

Teacher Information Pack

Entry 2 - Level 1



Contents:

English E2: The First Bicycles

English E3: The Pioneers

English L1: Transport Technology

Maths E2: Workdays & Holidays

Maths E3: What Could You Buy?

Maths L1: The Boom In Car Ownership

The first bicycles

Course: English

Teacher information

This activity is designed for learners working at **Entry 2** or above. The questions are based on information in this museum exhibition: **Cycle Pioneers 1868-1900**

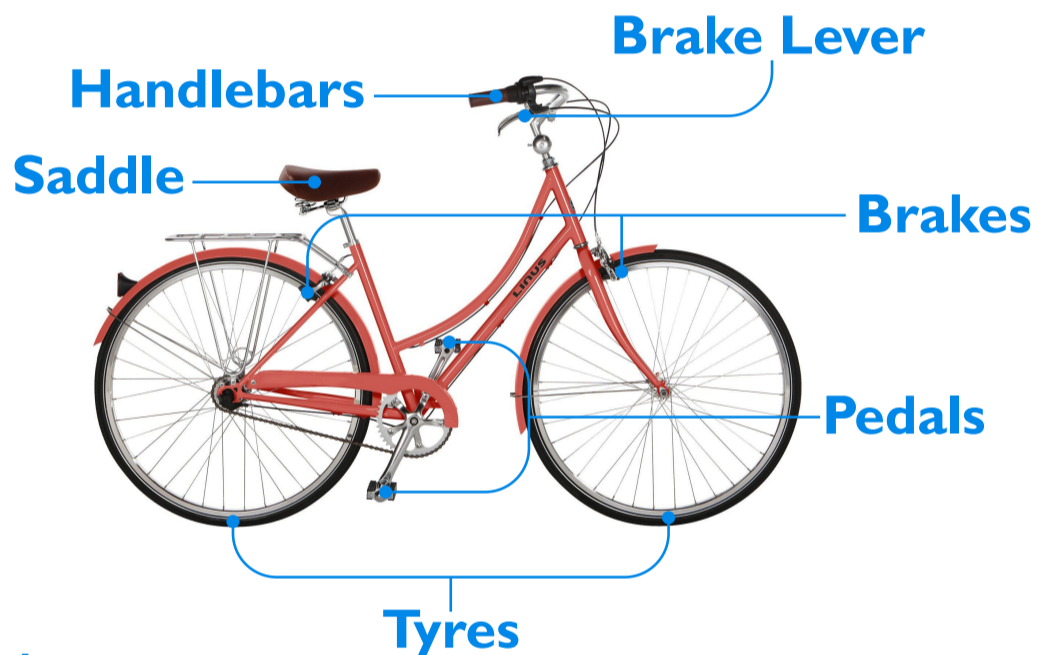
Learners can answer the questions on the **wipeable answer sheet**. There is a **vocabulary** sheet at the front of the pack.

In this activity, learners will practice:

- using illustrations, captions and images to locate information
- understanding the main points in texts
- sequencing words in alphabetical order

Vocabulary

Parts of a Bicycle



Brakes

These help the rider to slow down and stop a bicycle. The rider squeezes a lever on the handlebars to make the brakes work. The brakes squeeze on the wheels to make them stop.

Handlebars

A bar with a handle on each end. The rider holds each end of the handlebars to steer the bicycle.

Pedals

Pedals are platforms that turn mechanisms connected to the wheels of a bicycle. Riders push the pedals around with their feet.

Saddle

The seat that the rider sits on to ride a bicycle.

Tyres

A rubber covering, filled with air, around each wheel of a bicycle. Tyres make the bicycle travel over the ground more easily. They also make a bicycle more comfortable to ride.

The first bicycles invented did not have air-filled tyres.

Answers

1. The first ever bicycle was called the **Hobby Horse**.

Look around the Pioneers exhibition for this bicycle. You can find a picture and the real thing. The Hobby Horse did not have pedals like modern bicycles.

What else was missing from the Hobby Horse?

