



Road Safety Week 
19–25 November 2018

Educational resources for upper primary (ages 7–11 - Key Stage 2)

Coordinated by



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Road Safety Week

19–25 November 2018

Introducing Road Safety Week

For Road Safety Week 2018, we are shouting out about the safety of those on two wheels, and encouraging everyone to be Bike Smart. We can all play our part in raising awareness about the importance of protecting those on bikes and this year we are asking drivers to be Bike Smart by looking out for those on two wheels, driving safely and slowly and giving riders plenty of space; cyclists to be Bike Smart with safe riding behaviours and appropriate training and equipment; and policy-makers to be Bike Smart by mandating life-saving technology and prioritising cycle-friendly infrastructure.

See the accompanying factsheets and other resources in your Road Safety Week action pack for further information on cycling safely.

Brake recommends that children under 10 should never cycle on the roads, and that older children should use quiet routes away from traffic where possible. You can use Road Safety Week as an opportunity to remind children about the health and environmental benefits of cycling and to engage with them about key cycling safety messages.

It's an ideal time to reinforce other key road safety messages too. **You can use Road Safety Week as an opportunity to remind children to look and listen carefully before crossing roads in safe places, and to reinforce the message that younger children should always hold an adult's hand when crossing a road.**

The lesson plans

There is a real need for all those involved with children to teach clear road safety messages effectively and consistently, working together to help children understand and manage risk. The lesson plans in this pack incorporate various teaching strategies and will help you to achieve your learning goals for English, maths, history, PSHE and art.

These lessons could be incorporated throughout Road Safety Week and delivered over five days.

- Lesson 1:** English — Studying non-fiction texts about cycling and identifying the techniques authors use to inform their audiences
- Lesson 2:** Maths — Learning about angles by looking at different parts of a bicycle
- Lesson 3:** History/ICT — The history of how bicycles and road safety have evolved over time, and how these changes have affected attitudes to cycling
- Lesson 4:** PSHE — The ideal safety features that cyclists need on roads and the environmental and health benefits of cycling
- Lesson 5:** Art — Designing a cycling helmet or a poster promoting the benefits of cycling

Lesson 1: English

Lesson overview

The class will identify the differences between fiction and non-fiction and study several non-fiction texts about cycling. Pupils will explore the techniques authors use to inform, advise and persuade their readers and will develop their ability to use these techniques themselves.

Aim

To teach children about writing non-fiction by examining texts and producing their own

Objectives

- Identify the techniques used to write non-fiction texts
- Utilise these techniques to produce own non-fiction texts

Programmes of study

English

- To plan, draft, revise and proofread an informative leaflet about the benefits of cycling using the conventions of writing non-fiction

Preparation

Print out the non-fiction texts provided on pages 9-14 of this resource pack for each group of three to five children. Each group discusses the same set of texts.

Lesson outline

1. Ask the class to provide examples of different kinds of writing and make a list of these. For each one they will have to decide as a group whether the text is fiction or non-fiction, and give their reasons. Approximately 5 minutes.

Below are some examples of fiction and non-fiction texts the children could suggest.

Fiction

- Story books
- Comics
- Film scripts
- Plays

Non-fiction

- Newspapers
- Textbooks
- Biographies/autobiographies
- Magazines
- Instruction manuals

2. Explain that they are going to be working in groups to examine a set of non-fiction texts and discuss what each one is trying to achieve, and how it is trying to achieve it. Distribute the non-fiction resource sheets found on pages 9-14 of this resource pack. The groups should consider the kind of language being used, the presence or lack of images, whether it is a personal story and how the text has been structured on the page. Approximately 15 minutes.

3. Ask the pupils to present their answers as a group to the rest of the class. Ask them how they made their decisions, giving their reasons. Approximately 10 minutes.

4. Come together for a class discussion. Establish some of the common features of the non-fiction texts and how the authors are trying to inform their audience. These should include:

- Using facts to inform
- Using photos or diagrams to illustrate facts
- Might use subheadings to organise text
- Might use bullet points to break up text
- Might use an introduction to give useful background information
- Written in the present tense — unless the author is explaining something that happened in the past

Approximately 10 minutes.

5. Ask the children to write a few paragraphs for a non-fiction leaflet about some of the benefits of cycling. They could refer to the information included in the texts they have already examined, or you could provide them with more details from the Bike Smart fact sheet provided in your Road Safety Week action pack. You could use some of the following facts:

- Exercise makes people happier. YMCA research found people with active lifestyles say their wellbeing is around a third higher than people who don't regularly exercise.
- After exercise, blood flow to the brain increases by 30-40%, which can lead to increased brainpower. Teachers report that children who cycle to school are more attentive and achieve better than children who are driven in cars.
- Cycling helps to build muscles and get rid of fat. Cycling for an hour can burn between 400 and 1,000 calories.
- Cyclists have healthier lungs than people who use other forms of transport. Riders experience five times less pollution than drivers in busy cities.
- Cycling is better for the environment than driving. More than a quarter of greenhouse gas emissions come from cars and other vehicles.

6. In their groups, ask the children to assess the effectiveness of their own and others' writing and suggest further improvements; propose changes to grammar and vocabulary; proofread for spelling and punctuation.

Extension

Ask the pupils to think about how they could include visual elements in their non-fiction writing to improve its impact. Ask them to design a leaflet containing this information.

