ...
 A microchip is a ...
 The smallest ... mm?
 ... most complex product ...
 Microprocessors control ...
 They are used in all ...
 We couldn't text ...
 Doctors and surgeons ... Nearly all ...
 It takes months ...
 Microprocessors will be able to ... and even ...

GRAMMAR SPOT

Noun phrases can consist of:

Articles

A chip is **a** small piece of silicon.
 It is **the** biggest thing since **the** invention of **the** wheel.

Possessives

All of **their** equipment contains microchips.
 They want to show it's **theirs**.
 The pictures are like the designers' signature.

all/everything

Microchips control **everything** in our lives.
 They are used in **all** digital devices.

Pronouns

Microchips will be able to fix **themselves**.
 We couldn't text **each other**.

► Grammar Reference 10.1–10.5 p143–5

- 3 Read these facts. Which surprise you most?

Did you know ...?

There are **20 billion** microchips in use in the world today. Every year another **5 billion** are produced.

Every **18 months**, the technology develops to allow **twice** as many transistors to fit on a chip, **doubling** its speed and capacity.

The smallest wire on a chip is less than **0.1 microns** wide. A human hair is **100 microns** thick.

PRACTICE

Articles – a/an/the/no article/one

- 1 Discuss the use of articles in these sentences.

I bought **a** laptop and **a** printer on Saturday.
The laptop has **an** *Intel* microprocessor.
Intel is **the** largest manufacturer of computer chips in **the** world.
One chip contains millions of transistors.
 I don't understand (-) computers.

- 2 Complete the text with *a/an/the*, or no article.

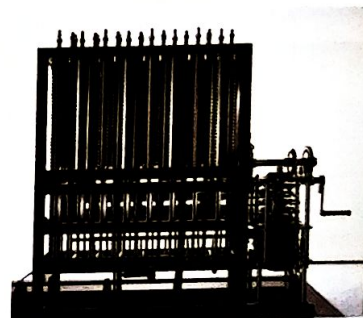
THE FIRST COMPUTER

Charles Babbage (1791–1871) was

(1) _____ scientist and (2) _____ engineer. He had the idea for (3) _____ first programmable computer. He wanted to build (4) _____ machine that could do (5) _____ calculations without making the mistakes that human 'computers' made.

He designed a machine called the Difference Engine, and (6) _____ British Government provided funds. (7) _____ machine was never completed because Babbage ran out of (8) _____ money.

In 1991, (9) _____ team of engineers from (10) _____ Science Museum in London built one of Babbage's machines, using his original designs, and it worked perfectly.



T 10.1 Listen and check.

- 3 Complete the sentences with *a/an/the/no article*, or *one*.

- 'Where's Jane?' 'In _____ kitchen cooking _____ lunch.'
- Washington, D.C. is _____ capital of _____ United States.
- We had _____ dinner in _____ best restaurant in _____ world.
- _____ day I'm going to be _____ rich man.
- Jake's in _____ hospital. He's had _____ operation.
- Certainly _____ computers have changed _____ modern life.
- 'How do you like your coffee?' 'Black with _____ sugar, please.'
- I have two daughters. _____ daughter is _____ teacher, _____ other works in _____ advertising.
- Today is _____ first day of _____ rest of your life. Enjoy it.

Speaking

T 10.2 Work in small groups. Listen to and then answer the questions. Be careful with articles.

Where did you have lunch today? I had lunch in a café/in the school canteen.