- A. saddle B. brakes C. handlebars

2. The second type of bicycle was called the **Velocipede**.

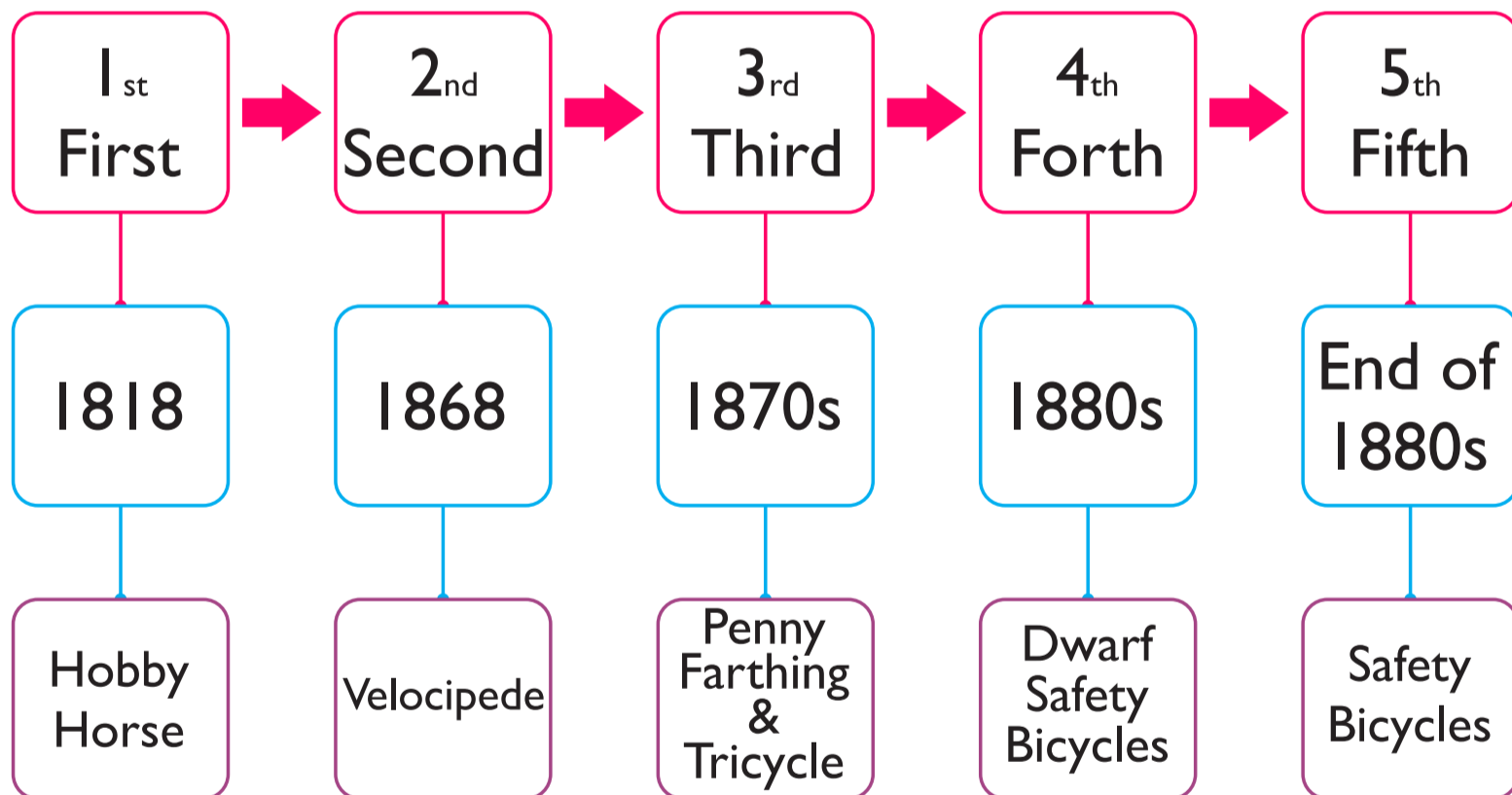
Ask your teacher how to say this word. **Vel-o-sip-eed**

Look for the Velocipede. You can find a picture and the real thing. This new bicycle had parts more like a modern bicycle. Take a good look.

