Oxford International Primary

2

Computing

Student Book

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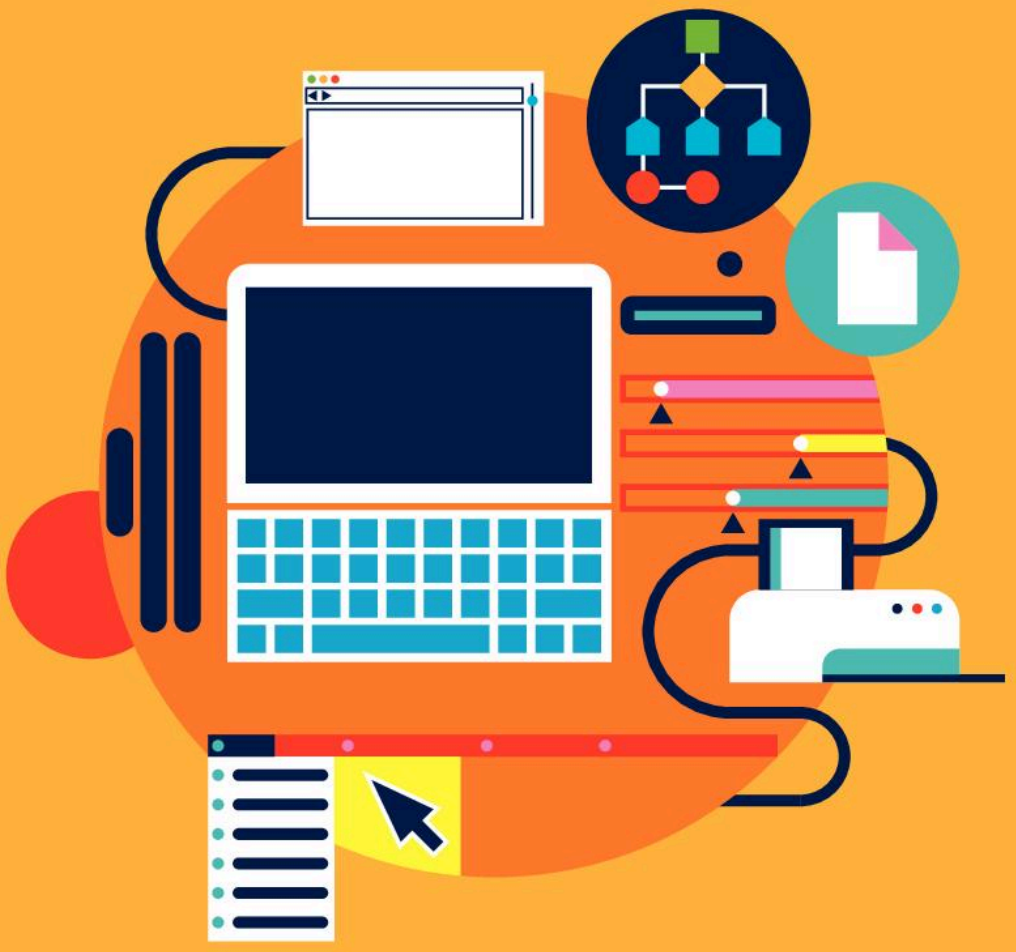

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Contents

Introduction

Delivering computing to young learners

Oxford International Primary and Lower Secondary Computing is a complete syllabus for computing education for ages 5–14 (Years 1–9). By following the program of learning set out in this series, teachers can feel reassured that their students have access to the computing skills and understanding that they need for their future education.

Find out more at:
www.oxfordprimary.com/computing.

Structure of the book

This book is divided into six chapters, for Year 2 (ages 6–7).

1. **The nature of technology:** Introduction to the different parts of a computer
2. **Digital literacy:** Finding information on the internet
3. **Computational thinking:** Planning how to solve a problem
4. **Programming:** Making a program with a simple loop
5. **Multimedia:** Making a document with a computer
6. **Numbers and data:** Using a spreadsheet to do sums

What you will find in each unit

- Introduction: An offline activity and a class discussion help students to start thinking about the topic.
- Lessons: Six lessons guide students through activity-based learning.
- Check what you know: A test and activities allow you to measure students' progress.

What you will find in the lessons

Although each lesson is unique, they have common features: learning outcomes for each lesson are set out at the start; learning content delivers skills and develops understanding.

