

Cars

Past, Present and Future

Debbie Croft



PM

For teachers' inspection ONLY

Cars: Past, Present and Future

Level 29

Running Words 2681 **Text Types** Information Report (Informative) pages 2–17
Exposition (Informative) pages 18–30

Curriculum Areas Humanities – History; Science

Think and Talk About ...

Fact boxes in the book encourage each student to explore the statements further and to share the information with others.

Oral Literacy Focus for Students

Key issues from the text to encourage critical thinking and stimulate group discussions:

1 Explain why many car designs still bear the name of the inventor.

2 Suggest a list of essential items people would have needed in their cars when travelling long distances 100 years ago. Give reasons for these items.

3 Recommend the age at which young people should be allowed to drive cars and the procedures required to obtain a full licence.

4 Design a car that will be able to transport people quickly over vast areas of land and water in the future. Use technology to present the design in 3D format.

5 Prepare a petition to your local council recommending various ways to ease traffic congestion in and around all schools and parks.

Written Literacy Focus for Students

Key issue from the text to present in visual and written form to an audience:

1 Research the topic 'Electric Cars'.

2 Prepare an exposition that outlines the benefits of electric cars as opposed to cars that use fuel.

3 Edit and revise the text.

4 Present your exposition at a meeting organised for parents and the community

5 Critically evaluate your presentation and feedback from the audience

Links with other PM Guided Reading Books and Cards

Level 29	Book	Information Report	*Working at an Airport*
Level 29	Book	Recount/Procedure	*Intrepid Journeys*

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Cars: Then and Now

The motor car is essential to the lives of millions of people around the world. Cars today are very different from cars in the past. Today, a car is a **self-propelled** vehicle, usually with four wheels, that is used as a means of transport.

The development of the car began in the 19th century. The car was developed through a series of designs to create a method of travel that was more efficient than the horse and cart. Some of these early designs were successful and others were unsuccessful.



This early car, from 1905, is a motorised horseless carriage.

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Modern cars are designed to be energy efficient, safe and stylish.

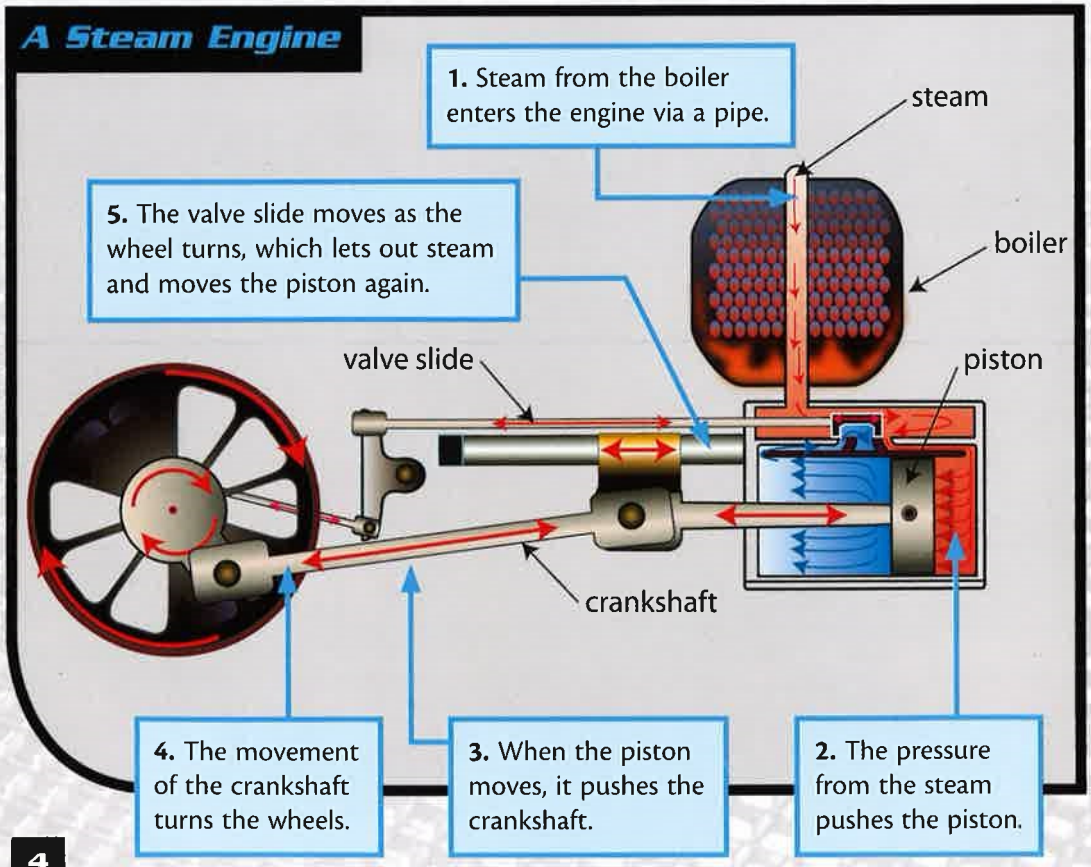
New cars are constantly changing. They have very complex technology and safety systems that make travel more comfortable and less dangerous. The early cars had very few of these design elements. Yet, at the time they were built, the vehicles were believed to be remarkable achievements.

