Knowledge organiser

Vocabulary	
Birth rate	The number of births per 1,000 people per year.
Death rate	The number of deaths per 1,000 people per year.
Densely populated	Many people live in the area. For example: cities such as Manila in the Philippines and Milan in Italy.
Food insecurity	Being without reliable access to enough affordable and nutritious food.
Food production	Growing food for people to eat.
Life expectancy	The average age that a person is expected to live to.
Population	The number of people who live in a particular place.
Population density	The number of people living in one square kilometre.
Sparsely populated	Very few people live in the area. For example: rural areas such as the Scottish Highlands.

Population challenges	
Rapidly growing population	1. Hard for authorities to plan when populations grow quickly. 2. Increased pressure on resources, land and services (such as health and education). 3. Increased pollution.
Ageing population	1. Increased pressure on health services. 2. Fewer people in the population working and paying taxes. 3. Increased poverty amongst older people.
Feeding the population	1. One in nine people still go hungry every day. 2. Global population still increasing but food production is not increasing as quickly. 3. Food is not evenly distributed.

World population growth

Science
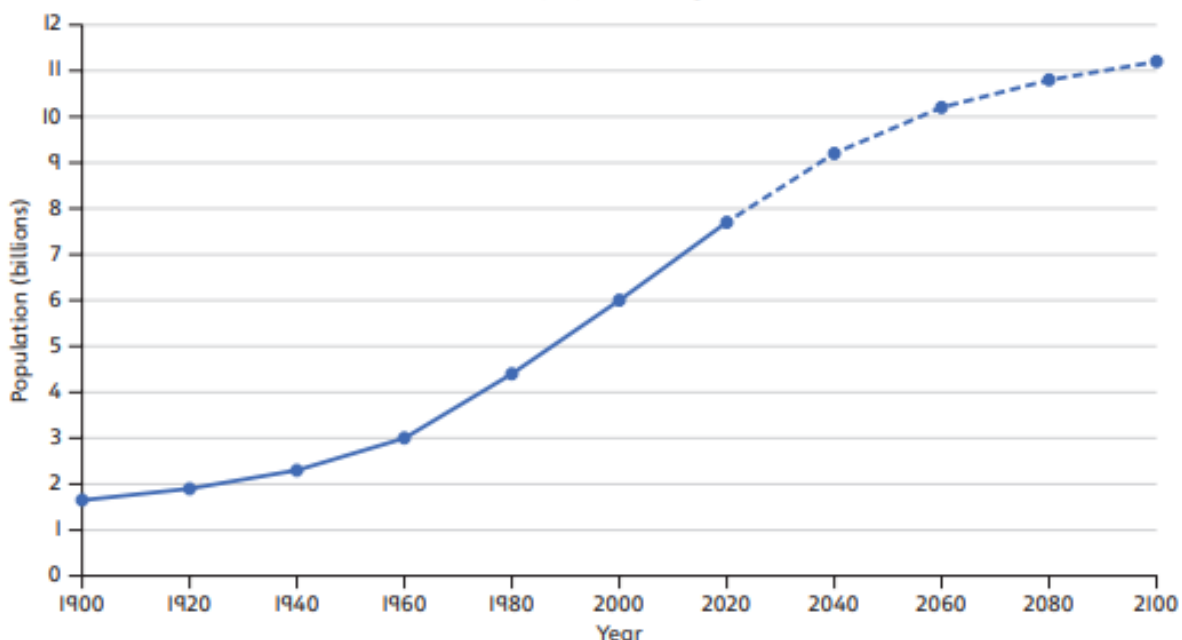
The energy stored in an object has describes its has the ablity to make something happen.

Energy facts:

- All energy that is available in the universe already exists
- Energy cannot be created or destroyed
- An energy transfer is when one type of energy is passed to another (e.g. kinetic energy when two things collide)
- An energy transformation is when energy is moved from one stored into another (e.g. chemical to heat when a match is burned)

Efficient

When most of the total energy in to a machine is converted to useful energy out.

Calculation:

$$\text{Efficiency} = \frac{\text{Useful energy output}}{\text{Total energy input}}$$

High efficiency	Low efficiency
When VERY LITTLE energy is wasted	When A LOT of energy is wasted
E.g. when a car converts most of its chemical enegy into kinetic energy	E.g. when a car converts most of its chemical enegy into kinetic energy

Power

How much energy is transformed each second. It is measured in Watts (W).