Every lesson involves a learning activity for the students.

Activities to extend students who are able to do more.

Questions check students' understanding of the lesson.

Additional features

You will also find these features throughout the book:

The word cloud builds vocabulary by identifying key terms from the unit.

Suggestions for creative and artistic work.

Extra tasks that can be taken outside the classroom and into the home.

Advice on using computers responsibly in life.

Glossary Key terms are identified in the text and defined in the glossary at the end.

Assessing student achievement

The final pages in each unit give an opportunity to assess student achievement.

- Developing: This acknowledges the achievement of students who find the content challenging but have made progress.
- Secure: Students have reached the level set out in the programme for their age group. Most should reach this level.
- Extended: This recognises the achievement of students who have developed above-average skills and understanding.

Questions and activities are colour-coded according to achievement level. Self-evaluation advice helps students to check their own progress.

Software to use

We recommend Scratch for writing programs at this age. For other lessons, teachers can use any suitable software, for example: Microsoft Office; Google Drive software; LibreOffice; any web browser.

Source files


You will see this symbol on some of the pages.

This means that there are extra files you can access to help with the learning activities. For example, Scratch programming files and downloadable images.

To access the files, click 'Download resources' at:
www.oxfordprimary.com/computing.

Teacher's Guides

For more on these topics, look at the Teacher's Guide that accompanies this book.

1 The nature of technology: Our computers

You will learn

- what are the main parts of a computer
- what the main parts of a computer are for
- things computers can and cannot do.

Computers are all around us.

Computers are in our phones. Computers are in our homes.

Computers can help us learn and do our work.

You need to learn to use computers safely and in ways that make the world a better place.

Talk about...

Why do you think it is important to know how a computer works?

Learning outcomes: Name the main parts of a typical computer and what they are for; Say some things a computer can do and some things a computer cannot do

Class activity

Look at a computer in your classroom. Draw the computer on a big piece of paper. How many parts have you drawn? Can you name the parts? Talk to a partner about the names you know. Write the names on the drawing.

input
output device
mouse processor
wireless screen

Did you know?

Computers use electricity to do their work. There are many ways to make electricity. Renewable electricity means electricity from sources that will never run out such as sunshine or wind power.

1.1 Computers are electric

In this lesson

You will learn:

- what a processor is
- how computers use electricity.

Spiral back

In Student Book 1 you learned what a computer is. In this unit you will learn what is inside a computer.

What is electricity?

A **device** is something people make to do a useful task. Many devices use electricity.

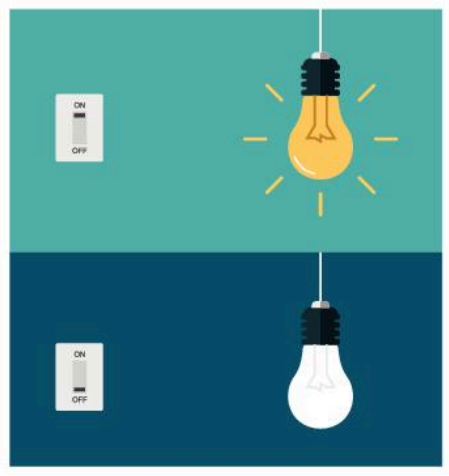
Electricity is a kind of energy. Wires bring electricity. The electricity flows along the wire.

But electricity is dangerous. If you touch an electric wire you will get a bad shock. It will hurt you. So be very careful with anything that has electricity in it.