What did it have? Tick the parts.

- A. brakes B. pedals C. tyres

Inventing The Bicycle



3. Look at the timeline 'Inventing the Bicycle'.

By the end of the 1880s there had been five important different bicycle designs.

Look at the names of the bicycles on the timeline.

Find each bicycle in the Cycle Pioneers 1868-1900 exhibition. This can be a real bicycle or a picture.

Which bicycle had one large wheel and one much smaller wheel?

- A. The Hobby Horse B. The Velocipede C. The Penny Farthing D. The Tricycle

4. Which cycle had three wheels?

- A. The Hobby Horse B. The Velocipede **C. The Tricycle** D. The Safety Bicycle

5. Women also rode these early cycles.

Look around the Pioneers exhibition for pictures of women riding cycles.

Write down the names of some cycles that women rode.

Women rode the following types of cycle:

- 1818 Women's Hobby Horse
- 1878 Rotary Tricycle
- 1885 Cheylesmore Tricycle

In the 1880s women wore very large skirts. Tricycles had space between the wheels for these large skirts.

- 1886 Swift Lady's Safety Bicycle

This bicycle had a net guard to stop the women's large skirts getting stuck in the wheels.

6. Look for the 1889 Whippet.

Read the information.

This bicycle did not have air-filled tyres like modern bicycles.

What two things did it have to make it more comfortable for the rider?

The 1889 Whippet had **springs** and **joints** to help give the rider a smoother, more comfortable ride.

7. Put the bicycles from the 'Inventing the bicycle' timeline into alphabetical order.

Remember, if a name has two parts, use the first part.

Dwarf Safety Bicycle
Hobby Horse
Penny Farthing
Safety Bicycle
Velocipede

The Pioneers

Course: English

Teacher information

This activity is designed for learners working at **Entry 3 / Level 1** or above. The questions are based on information in this museum exhibition: **Cycle Pioneers 1868-1900**

Learners can answer the questions on the **wipeable answer sheet**.

In this activity, learners will practice:

- Listening for relevant information and detail
- Spelling words correctly

This activity is based on audio available in the **Cycle Pioneers 1868-1900** exhibition. Audio transcripts are available for teachers on the **Answer** sheet for the activity.

Answers

1. Which two pioneers were friends and came to Coventry together?

- A. Harry Lawson B. William Hillman C. George Singer

2. Which pioneer got orders from wealthy people for a well-finished type of tricycle?

- A. Harry Lawson B. William Hillman C. George Singer

3. Who owned the company that became the largest cycle manufacturer in the world by the late 1890s?

- A. Harry Lawson B. William Hillman C. George Singer D. J.K. Starley

4. Who talks about adding engines to bicycles?

- A. Harry Lawson B. William Hillman C. George Singer C. None of the three

5. Use the answer sheet to complete the table.

Write the name of the pioneer (**Harry Lawson**, **William Hillman** or **George Singer**) next to the type of transport they designed.

Type of Transport	Pioneer(s)
The Kangaroo safety cycle	William Hillman
The Daimler Motor Company	Harry Lawson
Challenge Cycles	George Singer
The Premier Cycling Company	William Hillman
Safety Cycles (late 1880's)	William Hillman George Singer

6. Taking risks

a) Which pioneer describes himself as a risk-taker?

Harry Lawson describes himself as someone who took a few risks.

b) What word does he use to describe himself? m Look up the correct spelling when you get home or back to college.

He describes himself as an '**entrepreneur**'. An entrepreneur is the owner or manager of business who makes money through taking risks and/or using initiative.

c) Can you think of any business people today who might describe themselves in the same way?

