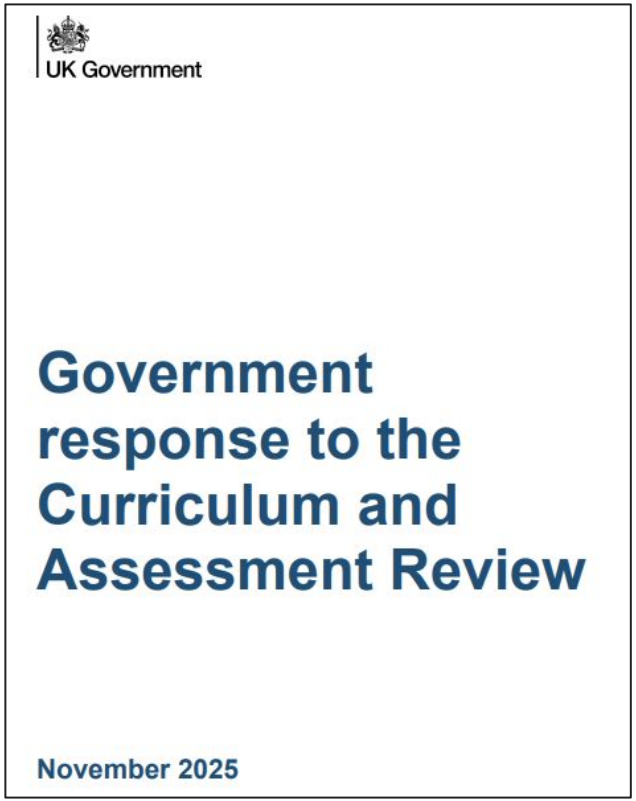
Oak National Academy

Be Ready for NC 2028

What the transition from
Teach Computing to Oak Computing
means for schools

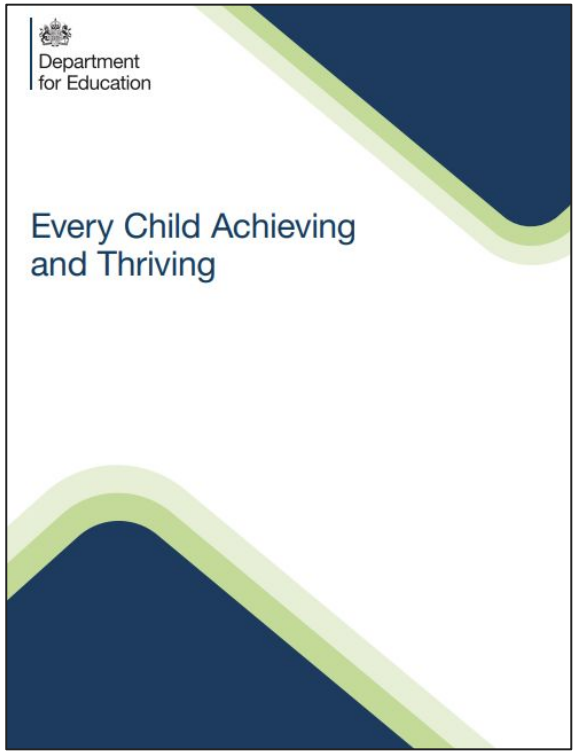
Stuart Davison
Computing Subject Lead

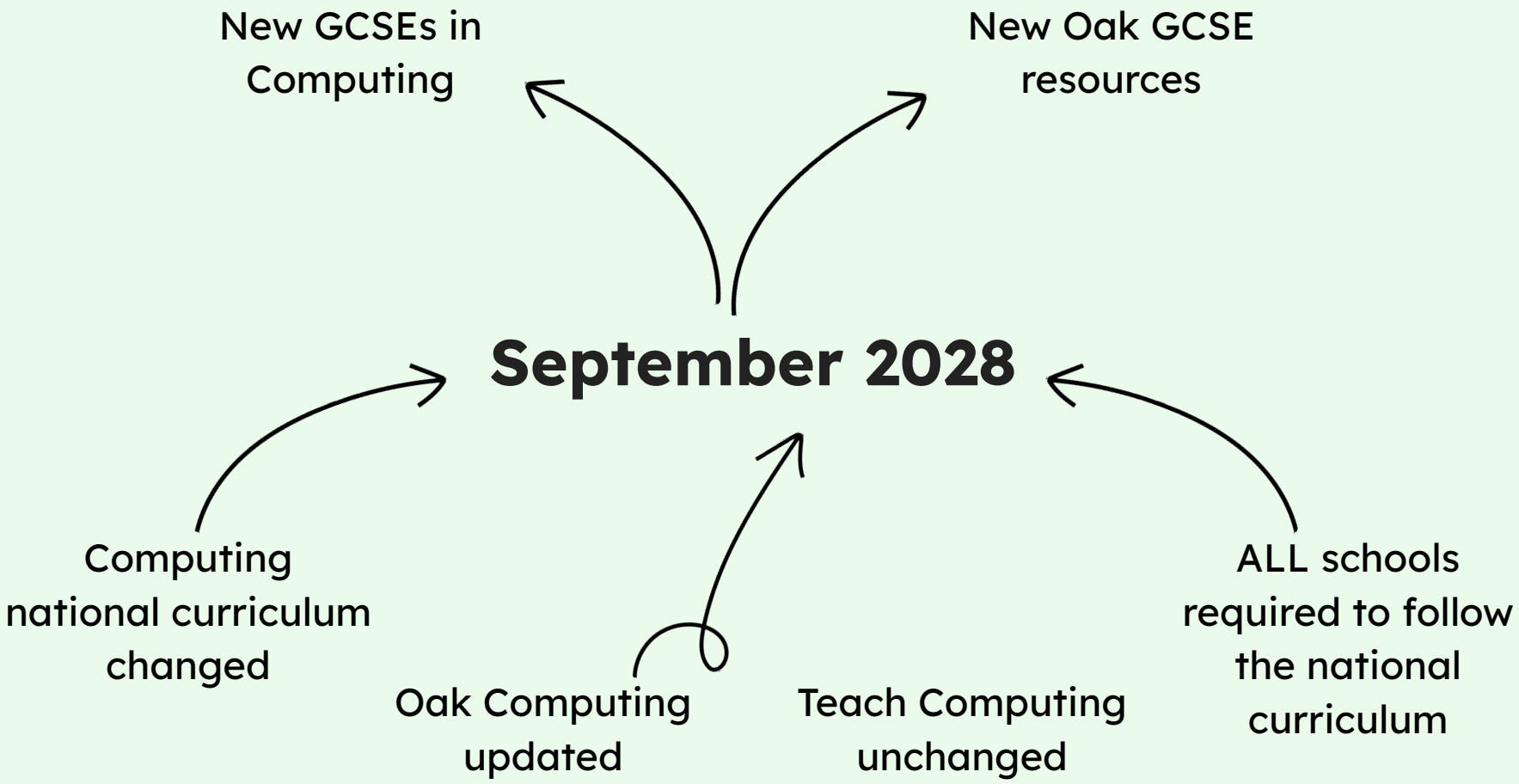


“Schools will begin teaching the new curriculum from September 2028.”

“All children should study a broad curriculum to age 16.”

“Oak National Academy will continue to work with teachers to develop a range of AI tools and curriculum materials.”




New GCSEs in Computing
New Oak GCSE resources
September 2028
Computing national curriculum changed
Oak Computing updated
Teach Computing unchanged
ALL schools required to follow the national curriculum

2026

Digital literacy curriculum

Years 1–9

- 54 fully resourced lessons

2027

Updated curriculum and guidance

- Aligned with the revised national curriculum

2028

New Oak resources ready for new National Curriculum

KS1 KS2 KS3 KS4

- Computing taught at KS4 is compulsory

2029 *

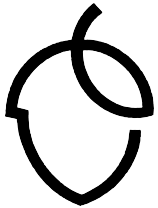
New Oak resources for new GCSE Computing

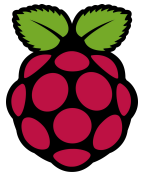
- New resources tailored for each exam board