Additional activity – Years 5 and 6 (ages 10-11)

Ask the children to write a letter to their local MP, using persuasive writing techniques to highlight the benefits of cycling and call for improved safety measures such as more cycle paths and lower speed limits in places where people cycle. Further information on these areas can be found in the Bike Smart fact sheet provided in your Road Safety Week action pack.

Lesson 2: Maths

Lesson overview

The class will learn to identify right angles, acute angles and obtuse angles by studying the shapes found on a bicycle.

Aim

To understand the relationships between angles in various shapes, including straight lines, triangles and circles

Objectives

Years 3 and 4 (ages 7-9)

- To be able to recognise right angles and identify other kinds of angles in triangles

Years 5 and 6 (ages 10-11)

- To find missing angles in straight lines, triangles and circles by using knowledge of known angles

Preparation

Print out the appropriate angles worksheet(s) for the children you are working with, with enough for each child or group if working in groups. These can be found on pages 16-18.

- How many right angles would someone turn if they cycled from home to school on the cycle path? (Answer: eight)
- How many right angles would someone turn if they cycled to school on the roads? (Answer: four)

Discuss the routes to school with the class. Mention that even though the cycling route might be longer and have more turns, it would be safer because it is away from traffic.

Approximately 10 minutes

Acute and obtuse angles

1. Explain that if an angle is more than 90 degrees it is called an obtuse angle, and if it is less than 90 degrees it is called an acute angle. Show the class various angles around the classroom and get them to identify each one as a right angle, obtuse or acute angle. Approximately 10 minutes.

2. Using the map of a cycling route to school, ask the class the following questions:

- What kinds of angles are inside the triangular road signs? (Answer: acute angles)
- What kind of angles are on the pictures inside the road signs (Answer: acute and obtuse angles)
- What angles would they turn if cycling on the cycle path to school? (Answer: right; right; right; right; obtuse; obtuse; right; right; obtuse; obtuse; right; right)

3. Provide the pupils with the Angles worksheet 1 included on page 16 of this resource pack. Ask them to label each angle as an obtuse angle, acute angle or right angle.

Approximately 10 minutes.

Answers:

- Right angle
- Acute angle
- Obtuse angle
- Acute angle
- Obtuse angle

Come together for a class discussion and compare results between students.

Lesson outline: Years 3 and 4 (ages 7-9)

Introducing angles

1. Explain to the class that an angle is a measure of a turn. Get them to stand up and practise making quarter turns, half turns, three-quarter turns and full turns. Explain that angles are measured in units called degrees and that a quarter turn measures 90 degrees, a half turn measures 180 degrees, and so on. Approximately five minutes.

2. Explain that angles are formed where two lines meet at a point, and that when straight horizontal lines meet straight vertical lines to form a corner it is called a right angle. Ask the children if they can point out anything in the classroom that has a right-angle corner – the edge of the table, a book, the smartboard, etc. Ask if they remember how many degrees there are in a right angle (90 degrees). Approximately five minutes.

3. Show the class the map showing a journey to school, which is on page 15 of this resource pack. Based on this resource, ask the children the following questions:

Lesson 2: Maths

Lesson outline: Years 5 and 6 (ages 10–11)

Missing angles (Part 1)

1. Remind the class that angles on a straight line always add up to 180 degrees, and that to calculate an unknown angle on a straight line they need to subtract (take away) the known angle from 180.
2. Explain that angles in a triangle always add up to 180 degrees, and that to calculate an unknown angle on a triangle they need add up the known angles and subtract the total from 180.
3. Remind the class that missing angles in intersecting lines always add up to 360 degrees, and that opposite angles in a cross will always be equal. To calculate an unknown angle in intersecting lines they need to add up the known angles and subtract the total from 360.
4. Ask the class to complete the first four questions on Angles worksheet 2 (Part 1). This is included on page 17 of this resource pack. Please note: the angles on the worksheets are approximated and should not be used for measuring with protractors.

Answers:

- A. 105
- B. 40
- C. 70
- D. 100

Come together for a class discussion and compare results between students.

Missing angles (Part 2)

1. Remind the class that all the angles in a triangle add up to 180 degrees, and that to calculate an unknown angle they need to add up the known angles and subtract the total from 180.
2. Explain that angles in quadrilaterals always add up to 360 degrees, and that to calculate an unknown angle they need to add up the known angles and subtract the total from 360. Ask the class to complete the remaining questions on Angles worksheet 2 (Part 2), which can be found on page 18 of this resource pack. Please note: the angles on the worksheets are approximated and should not be used for measuring with protractors.

Answers:

- E. 65
- F. 151
- G. 53
- H. 104

Extension activity

Show the class the three-seater 'trandem' bike included at the bottom of Angles worksheet 2 (Part 2). Discuss with them some of the possible safety issues on a bike like this, such as the need to be more careful not to overbalance it, or one person having to do all the steering. Ask the children to use their knowledge of angles in straight lines, triangles and quadrilaterals to find as many missing angles as they can.

Answers: A. 82 B. 76 C. 127 D. 87 E. 71 F. 53 G. 93 H. 109 I. 64 J. 60 K. 120 L. 51

Lesson 3: History/ICT

Lesson overview

The class will explore elements of road safety history, focusing on how attitudes to cycling have changed over the years and the measures that have been introduced to protect vulnerable road users.

Aim

To understand how roads have changed to improve safety for cyclists, and how bicycles have evolved to become safer over time

Objective

To understand some of the major turning points in the history of transport safety, with the development of new vehicles and laws and changing attitudes towards cycling

Programme of study

History

- A study of an aspect or theme in British history that extends pupils' knowledge beyond 1066

ICT

- To understand the opportunities the Internet offers for communication and collaboration
- To use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

Preparation

Print the pages from the 'Cycling through time' resources found on pages 23–26 of this resource pack, with enough copies for each group of three to five children. Prepare a copy of the cycling safety timeline for yourself, found on pages 19–22.