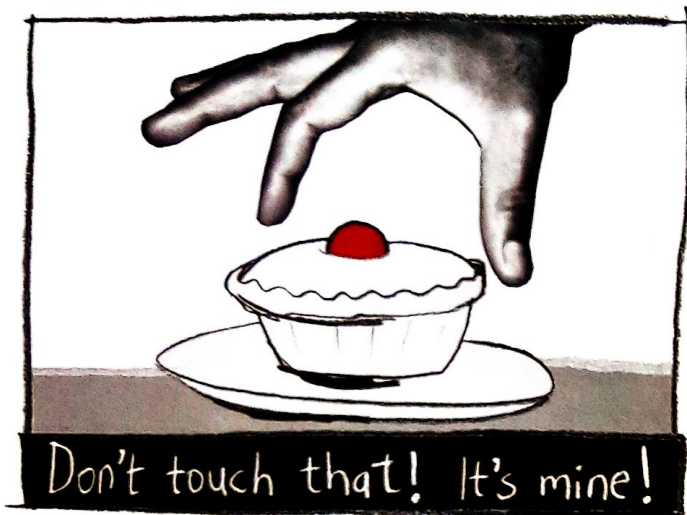
Possessives

- 4 In these sentences, which word is a possessive adjective? Which are possessive pronouns?

I'm very proud of **my** children.

Don't touch that! It's **mine**!

James is an old friend of **ours**.



Underline the correct word.

- 1 'Is that *her / hers* book?' 'Well, it isn't *my / mine*.'
 - 2 'Who's / Whose is that car?' 'It's *our / ours*. Nice, huh?'
 - 3 Microsoft owes *it's / its* success to Windows.
That's why *it's / its* the biggest software company in the world.
 - 4 Those aren't *your / yours* socks. These blue ones are *your / yours*.
 - 5 Mary, this is Pete. Pete's an old friend of *me / mine*.
 - 6 My sisters borrow *my / mine* clothes, and I borrow *their / theirs*.
- 5 In these sentences when does the apostrophe come before s? When does it come after?

My wife's family live in the north-east.

I went to a **boys'** school.

Put the apostrophe in the correct place in these sentences.

- 1 I've borrowed my dads car.
- 2 My parents new house is great.
- 3 I like Alices boyfriend.
- 4 The childrens room is upstairs.
- 5 I really like my brothers girlfriends.

its or it's

- 6 **T 10.3** Listen to the sentences. Underline the words you hear.

- | | | |
|------------------|---------------|------------------|
| 1 its it's | 3 there their | 5 they're their |
| 2 theirs there's | 4 it's its | 6 there's theirs |

all and every...

- 7 Correct the mistakes in these sentences.

- 1 I buy ~~my all~~ ^{all my} clothes in the market.
- 2 All was stolen in the burglary.
- 3 'Did they take any of your CDs?' 'All.'
- 4 In my family we like all football.
- 5 All enjoyed the party.
- 6 All of employees in my company work hard.

- 8 Complete the sentences with *all/everything/everybody/ everyone*.

- 1 Two plus two is four. Everybody knows that.
- 2 _____ I want is you.
- 3 I'm having a terrible day. _____ is going wrong.
- 4 My girlfriend gets at me _____ the time.
- 5 My sister is really popular. She knows _____, and _____ knows her.

Reflexive pronouns and each other

- 9 Look at the sentences.

I cut **myself** shaving.

They send **each other** Christmas cards.

Which sentence expresses the idea: ↗ ?

Which sentence expresses the idea: ↘ ?

Complete the sentences with *myself/yourself, ... or each other*.

- 1 We love _____ and we're going to get married.
- 2 He's crazy! He could have killed _____!
- 3 Do you like the cake? I made it _____.
- 4 'Can you make me a cup of tea?' 'No. Do it _____.'
- 5 My kids get on well with _____.
- 6 Please make _____ at home.
- 7 We're very different, but we understand _____.
- 8 Her kids are good. They know how to behave _____.
- 9 The food's all ready, so help _____ to whatever you want.

mime

With a partner or on your own, mime these to the class. The others must say what you're doing.

- look at yourself in the mirror
You're looking at yourself in the mirror.
- talk to yourself
- hate each other
- help yourself to a drink
- enjoy yourself
- help each other with homework
- shout at each other
- not speak to each other