* Year TBC

NCCE

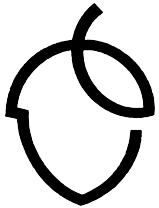
Teach Computing 1.0





Oak computing 2025

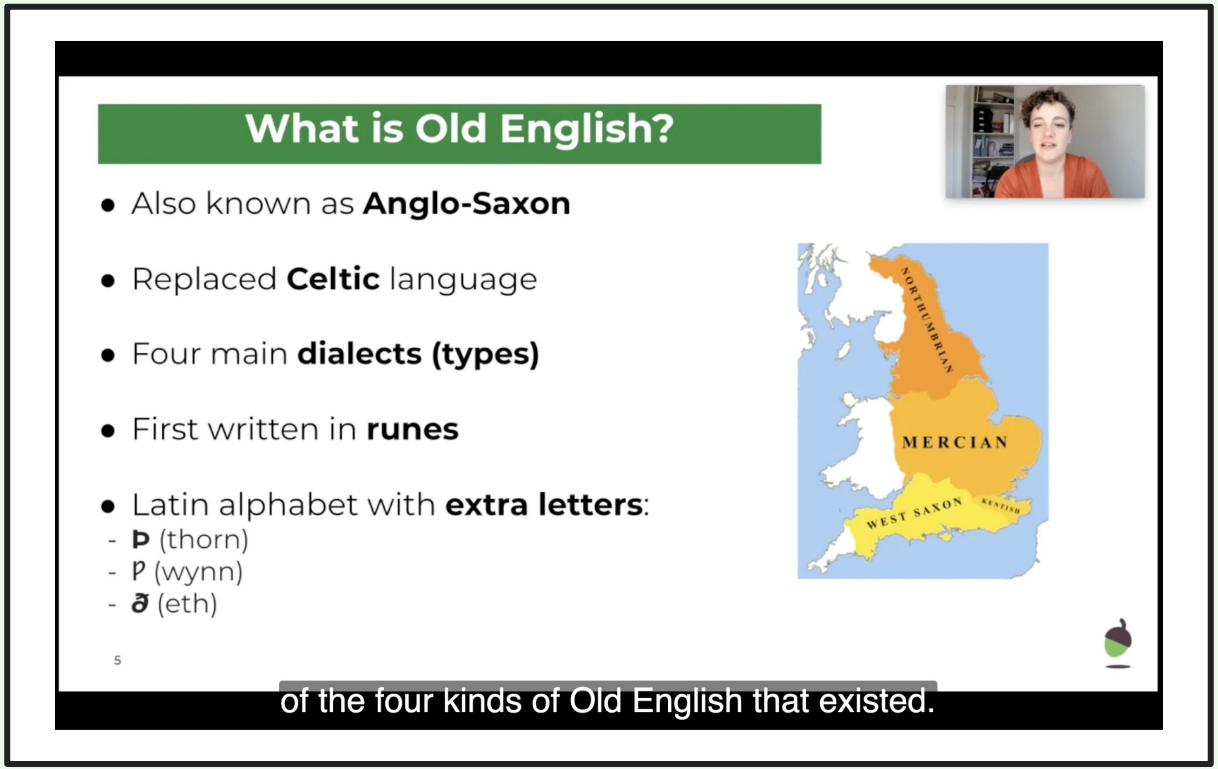
Teach Computing 1.5



Oak computing 2028

Teach Computing 2.0

Oak in 2020: a pandemic response

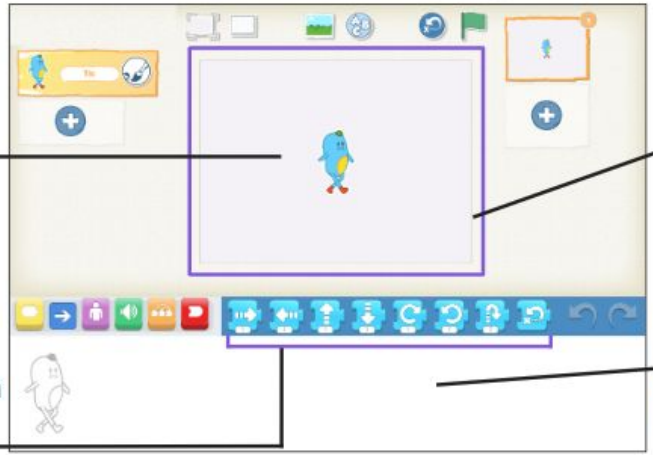


We've changed!