Lesson outline

Whole class discussion

Ask the class for their ideas about what roads were like 200 years ago and how they may have changed since 1818 to become safer for cyclists. Ask why these changes were needed and discuss their answers. Ask if they know when bicycles were first invented.

Group activity

Working in groups, ask the class to arrange the non-timeline pages from the 'Cycling through time' resource in the right order. These are found on pages 23–26 of this resource pack.

Whole class activity

Discuss the results as a class and show the correct order. Discuss the developments the children consider to be the most important.

Alternative activity – Years 5 and 6 (ages 10–11)

After the initial class discussion, explain to the children that they will be using the Internet to research changes in cycle design, road safety and attitudes to cycling over the last 200 years, and will be using the information they find to create a PowerPoint presentation about a certain element of cycling history. Share some of the pages from the 'Cycling through time' resource to give the children some inspiration for areas to research. Ask them to find out information about their chosen area including the following:

- What were the main developments in cycling safety at that time?
- How safe were roads at that time?
- How did these changes affect public attitudes to cycling?

For specific links to information you could ask the children to look at:

www.bicyclehistory.net/bicycle-history/history-of-bicycle/
www.cyclinguk.org/about/history/ctc-history-timeline
www.en.wikipedia.org/wiki/History_of_the_bicycle

Lesson 4: PSHE

Lesson overview

The class will explore how safe their town is to cycle in, how safety could be improved and whether they could use more environmentally friendly transport methods to get to school.

Aim

To learn more about how to cycle safely and explore different modes of travel

Objectives

To discuss what makes a town or city safe for cyclists and what changes may be needed to encourage more people to choose to cycle instead of driving

Programme of study

PSHE

- To find out what being part of a community means, and about the varied institutions that support communities locally and nationally
- To recognise the role of voluntary, community and pressure groups, especially in relation to health and wellbeing

Preparation

Use Google Maps to get an overhead map of the local area around your school. Highlight some routes to school from various local landmarks such as churches, supermarkets, etc.

4. Using information from the Road Safety Week action pack, discuss the environmental impact of driving compared with cycling. Ask children what they think the school's collective impact will be on the environment.

5. Talk with the class about how they think they could improve cycling safety in their own town. This could include who they think they could talk to, such as their parents, and what they could ask them to do. This advice could include:

- Taking the time to look properly for cyclists before pulling out of junctions.
- Leaving plenty of space when overtaking. 1.5m is the recommended minimum distance.
- Slowing down on rural roads and in areas around schools and communities.

Extension

Ask the class to draw a map of an ideal safe cycling town. This could include safe, segregated cycle paths, lower speed limits and car-free areas.

Lesson outline

1. Discuss with the children what someone needs to be safe when they cycle, such as cycle paths away from busy traffic, and lower speed limits for vehicles. Explain that children under 10 should not cycle on roads and should always cycle with a grown-up.
2. Using the map of your local area, look at routes to school from various local landmarks and discuss as a class whether these would be safe or unsafe for cyclists. Get the pupils to write ideas for how unsafe routes could be made safer.
3. Discuss how far away the children live from school and whether they walk, cycle, drive or use public transport. Ask whether any who travel by car think they could use other methods of transport to get to school, and get their thoughts on the benefits or disadvantages of different modes of transport.

Lesson 5: Art

Lesson overview

The class will design their own cycle helmet or road safety poster.

Aim

To use creative skills to create an entirely new, visually appealing design

Objectives

To discuss ideas for how a cycling helmet could better protect its wearer and use these to create a design for an improved product

Preparation

Print a copy of the 'Design your own cycle helmet' sheet found on page 27 of this resource pack for each child.

Lesson outline

Ask the class what features they believe a cycling helmet needs to be safe and comfortable. Make a list of their suggestions and ask them to rank them by importance. Discuss how these two features interact with each other, e.g. how helmets often need to have holes in them to allow ventilation for the head.

Explain to the class that they will be designing a new cycling helmet using their favourite colours, to be as bold and bright as possible. They can also add any extra features they think might make the helmet safer, such as flashing lights, indicators or any other ideas they have.

These designs could be entered into a school competition, using some small items from the Brake shop as prizes for the creators of the boldest and brightest designs. You could also select entries for a nationwide competition where the winners will see their design made into a real helmet and will receive a brand-new bicycle.

To enter this competition, ask the children to complete the 'Design your own cycle helmet' activity sheet provided on page 27 of this resource pack.

Extension

Ask the children to design safer versions of other cycling equipment such as knee and elbow pads or brightly coloured cycle clothing.

Further ideas

1. Write, paint, draw or design road safety posters (A4/A3 size) about the importance of drivers or cyclists being 'Bike Smart'. Allow the children to decide whether they want their poster to focus on driving or cycling in urban or rural areas.

These posters could focus on advice such as:

- Drivers should slow down to 50mph on rural roads or 20mph in busy built-up areas.
- Drivers should leave a minimum of 1.5 metres when overtaking cyclists.
- Cyclists need safe cycle paths away from traffic.
- Cyclists should always have lights on their bike when travelling at night or in poor weather.
- Children under 10 should not cycle on roads.