Calculation:

$$\text{Power} = \frac{\text{Energy transformed}}{\text{Time taken}}$$

High power	Low power
A lot of energy transformed each second	Small amount of energy transformed each second
E.g. an oven transfers 2.400 Joules each second (2.400 W)	E.g. an lightbulb transfers 60 Joules each second (60 W)

Energy Store Examples

Gravitational potential energy	Energy stored in an object when it is raised above the ground	
Kinetic energy	Energy stored in an object that is moving	
Chemical energy	Energy stored inside the chemical bonds inside of substance	
Elastic Potential Energy	Energy stored in objects that have been stretched or squashed when that will spring back to their original shape	
Heat energy	Energy stored in the vibrations and movement of individual particles as heat	

Speed

The distance an object will cover in a certain time. Can be measured in metres per second, miles per hour or some others.

Calculation:

$$\text{Speed} = \frac{\text{Distance covered}}{\text{Time taken}}$$

High speed	Low speed
When something covers a large distance in a short time	When something covers a short distance in a long time
E.g. a car travelling 32 metres per second	E.g. a snail travelling 1 centimetre per second

Kinetic energy is larger if:

- The mass of an object is bigger
- The object is moving faster

Using a calculator

Kinetic Energy = 0.5 x mass x speed x speed

High kinetic energy	Low kinetic energy
a car moving at 32 m/s, with a mass of 1000 kg	A cricket ball moving at 1 m/s, with a mass of 0.3 kg
Kinetic energy = 512.000 J	Kinetic energy = 0.15 J

Key Learning

- To find out what a text adventure is.
- To use 2Connect to plan a story adventure.
- To make a story-based adventure using 2Create a Story.
- To read and understand given code for a text adventure game.
- To debug and improve a text adventure game.

Key Resources

purple mash

2Create a Story

2Connect

Key Vocabulary

Text-based Adventure
A computer game that uses text instead of graphics.

Debug\ Debugging
Fixing code that has errors so that the code will run the way it was designed to.

Sprite
A computer graphic which may be programmed to move on-screen.

Selection
When selection is used, a program will choose a different outcome depending on a condition.

Function
In this context, a section of code that gets run when it is called from the main code. A function in a program is usually a piece of code that gets run lots of times.

Flow of Control
The order that the computer program executes the commands it contains.

Step Through
A way of executing one line of code at a time to help programmers see what happens at each stage of a program. This can be helpful when debugging.

Create an adventure story in 2Create a Story

Plan out your story

Add a button to the story

Add a sprite to the story

Add sound to the story

Choose a background

Undo or redo the last action

Play your text based adventure

What is a text based adventure?

A text based adventure is a type of game that uses text rather than graphics to tell the story. The player normally selects the next move from a series of text based options.

Why is it important to plan a text based adventure?

Text based adventures can often be complicated and give the player lots of options about what to do next. Planning the game ensures the player doesn't make a decision that has no outcome.

Unit: 6.6
Networks

Key Learning

- To learn about what the Internet consists of.
- To find out what a LAN and a WAN are.
- To find out how the Internet is accessed in school.
- To research and find out about the age of the Internet.
- To think about what the future might hold.

Key Resources

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Tim Berners- Lee Profile

Communication Questionnaire

Key Vocabulary

Hub\Switch
The connection point for networks where data packets from many locations converge and are then sent out to different devices.

Network
Several interconnected computers, machines, or operations.

Wide area network (WAN)
A collection of local-area networks (LANs) or other networks that communicate with one another over a large physical area or even globally.

Internet
A global computer network providing a variety of information and communication facilities consisting of interconnected networks using standardized communication protocols.

World Wide Web
An information system on the Internet which allows documents to be connected to other documents by hypertext links, enabling the user to search for information by moving from one document to another.

Local area network (LAN)
A computer network that links devices within a building or group of adjacent buildings, especially one with a radius of less than 1 km.

Router
A device which forwards data packets to the appropriate parts of a computer network.

Wi-Fi
A facility allowing computers, smartphones, or other devices to connect to the Internet or communicate with one another wirelessly within a particular area.

Unit: 6.6
Networks

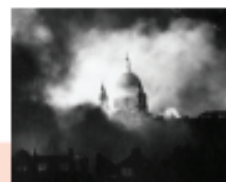**What is the difference between the Internet and the World Wide Web?**

The Internet is a global network of networks while the Web, also referred formally as the World Wide Web (www) is collection of information which is accessed via the Internet.