Some modern entrepreneurs you might have thought of are:

- Richard Branson (Virgin)
- Lord Alan Sugar
- Simon Cowell (X-Factor)
- Bill Gates (Microsoft)
- Mark Zuckerberg (Facebook)
- Octavia Hill (National Trust)
- Rosalind Franklin (Scientist)

7. Practise your spelling

Listen for the sentences written on the **answer sheet**.

Write down the missing words.

Think about the correct spelling for each missing word.

a) Harry Lawson

I **designed bicycles** but I also opened the first car factory in Coventry.

I **found** an old factory and renamed it Motor Mills and it was **there** that we first started making motorcars.

b) William Hillman

It gives me a lot of **pleasure** to **know** that **there** were still cars being made with my name on up to 1951.

c) George Singer

We got married and I went into **business** with her dad.

We soon got a **reputation** for our **beautifully** finished Challenge Cycles and Tricycles.

From about 1900, we were experimenting with adding motors. First, we **attached** them to cycles and tricycles, then we started adding them to cars.

Audio transcripts

My name is **Harry Lawson**.

I designed bicycles but I also opened the first car factory in Coventry. By the time I came here in 1878, I'd already patented my own safety cycle. J.K. Starley was developing very similar ideas to mine, but I think I got in there first. After that, I launched another of my designs – the bicyclette. Sadly, it never caught on whereas J.K. Starley's did.

Anyway, after that I got more interested in motorcars. I set up the Daimler Motor Company to manufacture Daimlers in Britain. I found an old factory and renamed it Motor Mills - and it was there that we first started making motorcycles and motorcars. And, I did a lot to promote the new industry. In 1896, it was me who came up with the idea of a London to Brighton run and it's still happening today. It's true I made a lot of money and I lost a lot along the way. I even went to jail. But if you're an entrepreneur, you have to take a few risks – don't you?

My name is **William Hillman**. I was there at the very start of the cycle industry in Coventry. In the late 1860s, I came up to Coventry with George Singer. We'd both been apprentices, down South – we even went bell ringing together in Lewisham. The only type of bicycle in production was the Penny Farthing, but in the late 1880s, we started making a much better bicycle – the Safety Bicycle. We called one of our safety bicycles the 'Kangaroo'. Although it still had the big front wheel and the small back wheel like the Penny Farthing, it had gearing – making it easier to pedal and the rider didn't have to sit up so high which was much safer.

By 1896, my company, The Premier Cycling Company, was the largest cycle manufacturer in the world – I got rich because of it. But, motorised transport was coming along and Coventry was at the forefront of it all. So, we started making motorbikes and motorcars in the early years of the twentieth century. It was all long after my time of course but it gives me a lot of pleasure to know that there were still cars being made with my name on up to 1951 – the Hillman Avenger.

George Singer

I came here with my friend William Hillman and we both worked at The Coventry Machinists Company. Our bosses were Josiah Turner and James Starley - so we both learned a lot about the new cycle trade. At the time, we were still making Velocipedes, a very early bike design. I met a nice young lady in Coventry. We got married and I went into business with her dad. Our company was called Singer and Co. and by then we were making Penny Farthings. We soon got a reputation for our beautifully finished Challenge Cycles and Tricycles. We got plenty of orders from nobility and gentry for those.

By the late 1880s, we were making Safety Cycles – based on J.K. Starley's revolutionary design. We did very well out of it. I was able to build a grand house for my family – Counden Court – about a mile away from my friend William Hillman's mansion in fact. And in 1891, I became Mayor of Coventry – not bad for a boy from Dorset eh?

From about 1900, we were experimenting with adding motors. First, we attached them to cycles and tricycles, then we started adding them to cars. There were cars with my name on them right up until 1970.

Transport Technology

Course: English

Teacher information

This activity is designed for learners working at **Level 1** or above. It is suitable for some learners working at **Level 2**.

The questions are based on information in this museum exhibition: **Transport Technology**

Learners can answer the questions on the **wipeable answer sheet**.

In this activity, learners will practice:

- understanding and using organisational features to locate relevant information
- reading and understanding specialist words in context
- using knowledge of punctuation to help understanding
- spelling words correctly.