2. Make a road safety display in your reception area for parents and visitors to see.

First4Lawyers has teamed up with Brake and the University of Huddersfield to run a nationwide cycle helmet design competition in association with Road Safety Week.

Eight lucky winners will see their helmet design brought to life using state-of-the-art 3D printing technology. They will also win a new bike.

For further details about entering the competition, visit www.cycle-safety.org

Closing date for entries: **Tuesday 27 November 2018.**

Additional resources

Additional resources

Your Road Safety Week action pack contains resources including:

- A guidance sheet
- A 'Getting Involved' poster and a 'We Love Road Safety Week' poster
- A participation certificate
- A Bike Smart fact sheet (ages 5-11)
- A Bike Smart fact sheet (ages 11-14)
- A Bike Smart fact sheet (cycling)
- A Bike Smart fact sheet (motorbikes)
- A driver advice sheet
- 'Smart Drivers are Bike Smart' posters
- Road Safety Week logo and sliders for use in your newsletters and on social media

Brake has published a number of other resources that can help promote the benefits of cycling and raise awareness of the things drivers and cyclists need to consider to keep each other safe.

For general cycling advice, go to www.brake.org.uk/facts-resources/21-resources/325-cycling

For information about the campaign for safe spaces including segregated cycle paths, see our Place for People campaign page at www.brake.org.uk/campaigns/flagship-campaigns/place-for-people

For information about the campaign to reduce speed limits in built-up areas to 20mph and for lower default speed limits on rural roads, see our Pace for People campaign page at www.brake.org.uk/campaigns/flagship-campaigns/go-20



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Find out more at

www.roadsafetyweek.org.uk

Lesson 1: English

KS2 non-fiction texts

Ford — More tips to help share the road

TAKE A BREAK FROM TEXTING
 Those text messages and Likes aren't going anywhere, but people around you certainly are. When you're driving a car or riding a bike, keep your phone out of sight so you can pay full attention to what's going on, staying safe and within the law.

LOOK, REACH, OPEN
 LEARN THE DUTCH REACH
 Open your car door with the hand furthest from the door; this automatically moves your head into a better position to look for oncoming cyclists.

DON'T BE A CREEP
 STOP SIGNS & RED LIGHTS AREN'T MERE SUGGESTIONS, THEY'RE THE LAW.
 Creeping into an intersection can lead to unnecessary danger for you and everyone else using the space.

SEND THE RIGHT SIGNALS
 Whether you're on a bike or in a car, it's important that everyone around you knows what you're up to, SO DON'T FORGET TO SIGNAL. Random strangers aren't great at reading your mind, so good signalling goes a long way.

GO WITH THE FLOW
 Weaving in and out of lanes, aggressive overtaking, practically trying to shove a few minutes off your commute and end up at the same red light. **SOUND FAMILIAR?**
 The road is less safe when everyone is trying to outpace the flow of traffic - so take a deep breath, enjoy the journey, and leave a few minutes earlier to avoid the panicked rush.

DRESS TO BE NOTICED
 Wear bright, reflective clothing day and night when cycling so you are visible to those around you. You can never go wrong with bright neon, just ask the 80's.

SAVE A CYCLIST, AND YOUR DOOR. IT'S A WIN/WIN.

Share the Road and help make roads safer. Search: Ford Share The Road.

Brake the road safety charity

Source: https://www.ford.co.uk/content/dam/guxeu/uk/documents/experience-ford/share-the-road/ShareTheRoad_A5-UK_100518.pdf

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Lesson 1: English

KS2 non-fiction texts

Brake — Advice for cyclists



Advice for cyclists

Print Email

Cycling is a great way to get around. It's fun, healthy, good for the planet and cheaper than driving. But unfortunately it can be risky. In 2017, 101 cyclists were killed and 3,698 seriously injured in Britain. This is part of the reason why the UK lags behind many other countries for cycling levels: just 2% of journeys and 1% of miles in Britain are travelled by bike.



Brake campaigns for safer streets and routes for active and sustainable travel, including traffic free cycle routes and 20mph limits in communities through our **Pace for People** campaign to encourage uptake and protect people on bikes.

Until we achieve this, the ultimate responsibility for protecting cyclists and pedestrians on our roads lies with drivers, who are operating a fastmoving machine that can cause a lot of damage. But there are steps cyclists can take to help reduce the risks they face. Read our advice for cyclists on taking the safest approach to getting about by bike.

- Why cycle?
- Getting started
- Travelling by bike
- Cycling on the road
- Cycling with children

Why cycle?

It's healthy

Cycling is an excellent form of exercise. Incorporating physical exercise, such as cycling, into everyday life can be as effective for weight loss as a supervised exercise programme. Regular exercise reduces the risk of heart disease and obesity, and increases life expectancy. High blood pressure, osteoporosis, diabetes and depression are also less frequent among people who exercise regularly, and cyclists in busy cities report better lung health than most other road users as they may experience pollution levels five times lower than drivers. Cycling to work, school or the shops is a great way to stay fit and in shape and feel good.

Modern bikes are lightweight and affordable (especially compared to running a car). Estimates suggest cycling costs riders around £396 per year, compared with the £3,727 annual cost of driving. They can also be fitted with panniers and baskets that can carry a surprising amount.

While the British weather can sometimes be intimidating to first-time cyclists, what looks like a drizzly and cold day from within a car can be refreshing on two wheels. You don't have to get hot and sweaty, just ride at your own pace.