What is the difference between a LAN and a WAN?

Both are networks that connect computers together. A LAN (Local Area Network) is normally for computers connected less than 1KM distance, whilst a WAN (Wide Area Network) extends over a large geographical area.

Who is Tim Berners-Lee?

Tim Berners-Lee is the inventor of the World Wide Web. The WWW is the system that delivers webpages over the internet.

French

Language: French 🇫🇷
Teaching Type: Progressive Language
Unit: La Seconde Guerre mondiale

Unit Objective:
To be able to use decoding skills to understand better unknown language in French

By the end of this unit we will be able to:

- Group and order words to decode unknown language.
- Understand the key facts of history from WW2 when described in French.
- Say and write in French the key countries and languages involved in WW2.
- Write a letter in French home explaining what life is like as an evacuee living in the countryside.

It will help if we already know:

- The letter sounds (phonics & phonemes) from 'Phonics & Pronunciation' lessons 1,2 & 3.
- Language introduced from Early Learning and Intermediate units.
- How to listen to and approach longer text in French having completed units such as 'Little Red Riding Hood, 'Goldilocks and the Three Bears and 'The Olympics'

Skills we will develop:

To be able to learn effective strategies that will help to decode and understand better unfamiliar vocabulary. Language learning strategies that are transferable and not limited to the language covered in this unit.

Activities we will complete:

A range of activities in all four skills starting with grouping and decoding unfamiliar language based on the key facts of WW2 history. Improving our knowledge of this period of history by completing a map-based activity on the countries and languages as presented in lesson 2. In lessons 3, 4 and 5 learning all about Ralph, Vera and Daisy, the three children living in this period of history. Learning what life was like in London and how life was different in the countryside. Using some of the language we have heard and read to be able to complete the final task: a letter in French, written as a child living during this period of history.

Grammar we will learn & revisit:

Recycling and consolidation of the language learning skills connected to recognising and **categorising** nouns, verbs and adjectives.

Phonics & pronunciation we will see:

Recommended phonics focus: **QU Ç GNE EN AN**

- **QU** sound in **Tchécoslovaquie** & **tchécoslovaque**
- **Ç** sound in **français**
- **GNE** sound in **Allemagne** & **Pologne**
- **AN** sound in **Angleterre, amusant** & **dangereux**
- **EN** sound in **parents** & **enfumé**
- **Silent letters**. The 's' is not pronounced in **français, anglais** and the 'x' is not pronounced in **dangereux**, as with the 't' which is not heard in **et** and **amusant**. This often happens when these letters are the last consonants in French.

Vocabulary we will learn & revisit:

A lot of longer texts with a significant amount of unknown language that describes what life was like in WW2. Much will be unfamiliar language but we will not be expected to retain all of it. All listed on the Vocabulary Sheet.

DT

Structure – Playgrounds

Apparatus	Equipment designed for recreation and play, such as seesaws and swings.
Bench hook	A tool which hooks onto the edge of the workbench. It's used to hold woodwork still when sawing.
Coping saw	A saw with a narrow D-shaped metal blade, used for cutting curves in woods.
Dowel	Wood in the shape of a cylinder. Dowels come in all different sizes and thicknesses.
Jelutong	A type of softwood, it is lightweight, easy to cut and shape.
Mark out	To measure and mark where a piece of material needs to be cut or shaped.
Modify	To change something to improve or fix it.
Natural materials	Materials which come from nature. (e.g. wood comes from trees)
Plan view	A two-dimensional diagram used to describe a place or object from above with annotations and other details such as measurements.
Playground	An outdoor area for children to play in. They usually have different apparatus to play on such as climbing frames and slides.
Prototype	A simple model that lets you test out your idea and how it will look and work.
Reinforce	To make a structure or material stronger, especially by adding another material or element to it.
Structure	Something which stands, usually on its own.
Tenon saw	A saw with a flat blade, used for cutting wood in straight lines or angles.
User	A person that uses something.
Vice	A piece of equipment used to hold an object still while you work on it.

Did you know?

The first children's playground was built in 1859 in a park in Manchester, Great Britain.

Kapow Primary

There are many types of **apparatus** in a **playground**, such as slides, swings, monkey bars, tunnels, see-saws and treehouses. Which do you like?

Coping saw

Hands away from the blade

Vice holding work secure

Remember to fix or hold your wood securely on the **bench hook** or **vice** when sawing, and keep your fingers out of the way of the blade.