Electricity ON and OFF

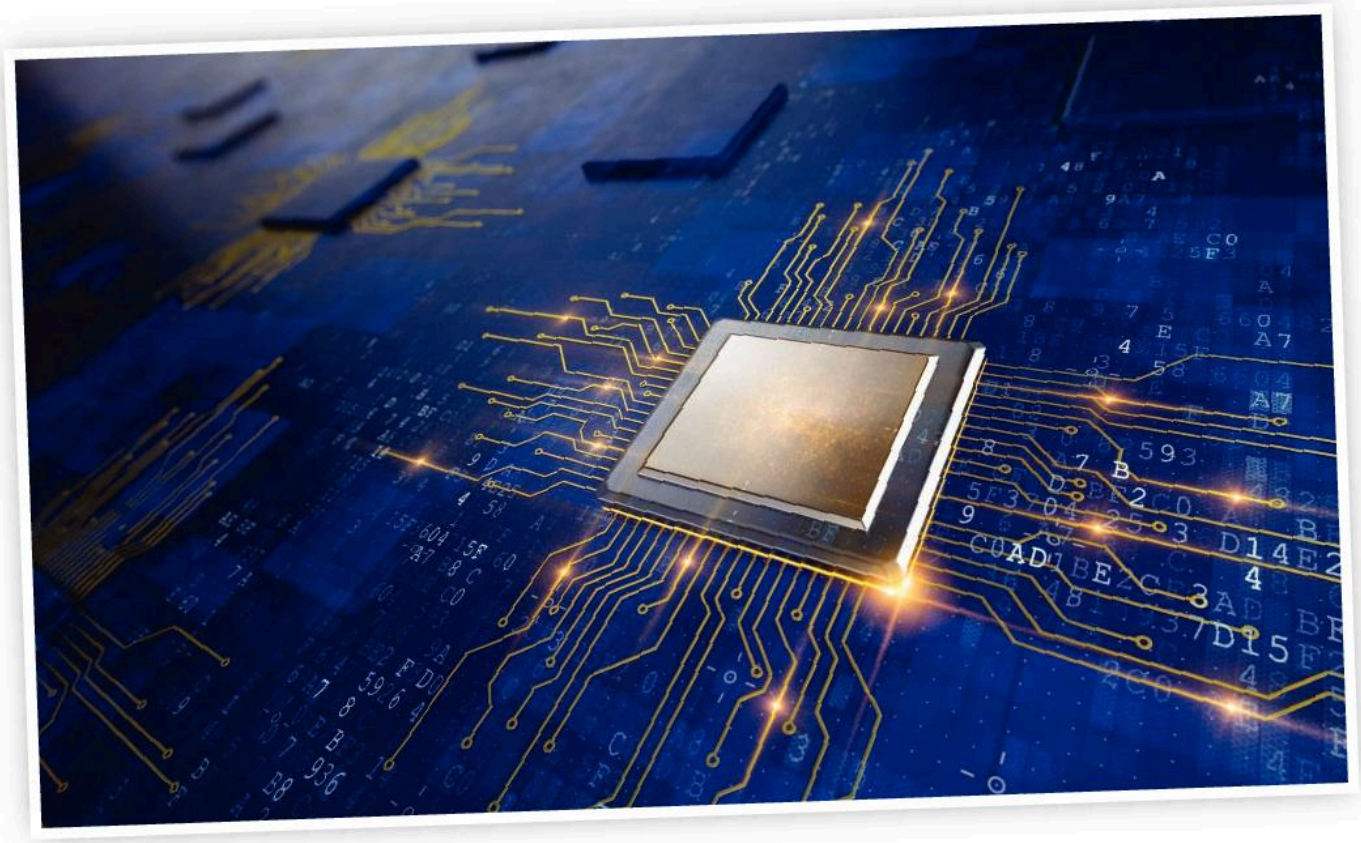
Electricity can be ON or OFF. Think of a light bulb. When the switch is ON, electricity can get through. The light goes on.

The OFF switch stops the electricity. The light goes off.



Inside the computer

There is an electrical device inside the computer. It is called a **processor**. The processor uses on/off electrical signals. Everything that happens inside the processor is made of on/off electrical signals.



Activity

Tell a partner about the last time you used a computer. What did you use it for?

Extra challenge

Draw a computer. Show the wire that brings electricity to the computer. Draw a circle where you think the processor is.

Think again

What must you do to stay safe when you use electronic devices?

1.2 Output

In this lesson

You will learn:

- what output is
- what computer parts are used for output.

Inside a computer

A computer holds lots of information. For example numbers and pictures. It holds the information using electricity.

But you cannot see the electricity. The circuits are too small. It is dangerous to open a computer when the electricity is switched on.

Output devices

You cannot look at the electricity inside a computer. How can you find out what is inside the computer?

You use an **output device**.

Output devices take the electricity from the processor. They turn the electrical signals into things you can see and use.

Output you can see

The **screen** or **monitor** of a computer is an output device. It takes information from the processor. It turns it into colours and shapes.

A monitor makes visual output. That means you can see the output.

A printer gives you output. The output is on paper. You can keep the output after the computer is switched off.