Source: www.brake.org.uk/news/21-facts-a-resources/resources/325-cycling

Lesson 1: English

KS2 non-fiction texts

Maisie's Story

Maisie's story

 Brake volunteers  Maisie Godden-Hall  Friday, 14 September 2018  561 Hits  0 Comments



Twelve-year-old Maisie Godden-Hall says wearing a cycle helmet saved her life. She is so passionate about getting children to wear helmets, she launched a petition with support from Cycle-smart Foundation. Here, she shares her story.

"I'm 12 years old, but my incident happened nearly two years ago when I just turned 11. I was cycling to school and had to brake suddenly because a car didn't stop at the side junction in front of me. I flew over my handlebars and landed on the side of my head in front of the car. The driver didn't see me, and ran over me, trapping me underneath.

"My cycle helmet cracked when I hit the road and melted while resting on the exhaust under the car. But the helmet didn't break, and my head remained protected.

"I was flown by air ambulance to hospital where I stayed lying flat for almost a month. I then had two months where I needed to use a wheelchair and then crutches, until finally I was allowed to walk again.

"It was a really scary time for me and my family. But because I wore my helmet things weren't as horrific as they could have been. I thought nothing like this could ever happen to me, but it did.

"So, I wanted to make other children aware of how important it is to wear a helmet. That's why I started my own petition, calling on the Government to make wearing a cycle helmet law for children.

"They might not look stylish, but helmets save lives, and it saved mine!"

Source: <http://www.roadsafetyweek.org.uk/blog/entry/maisie-s-story>

Lesson 1: English

KS2 non-fiction texts

Think! — Hang back



Source: www.think.gov.uk/campaign/cycle-safety-2016/#group-images-1

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Lesson 1: English

KS2 non-fiction texts

NHS - Benefits of cycling

Exercise

How much exercise? ▾

Couch to 5K ▾

Exercise tips ▾

Fitness guides ▾

Page contents

- [Benefits of cycling](#)
- [Cycling safety tips](#)
- [Cycling events](#)
- [Safety gear checklist](#)
- [Lights and reflectors](#)
- [Bicycle road safety check](#)

Benefits of cycling



Find out all you need to know about the health benefits of cycling and get tips on equipment, road safety, and cycle routes.

Benefits of cycling

Cycling is one of the easiest ways to fit exercise into your daily routine because it's also a form of transport.

Cycling also:

- saves you money
- gets you fit
- helps the environment

It's a low-impact type of exercise, so it's easier on your joints than running or other high-impact aerobic activities. But it still helps you get into shape.

The best way to build your cardiovascular fitness on the bike is to ride for at least [150 minutes every week](#).

For example, you could cycle to work a few days a week, or do a couple of shorter rides during the week with a longer ride at the weekend. You'll soon feel the benefits.

If you're just getting started, check out our guide to [cycling for beginners](#).

Lesson 1: English

KS2 non-fiction texts

Road Safety Week — Cycling fact sheet

Ages 5-11

Cycling - the facts



Riding a bike is great fun. It's good for our bodies and good for the planet as well. But cycling can be dangerous, and drivers and cyclists need to take proper care to keep each other safe. Cyclists are some of the most vulnerable road users, and children are at particular risk. About 100 children under the age of 11 are killed or seriously injured in cycling collisions every year.¹











Healthy bodies, healthy planet

Cycling is an excellent form of exercise and can help with both weight loss and physical fitness. For children, cycling can help fine-tune skills like balance and coordination, and can even boost brain power by increasing blood flow to the brain.²

Cycling also helps to keep the planet healthy. More than a quarter of greenhouse gas emissions come from cars and other vehicles,³ and this pollution can ruin communities' ability to enjoy their local areas. If more people choose to cycle instead of driving, there will be less traffic on the roads and the air will be cleaner to breathe.



Cycling is good for our health, good for the planet and good for our economy too

-  =  Improves fitness
-  =  Boosts brain power
-  =  Increases wellbeing
-  =  Lowers pollution
-  =  Reduces congestion

Younger children in particular can find it difficult to pay attention to more than one aspect of a potentially dangerous situation, and generally speaking children cannot accurately judge the speed and distance of approaching traffic until they are about 12 years old.

Training builds skills

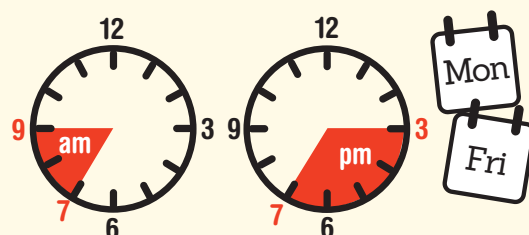
Around the age of 10, some children begin riding their bikes to school by themselves. In 2016, almost half (44%) of all cyclist deaths and injuries happened at times when children would be travelling to and from schools – on weekdays between 7am and 9am, or 3pm and 7pm.⁶

Training helps give children the skills and confidence they need to prepare them for cycling safely on the roads. Organisations like Bikeability, Cycling Scotland and Cycle Training Wales run training sessions for all ages and abilities, and cover topics from balance and control to planning independent journeys on busier roads. Schools can arrange for professional trainers to deliver courses with their pupils.

Children should cycle with a grown up on safe cycle paths

Traffic is heavy, it hits hard and can hurt people, so cyclists should avoid riding on the road where they can. Most roads are unsafe for children, especially fast and bendy rural roads and busy roads in towns and cities that do not have separate spaces for cyclists. Children can perceive hazards differently to adults, and may think that if they can see an approaching car, the driver can see them too.⁴ Children tend to concentrate on what is right in front of them and might not notice things at the edges of their vision.⁵ This can affect their awareness of traffic.