Identifying commands that are used in an animation

Explanation

What are the different parts of the program?



sprite

the stage, which is where the **sprite** performs **commands**

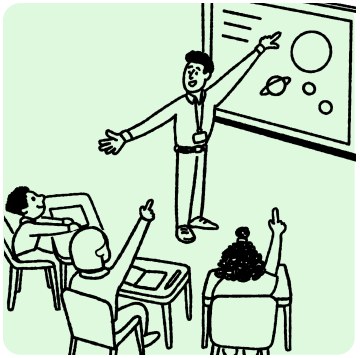
command blocks, which control the **sprite**

the programming area, which is where **command** blocks are placed

Complete curriculum support, for clarity and coherence in every subject.

We've evolved. From KS1 to GCSE, Oak now offers complete curriculum support for clarity and coherence in every (national curriculum) subject, all in one place – designed by experts, for your classroom.

Full curriculum plans for every national curriculum subject across KS1-4

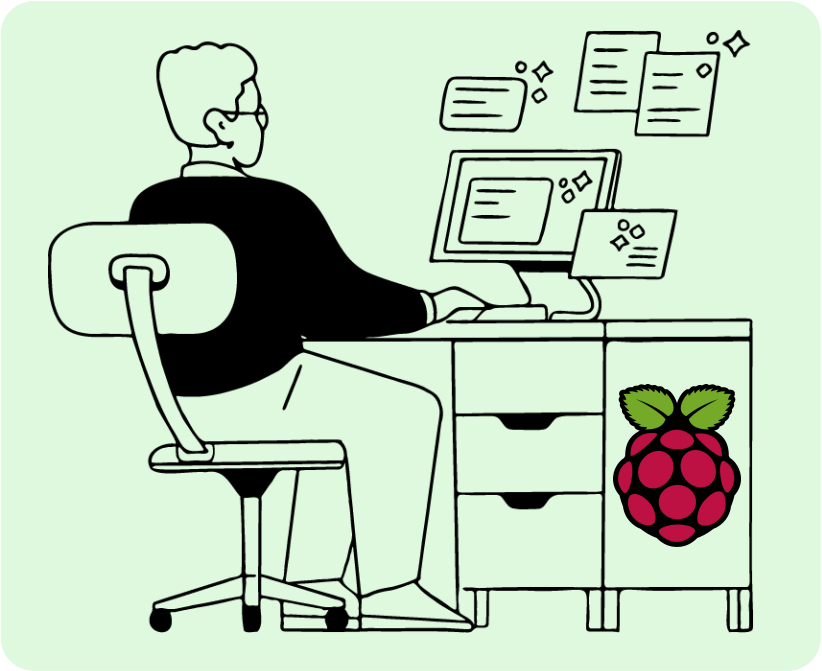


Lesson resources including slides, teacher guidance, videos, quizzes and worksheets

Tailored pupils area to support homework and revision

AI tools to help you transform your lessons and teaching materials

DfE funded, high quality, always free



Digital Literacy lessons released Summer 2026.

Years 1 to 9.

1 unit of 6 lessons per year.

54 fully resourced lessons.

thenational.academy

Teaching resources

Curriculum plans

AI Experiments New

Pupils

Teachers

Time-saving teaching resources

Get a head-start on your lesson planning using quality-checked resources you can download and adapt for free.

Search

Search by keyword or topic

Unit sequence | Explainer | Download

Year group

All | Year 7 | Year 8 | Year 9 | Year 10 | Year 11

Highlight a thread

- None highlighted
- Algorithms and data structures
- Artificial intelligence
- Computing systems
- Creating media
- Data and information
- Design and development
- Effective use of tools
- Impact of technology
- Networks