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Types of Engines

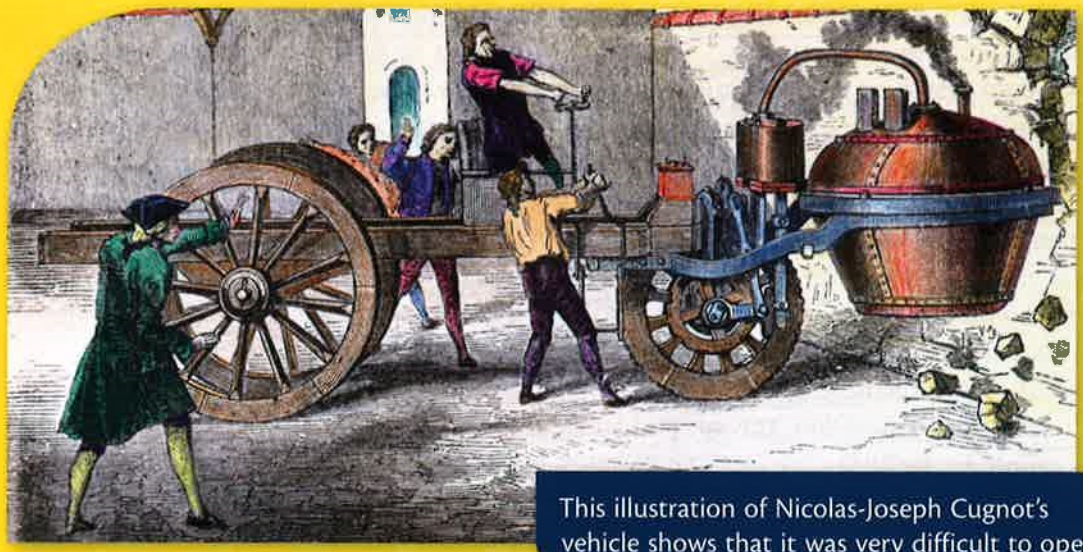
Steam Engines

Steam engines were used to power the first motor vehicles by burning fuel that heated water in a boiler. When the water boiled, it created steam. The pressure of the steam moved **pistons** that turned a **crankshaft**. The crankshaft was connected to the wheels, and made them turn, moving the vehicle forward. As the wheels turned, the valve slide moved to let fresh steam into the engine.



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In 1769, a Frenchman named Nicolas-Joseph Cugnot developed the first self-propelled road vehicle. This was a tractor used by the French Army to carry weapons. It travelled on three wheels at a speed of four kilometres per hour. A steam engine and boiler were placed in front of the vehicle to generate power. However, the extra weight of the engine and boiler on this vehicle made it very **inefficient**. The tractor had to stop every 10 to 15 minutes to build up enough steam power to continue on the next stage of its journey.