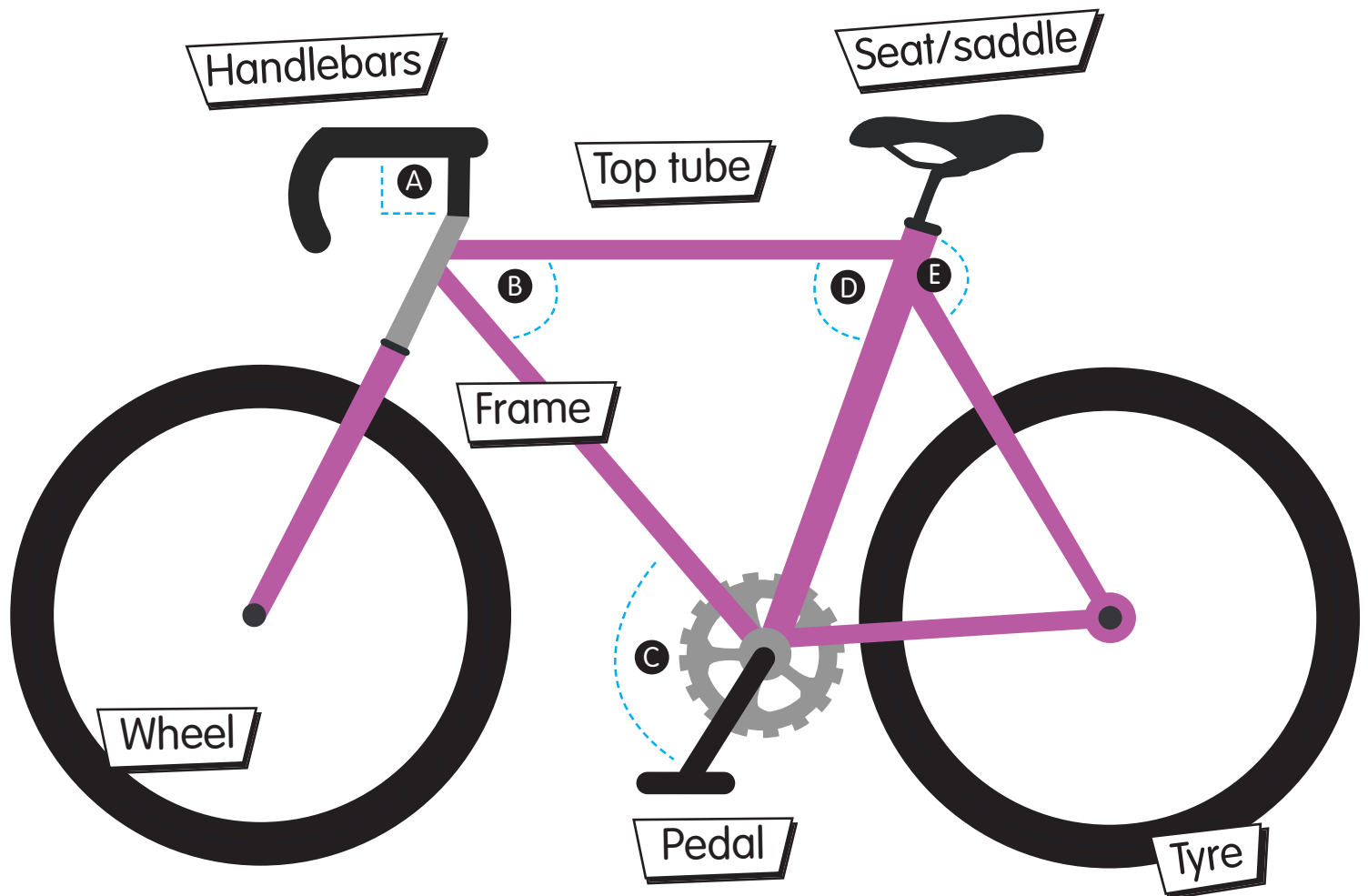
44% of cycling casualties occur at times when children are travelling to and from school