Year 7 units

1
Clear messaging in digital media
6 lessons Save

2
Computer networks and data transmission
6 lessons Save

3
Using media to gain support for a cause
6 lessons Save

4
Using fundamental programming constructs in a block-based language
6 lessons Save

5
Physical computing using the micro:bit
6 lessons Save

6
Data modelling
6 lessons Save

Year 8 units

1
Developing vector graphics

2
Computer systems and data

3
Developing for the Web

Describe computer programs

Explanation

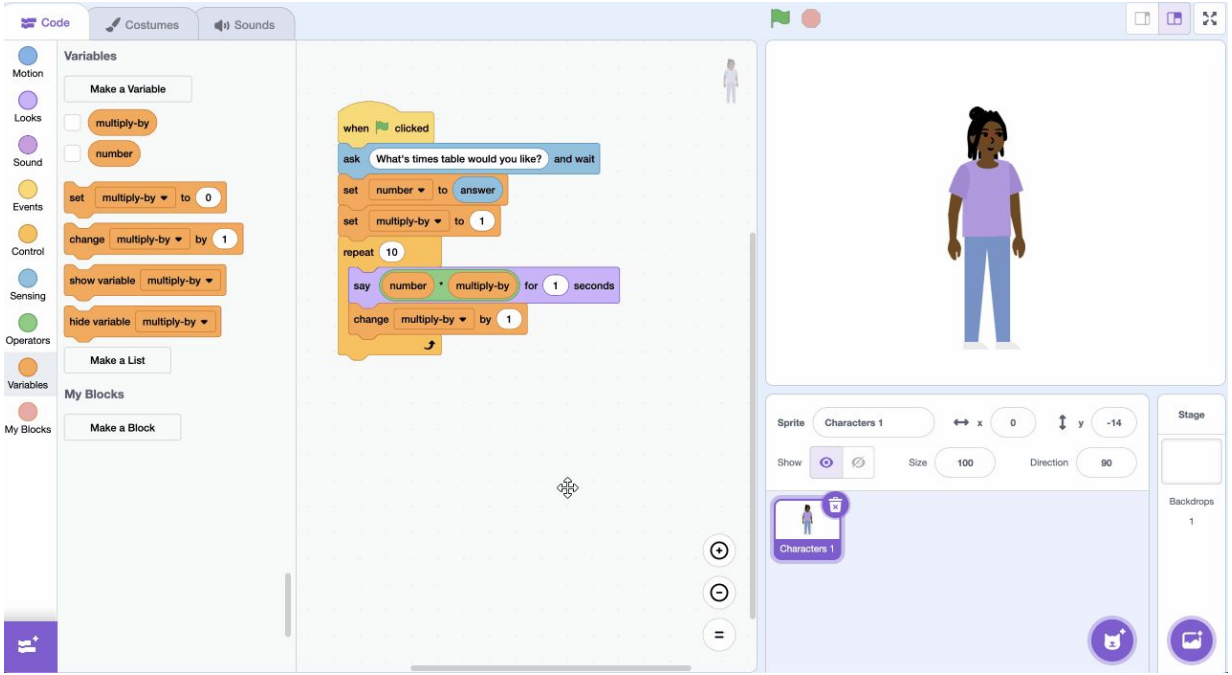
I used a video streaming service on my TV this morning. That's a **computer program** too!

Jun

These **programs** allow you to watch shows and movies by connecting to the internet and playing videos on demand.

Implement count-controlled iteration in a program

Explanation



I fixed the program by adding a change multiply-by by 1 inside the repeat block.

Sam

oak.link/times-table-solution

Task A Describe and use HTML

Feedback

2) Use the <p> c .
Each sentence r

```
1  <!DOCTYPE htm
2  <html>
3      <body>
4          <h1>M
5          <p>On
6          <p>I
7          <p>In
8          <p>We
9          <p>It
10     </body>
11 </html>
```

my-sunday-solution

index.html

```
1  <!DOCTYPE html>
2  <html>
3      <body>
4          <h1>My Sunday</h1>
5          <p>On Sunday, I had a relaxing day at home.</p>
6          <p>I watched my favourite TV series and played video games.</p>
7          <p>In the afternoon, I helped my parents cook dinner.</p>
8          <p>We made homemade pizza. </p>
9          <p>It was fun choosing my own toppings!</p>
10     </body>
11 </html>
```

Open the solution code oak.link/my-sunday-solution.

Describe image resolution

Check

Which image has a **resolution** of 300 x 600?

a

b

c

Describe bitmap image representation

Explanation

Our teacher has just uploaded this to a page on the school's website all about our visit to the Houses of Parliament.

Laura

How do things we see with our eyes end up as photos on websites?