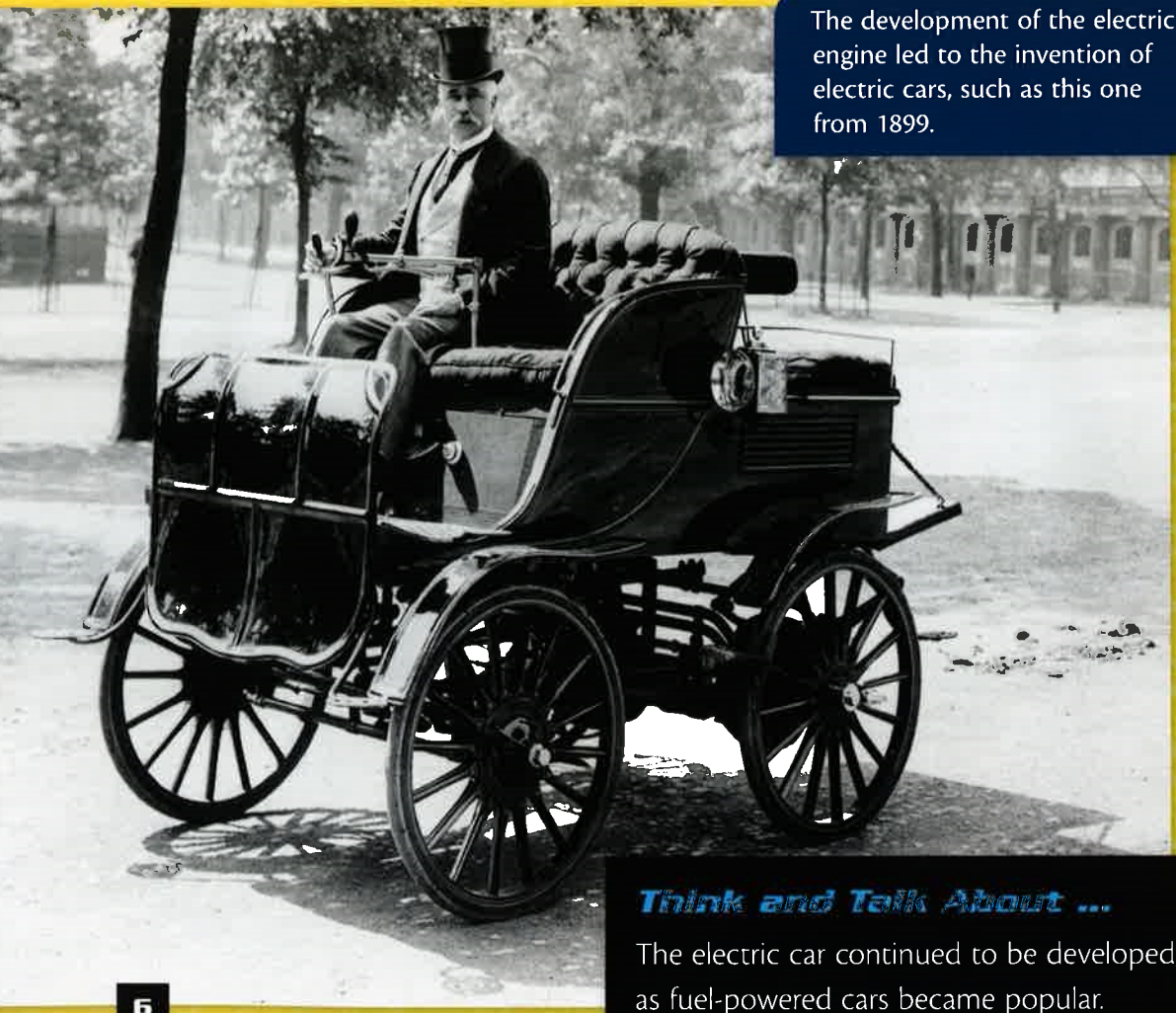
This illustration of Nicolas-Joseph Cugnot's vehicle shows that it was very difficult to operate.

Inventors in America and the United Kingdom designed steam-powered vehicles based on Cugnot's first attempt. From 1820 to 1840, steam-powered stagecoaches (previously horse-drawn vehicles) provided transport around areas of Britain. However, as the railway system grew in popularity, support for steam-powered stagecoaches fell. Inventors then began to develop different types of engines and methods of transport.

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Electric Engines

In the 1830s, electric vehicles were developed. They used batteries to power a small electric motor. During this time, engineer Robert Anderson invented the first electric carriage, by strapping a motor and battery onto a carriage. This method of transport was slow, heavy and expensive. It was only suitable for short journeys.



The development of the electric engine led to the invention of electric cars, such as this one from 1899.