Answers

Look around at the information on the **wall displays**.

1. What is the general text type of the information?

- A.** Informative/descriptive **B.** Informative/instructive **C.** Informative/narrative

2. The information contains a lot of specialist transport vocabulary.

What is another word (adjective) for 'streamlined' in this context?

- A.** Efficient **B.** Modernised **C.** Aerodynamic

Look at the wall display '**Technological Firsts**' to answer questions **3** and **4**.

3. How is the information organised?

- A.** In chronological (date) order **B.** By technological advances **C.** By style/design features

Dates are included in the information but it is not organised chronologically. It is organised by innovations (technological advances).

4. Which of these advances came first?

- A.** Power steering (1951) **B.** GPS navigation (1995) **C.** ABS brakes (1978) **D.** Air bags (1973)

Note: The dates have been added on the answer sheet and are not printed as part of the question

What is the quickest way to find the answer? **Note down your method.**

The quickest method, using the organisational features of the wall chart, is to scan read for each innovation/advance. Then, note down the year of each innovation and order (chronologically) to see which came first.

5. Homophones

All the words in the table on the **answer sheet** are in the wall displays. They are all homophones.

Homophones are words that sound the same but have a different spelling.

Work with a partner to think of another word for each word in the table. The new word must sound the same but have a different spelling. The first row is completed as an example.

You can look for each word in the exhibition to see it used in context.

brake (verb)

To slow something down (using brakes)

break (noun)

a gap, or interruption, in something

break (verb)

to separate into parts; to force entry into
(This verb has many different meanings. Check your dictionary for more and to check your own definitions.)

steal (verb)

to take without permission

peddle (verb)

to travel around selling something

tire (verb)

to become weary of something

Homophone Pairs			
Word	Meaning	Word	Meaning
weigh (verb)	To measure how heavy someone / something is	way (noun)	a route; a course of action; a method of doing something
brake (noun)	Part of a car or bike that helps it to stop		
steel (noun)	A type of metal		
pedal (noun)	Part of a bike that makes the wheels turn		
tyre (noun)	A rubber, air-filled covering around the wheel of a car / bike		

6. Read and compare

Find and read the information panels on **Transport Technology** and **Alternative Fuels** and then answer the questions.

a) **Which text uses commas to separate items in a list?**

Alternative Fuels

(These fuels are made from biomass (including vegetable oils, animal fats, sugar and starch from crops) or bio-waste (waste, cooking oil etc).

b) **Which text uses past, present and future tenses?**

Transport Technology

Sentences 1, 2 and 3 are in a past tense.

Sentence 4 is in the present tense.

Sentences 5 and 6 talk about the future.

c) Which text uses rhetorical questions?

Transport Technology

But at what cost?

So, what's going to happen in the future?

Will cars become greener or will bicycles make a comeback?

A rhetorical question is a question that does not have an expected answer. It is asked for a specific effect. In this context, the rhetorical questions are designed to make the reader think and reflect on what might happen in the future.

d) One text has a sentence where a full stop could be correctly replaced by a colon.

Alternative Fuels (Sentence 2)

Here are some of the options.

Could also be:

Here are some of the options:

7. Prefixes

Reminder: Prefixes are letters added to the beginning of word that can change its meaning.

Some common prefixes are:

Prefix	Meaning	Examples
ir- il- im- un- dis-	not	illegal irregular impossible unnecessary disapprove
de-	undo remove	deflate detangle
in-	not into	insane inside
ex- e-	out of from	export expand
mis-	wrong	misunderstand misspell
anti-	against	anticlockwise antifreeze

Find and read the information panel on **Electric Cars** and answer the questions.

a) Read the text.

Are electric cars an answer to the issue of global warming? Explain why.

Electric cars are a partial answer to global warming as they cut down climate-changing emissions. However, they have their own issues because they need power to charge their batteries. This power currently needs to come from power stations that have their own climate-changing emissions.

b) Find a word in the text where changing the prefix would give a different word with the opposite meaning.