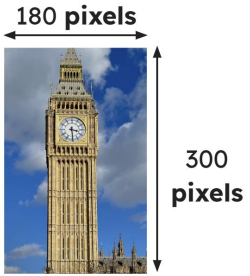
Describe image resolution

Explanation

Image **resolution** can be expressed as its **pixel** dimensions.

Image **resolution** = width x height

Image **resolution** = 180 x 300



Task C Compare different resolutions and colour depths

Practice

1. A photo of a new cake shop has been taken to be used on a billboard to advertise its new opening times.

   When printed, it doesn't appear realistic in colour and is blurry.

   Explain, with reference to the **resolution** and **colour depth**, what the issues are likely to be with the photo.

Task B Describe image resolution

Feedback

1. Explain why Jun is wrong and what the correct **resolution** of the image is.

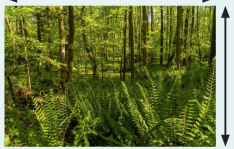
   *Jun has used the width and height measurements in the wrong order. When expressing image **resolution** as dimensions, it should be expressed as width x height.*

   *The correct **resolution** of the image is 300 x 120.*

Jun

The **resolution** of this image is 120 x 300.

300 **pixels**

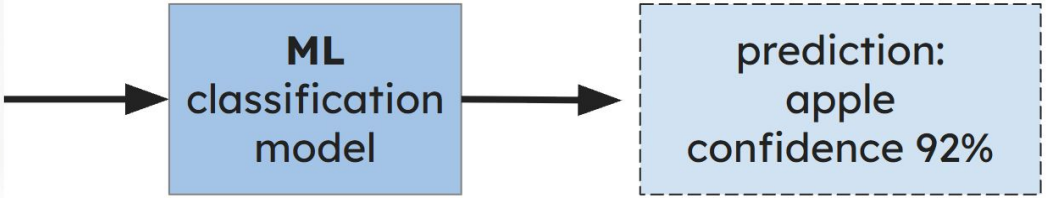


Describe machine learning

Explanation

Once the model is trained, new data can be fed into the model and it will produce a prediction of which class it belongs to.

new input data



Reduce algorithmic bias

Explanation

Izzy is planning to collect data to find the five most popular lunchtime meals in her school.

I could conduct a survey and ask all the other students in my class what their top five favourite lunchtime meals are. I think that's fair because I'll make sure I ask everyone in the class.

Izzy

Think about Izzy's plan to collect data. Do you think the data Izzy collects will be **biased** or unbiased?

Reduce algorithmic bias

Explanation

There are a number of ways in which algorithms can become **biased**, such as:

using or learning from **biased** data

using bad design choices in the algorithm

Note that there are other other ways in which algorithms can become **biased**.

Reduce algorithmic bias

Explanation

Representation **bias** is when data doesn't accurately represent the real-world population or the problem it's trying to solve.

This means that some groups are underrepresented, overrepresented or completely missing from the data set.

An example of this would be a facial recognition algorithm that is trained on data that doesn't represent the true diversity of human faces in the world.

Task B Reduce algorithmic bias

Feedback

1) Describe what type of algorithmic **bias** might have occured in the phone's voice-activated virtual assistant.

*There could be many reasons why the assistant is showing algorithmic **bias**. I think the most likely type of **bias** would be representational **bias** because the algorithm may have been trained using data that didn't contain voices or accents like Folade's. This would mean the data didn't truly represent the real-world population and would be **biased** towards certain groups of people with certain voices or accents.*

Izzy

View all lessons

Year 10 • Computer Science

Representing bitmap images

Lesson outcome

I can describe how computers represent bitmap images.