Find out more at www.roadsafetyweek.org.uk

Lesson 2: Maths

Angles worksheet 1

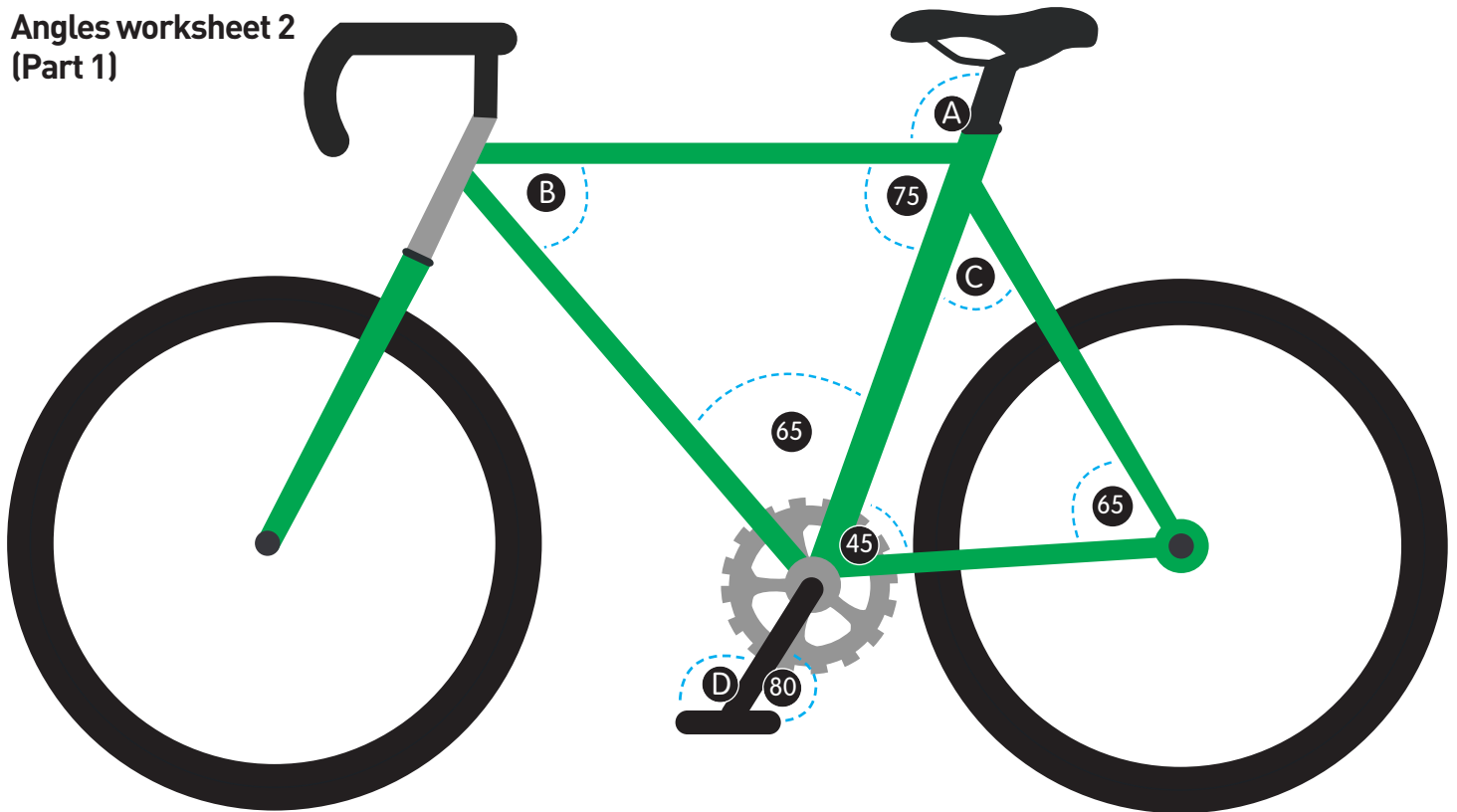


Look at the image of a bicycle and decide whether each of the angles A-E is a right angle, acute angle or obtuse angle. Write your answers here.

- A.
- B.
- C.
- D.
- E.

Lesson 2: Maths

Angles worksheet 2 (Part 1)



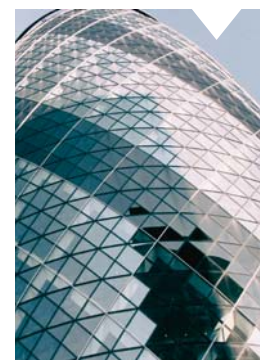
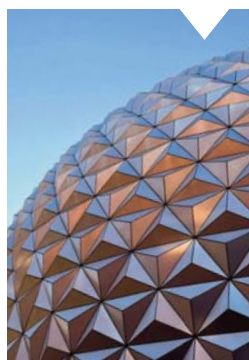
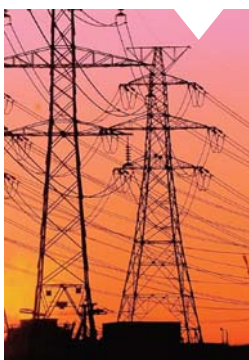
Using your knowledge of angles in straight lines and triangles, work out the size of the missing angles A-D. Give your answer in degrees.

- A.
- B.
- C.
- D.

Why are bikes so full of triangles?

Bicycle design hasn't changed much for nearly 160 years. The most popular form is known as the 'diamond' or 'double-triangle' frame. This design gives a bike great strength and stability, because triangles are the strongest kind of shape.

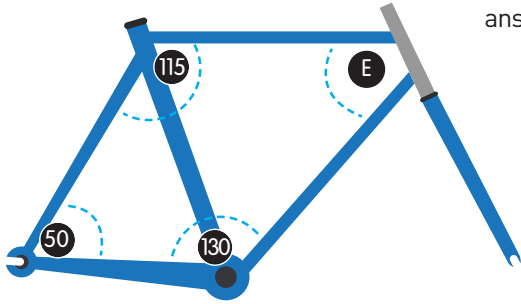
Imagine a square with a hinge at each corner — it would be really easy to push it out of shape. But triangles are much harder to deform, if not impossible. Because of this, triangles are often used when designing buildings that need to withstand a lot of pressure.