The word internal could be changed to external.

c) Another word in the text that begins with a prefix is 'emissions'. The prefix e- means the same as the prefix ex-.

Use the meaning of the prefix to work out the meaning of 'emissions'.

Write down your definition.

emissions - substances, sent out or given off E.g. The new laws are intended to reduce harmful emissions.

d) Work with a partner.

Try to think of some other words that begin with the prefix e-.

Some possible words that learners might think of include the list below. Other words are possible.

- erupt
- emerge
- eject
- elope
- evict
- erode
- erase
- elude
- emigrate

Workdays & Holidays

Course: Maths

Teacher information

This activity is designed for learners working at **Entry 2** or above. The questions are based on information in this museum exhibition: **Workdays & Holidays**

Learners can answer the questions on the **wipeable answer sheet** and use the blank space for any working out.

In this activity, learners will practice:

- adding, subtracting and dividing
- recognising and naming 2D and 3D shapes
- describing the properties of common 2D and 3D shapes
- reading time (on analogue clocks)

Introduction

Go to this exhibition to answer the questions: **Workdays & Holidays**

You can answer the questions on the **wipeable answer sheet**.

Use the blank space on the **answer sheet** for any working out.

Answers

1. Look around for the red **Royal Mail van**. There is a label on the side of the van. It reads 'Coventry Transport Museum'.

The label is a **rectangle**.

The Coventry Transport label is a rectangle because: (Tick all correct answers.)

A. It has six sides. **B.** It has two faces. **C.** All the corners are right angles. **D.** The opposite sides are parallel.

2. Look around for the **Modec delivery van**.

This van was powered by electricity. This is a **2008** model.

The first model was made in **2006**. In 2011 the van stopped being made. The company went out of business.

For how many years was the van made?

A. 2 years **B.** 3 years **C.** 4 years **D.** 5 years

3. Look for the 1972 Morris Minor Postal Delivery Van.

Look at the pictures.

The **top speed** of the 1972 Morris Minor Postal Delivery Van was 60 miles per hour (mph).

Is this faster or slower than the 2008 Modec Van?

Complete the sentences on your answer sheet.

The 1972 Morris Minor Van is **faster** than the 2008 Modec Van.

The difference in top speed is **10** miles per hour (mph).

4. The pictures show a wheel on the Massey Ferguson Tractor.

Each wheel has **eight nuts** to hold it in place.

What shape is each nut?

A. a sphere **B.** a pentagon **C.** a hexagon

5. Look for the 1973 Daimler Fleetline Bus.

This bus was made in 1973, but was painted in this sky-blue colour to take part in the victory parade for Coventry City's 1987 F.A. cup win.

a) The bus could seat 30 people on the lower floor and 44 on the upper floor.

How many people could sit in the bus altogether?

$$44 + 30 = 74$$

74 people could sit on the bus all together

b) The top floor of the bus has 44 seats.

If 14 seats are empty, how many people are sitting on the top floor?

$$44 - 14 = 30$$

30 people are sitting on the top floor

c) The bottom floor of the bus can seat 30 people.

If 15 people are sitting on the bottom floor, is it correct to say that the bottom is half-full?

Yes, it is correct.

The bottom floor of the bus can seat 30 people.

15 people are sitting on the bottom floor. 15 is half of 30.

d) The top floor of the bus can seat 44 people.

How many families of four can sit on the top floor?

$$44 \div 4 = 11.$$

11 families of 4 can sit on the top floor of the bus.

6. Look around for the **2002 Massey Ferguson Tractor**.

The tractor you find should look like the picture.

It has a large **exhaust pipe**.

What shape is the exhaust pipe?