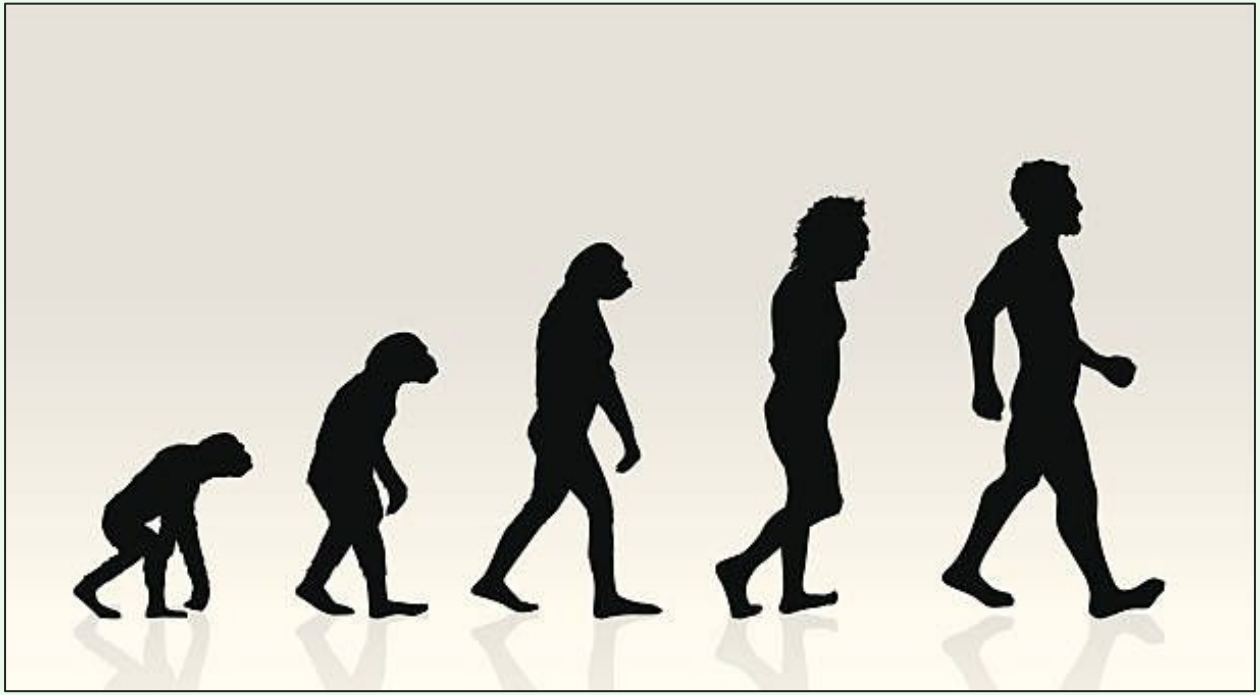
Introduction
Prepare >

Starter quiz
Activate - 6 Questions >

Lesson video
Learn >

Exit quiz
Check - 6 questions >

Google Classroom



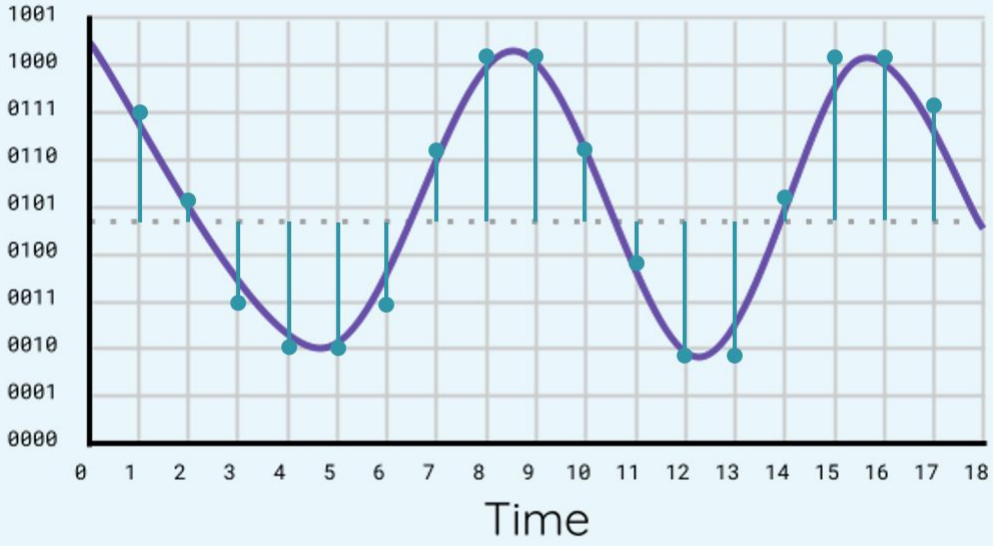
You do not need to rebuild everything

Representing sound

The sound we hear is **analogue**, but computers must store it **digitally**.