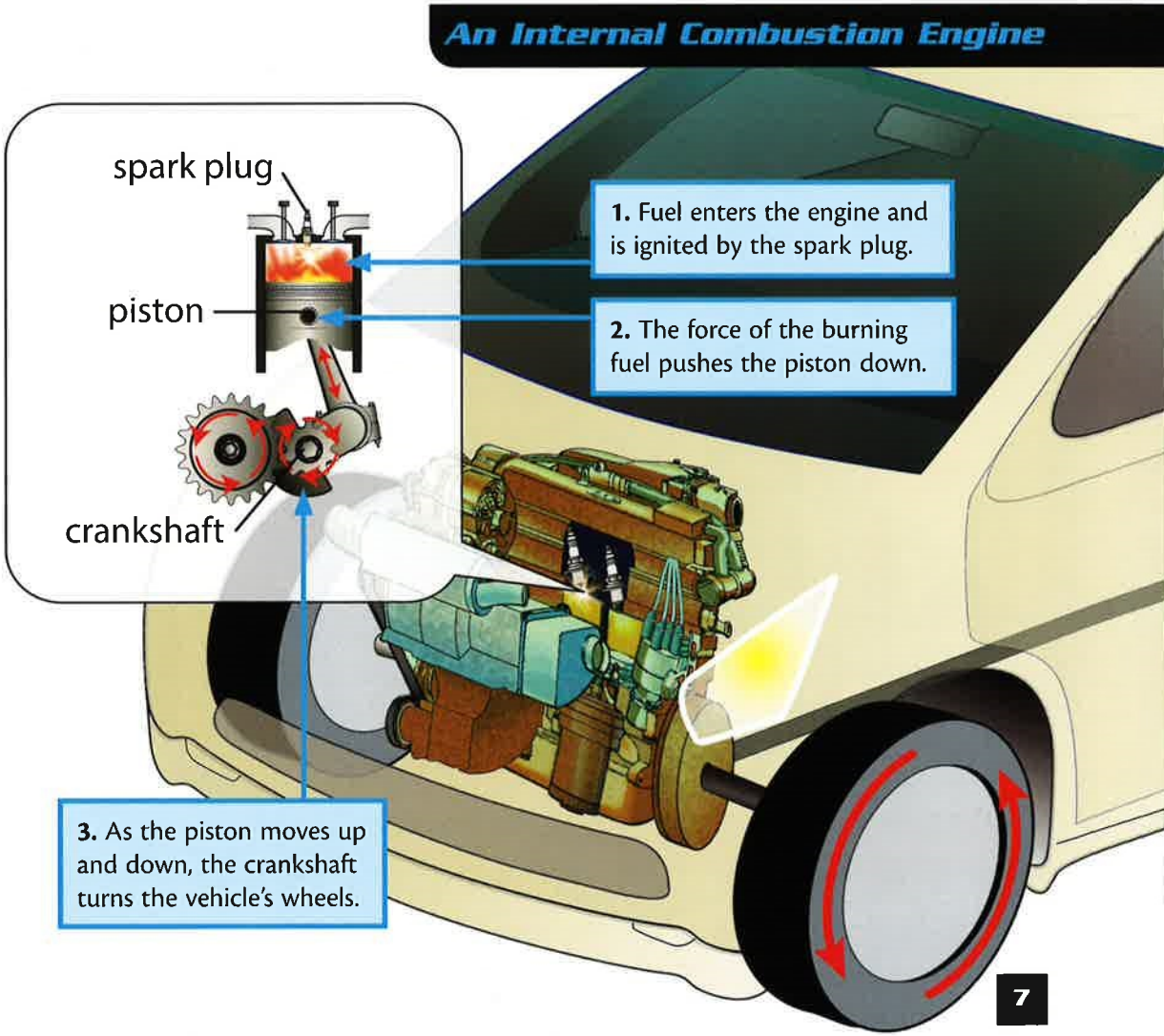
Think and Talk About ...

The electric car continued to be developed, as fuel-powered cars became popular.

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Internal Combustion Engines

The development of the internal combustion engine in the 1860s enabled the motor vehicle industry to grow much faster. The idea of this engine was similar to that of the first steam engine, but instead of producing steam, the pressure was created by burning fuel. The explosion of the fuel moved the pistons, which turned the crankshaft attached to the vehicle's wheels.



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Cars have changed significantly since they were first developed over 100 years ago. Many types of engines and designs have been trialled over the years. However, the engine used in most cars today is based on a design from the late 1800s.

Cars of the future will look very different from cars of the past. Driverless cars are already being developed. These will have a wide range of benefits for many people. The future of the car holds exciting opportunities and challenges for everyone.



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