- A.** a cone **B.** a cylinder **C.** a pyramid

7. Look for the **clock tower**

a) **What type of clock is this?**

Analogue or **Digital**?

b) **What time does the clock show in the picture (to the nearest quarter of an hour)?**

The time is a quarter past eleven



c) **What time does the clock show (to the nearest quarter of an hour)?**

The time is a quarter to five



d) **What time does the clock show (to the nearest quarter of an hour)?**

The time is twelve o'clock.



e) Martha starts work at half past nine. The journey takes 15 minutes walking.
What time should Martha leave home?

Martha should leave home at a quarter past nine.

f) Ali finishes work at 5 o'clock. The bus journey home takes 30 minutes.
What time does Ali get home?

Ali gets home at half past five.

What Could You Buy?

Course: Maths

Teacher information

This activity is designed for learners working at **Entry 3** or above. The questions are based on information in this museum exhibition: **A Industry 1900 -1914**

Learners can answer the questions on the **wipeable answer sheet** and use the blank space for any working out.

In this activity, learners will practice:

- rounding (numbers less than 1000 to the nearest 10 or 100)
- adding and subtracting (using 3 digit whole numbers)
- multiplying (2 digit whole numbers by single digit whole numbers)
- dividing (3 digit whole numbers by single and double digit whole numbers)

Introduction

Go to this exhibition to answer the questions: **A New Industry 1900 - 1914**

You can answer the questions on the **wipeable answer sheet**. Use the blank space for any working out.

Try to use **rounding** to check your answers to the questions in this pack.

Rounding is putting a number up or down to make it easier to do calculations in your head.

Rounding examples:

You are thinking about whether you can afford to buy a new phone.

You might say it costs £190 when the actual price is £188. You have rounded the price up to the nearest £10.

Or you might say it costs £200. You have rounded the price up to the nearest £100.

Or, if the phone costs £182, you might say it costs £180. You have rounded the price down to the nearest 10.

Answers

1. Find the **1912 Siddeley-Deasy**.

Only very rich people could afford models like this one as it cost £974 new.

Round the cost of this car to the nearest 10. What is the correct rounded cost?

- A.** £970 **B.** £980 **C.** £1000

2. £974 was a lot of money in 1912 when an average sized-house cost £235.

So, the 1912 Siddeley-Deasey was much more expensive than an average house.

How much more expensive?

- A.** £ 730 **B.** £739 **C.** £745

3. Find the **1906 Rover Tourer**.

This car cost £120 new. It's much cheaper than the Siddeley-Deasy but most people would still need to save up to buy it.

Imagine you are a teacher in the early 1900s and you can save £20 each year.

How many years do you need to save to buy this car?

- A. 3 years B. 4 years C. 5 years **D. 6 years**

4. The 1906 Rover Tourer had a top speed of 24 miles per hour.

Imagine that you are:

- driving at 24 miles every hour
- your journey is 96 miles

How long will your journey take?

- A. 40 minutes B. 1 hour C. 3 hours **D. 4 hours**

5. Find the **1908 Hillman Coatalen Motorcar**.

This car cost £298 new.

£298 was three times the yearly wage of a factory worker in 1908.

How much did a factory worker earn in 1908?

Use rounding to 100 to estimate an answer to this question.

£100 (£298 rounded to the nearest 10 = £300. $£300 \div 3 = £100$)

6. In 1908, people worked up to 12 hours a day in Coventry's car factories.

Look around and see if you can find any information about working hours.

Imagine you are a car factory worker in 1908. Your working hours are 12 hours a day Monday to Friday and 5 hours on Saturday morning.

What are your total weekly hours?

65 hours ($12 \times 5 = 60$ $60 + 5 = 65$)

7. William Hillman is a rich factory owner.

In 1913, he can afford to buy the following models of motor vehicle for his family and staff.

2 1913 Premier Motorcycles: **£54 each.**

2 1913 Swift Cyclecars: **£148 each.**

4 1913 Rover Bicycles: **£8 each.**

Round the cost of each item to the nearest 10. Then multiply by the quantity shown and then give your estimate of the total bill.

Rounded costs: Premier Motorcycles £50 Swift Cyclecars £150 Rover Bicycles £10

Estimated Total: £440 = $(50 \times 2) + (150 \times 2) + (10 \times 4)$

What was special about the 1913 Rover Bicycle?