In order to store the sounds digitally, a **sample** is taken at regular **intervals**.

This is known as the **sample rate**, which is measured in **hertz** (Hz).



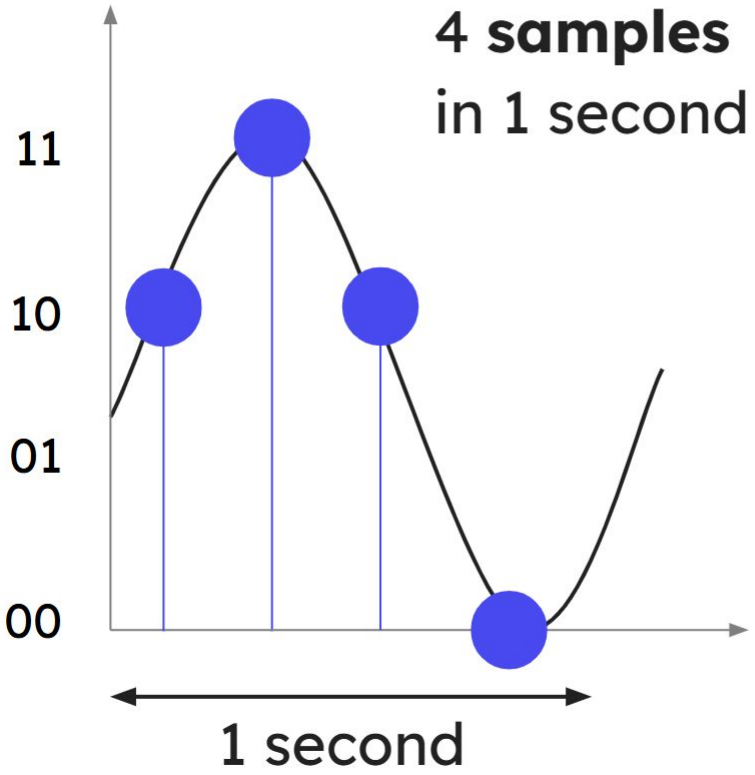
Create a binary sequence from a sound wave

Explanation

Digitisation of a sound wave continues at regular intervals.

The number of **samples** taken in 1 second is referred to as the **sample rate**.

The unit for this rate is hertz (Hz).



Make a prediction (think, write, pair, share)

```
1  def to_the_power(a, b):
2    answer = a**b
3
4  print("Enter a number:")
5  num1 = int(input())
6  print("Enter a second number:")
7  num2 = int(input())
8
9  to_the_power(num1, num2)
10
11 print(f"{num1} to the power of {num2} is
   {answer}")
```

Use the **worksheet** to make a **prediction** about this code.

Use functions to return values in programs

Explanation

What do you think will happen when this code is run if the user types in 2 for the first number and 3 for the second number?

```
1   def to_the_power(a, b):
2     answer = a**b
3
4   print("Enter a number:")
5   num1 = int(input())
6   print("Enter a second number:")
7   num2 = int(input())
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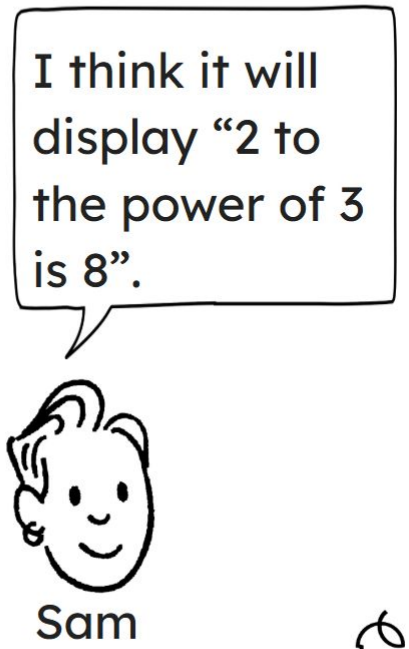

Oak will provide:

- ✓ Updated curriculum sequences
- ✓ AI tools to adapt curriculum and lessons
- ✓ A fully digital model of the revised national curriculum
- ✓ Guidance on what’s changed
- ✓ Webinars and expert sessions to support teachers

Thank you

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