The 1913 Rover Bicycle was special because it was made for women to ride. It had these special features:

- a dropped cross bar (to help women get on and off easily)
- a skirt guard on the back wheel (to stop the women's long skirts getting caught in the back wheel).

The Boom In Car Ownership

Course: Maths

Teacher information

This activity is designed for learners working at **Level 1** or above. Some learners working at higher **Entry Level 3** may also be able to use this pack. The questions are based on information in this museum exhibition:

The Growth of the Motor Industry 1918 -1939

Learners can answer the questions on the **wipeable answer sheet** and use the blank space for any working out.

In this activity, learners will practice:

- reading, writing and comparing large numbers
- multiplying and dividing (whole numbers and decimals)
- using simple formulae for one step operations

Introduction

Go to this exhibition to answer the questions:

The Growth of the Motor Industry 1918 -1939

You can answer the questions on the **wipeable answer sheet**.

Use the blank space on the **answer sheet** for any working out.

British prices became **decimal** in 1971.

The types of transport shown in this part of the museum are from between the years **1918–1939** and so the prices are shown in pounds and shillings (£s) instead of pounds and pence (£p).

QUESTIONS

1. Find the **1926 Humber bicycle**.

Find the price on the display.

What is one shilling in pence?

Use the information on the display to work it out.

- A.** 5 pence **B.** 8 pence **C.** 40 pence

2. Now look for the **1921 Kenilworth Motor Scooter**.

Guineas were used until British prices became decimal (1971).

A guinea is one pound and 1 shilling (£1.1s)

Find the price of the motor scooter.

What is the price in £ and p?

Use your answer from question 1 to work it out.

- A.** £ 13 .05p **B.** £13.40p **C.** £13.65p

Car ownership increased massively between 1918 and 1939.

This was largely because of mass production.

3. Look around the exhibit.

How many cars were on the road by 1939?

- A. 100,000 B. 1,000,000 C. 200,000 D. 2,000,000

In 1930 the speed limit was 20 miles per hour. This limit was scrapped because motorists did not follow it and it became too difficult to enforce.

4. In 1934 motorcars killed 7,343 people.

What does the 4 in this number represent?

- A. 4000 B. 400 C. 40 D. 4

In 1935 the speed limit was re-introduced because of the large number of road deaths.

5. Look around the exhibition.

a) What was the new speed limit?

In 1935 the speed limit was increased to 30 miles per hour.

b) Compare the figures.

In 1934 motorcars killed 7,343 people – half of them pedestrians.

In 2016 in Great Britain the number of road deaths was 1,792.

Choose the correct words to complete the sentences.

The number of road deaths has **decreased** since 1934.

The decrease is **more** than 50%.

6. James owns a **1930 Standard Swallow**. Have a look around and find this car

a) The Standard Swallow has a top speed of 55 miles per hour but James likes to drive below the speed limit.

Write down three more facts about this car.

Any three facts from:

- Art Deco look
- Built by The Standard Company
- 1141cc/9hp engine
- Cost £250
- Body designed and built by SS Cars

b) James drives at an average speed of 30 m.p.h. for 4 hours.

How far has he travelled?

$30 \times 4 = 120$ miles travelled

7. Rose owns a **1931 Hillman Minx**. Have a look around and find this car

a) Write down three facts about the 1931 Hillman Minx that include numbers.

Any three facts from:

- Cost £159 new
- 1180cc
- 4-cylinder side valve
- Top speed 50 m.p.h
- Chassis number M1 and engine number M1 – both meaning Minx I

b) Rose drove 140 miles in 5 hours. Did Rose break the new 1935 speed limit?

(Look at your answer to question **5a** for the 1935 speed limit.)

$140 \text{ miles} \div 5 = 28 \text{ m.p.h.}$

The speed limit in 1935 was 30 m.p.h.

Rose did not break the speed limit (assuming she drove for 5 hours at a constant speed).