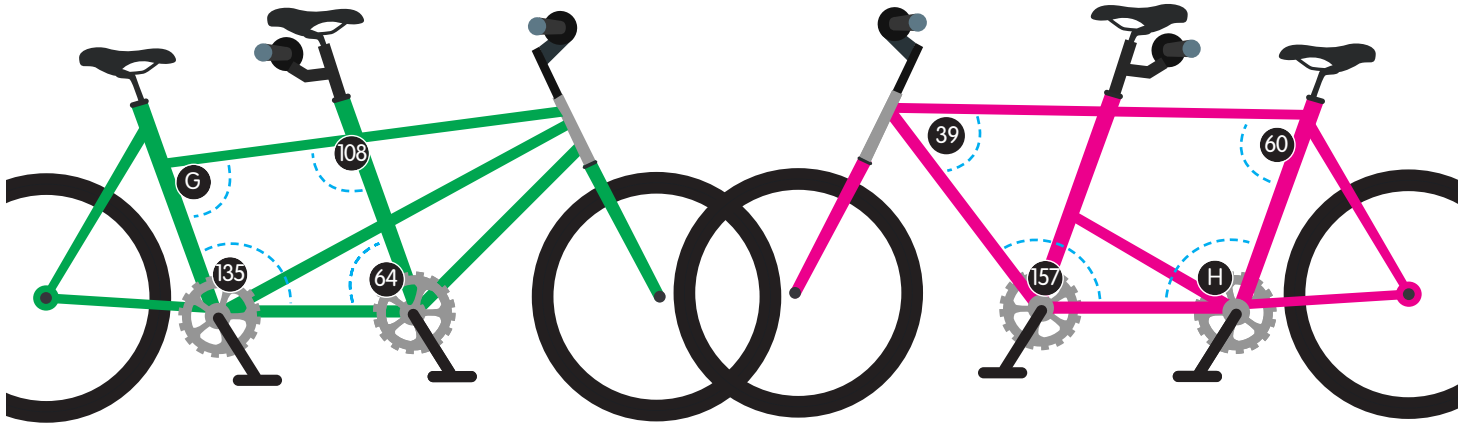
Lesson 2: Maths

Angles worksheet 2 (Part 2)

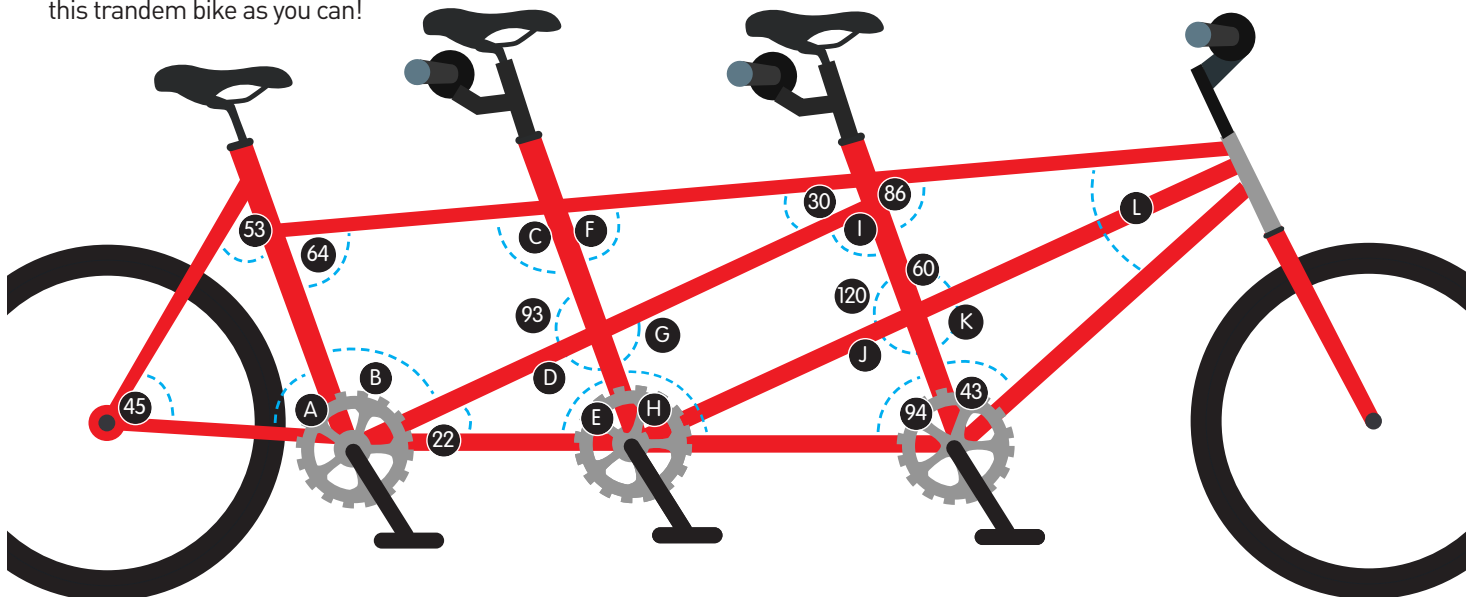
Using your knowledge of angles in quadrilaterals, work out the size of the missing angles E-H. Give your answer in degrees.



- E.
- F.
- G.
- H.



Extension: Use your knowledge of the angles in straight lines, triangles and quadrilaterals to find as many missing angles in this tandem bike as you can!



Lesson 3: History/ICT

Cycling through time

Timeline

Despite cars making up the vast majority of traffic today, most roads were not built with them in mind. In fact, some of the earliest major changes to Britain's road network were to make things safer for cyclists — and cyclists played a critical part in seeing them achieved. Although road design started to favour drivers as the popularity of cars increased, there has recently been a renewed push to prioritise changes that will protect riders on the roads.

1800s

1818: Karl von Drais patents the velocipede, the earliest kind of bicycle. The velocipede was nicknamed the 'bone-shaker' because of its rigid frame and iron-banded wheels, which made it a very bumpy ride as roads at the time were rarely smooth.



1870s

1874: James Starley adapts an existing design to create the 'ordinary bicycle'. Nicknamed the 'penny farthing', it was the first machine to be called a bicycle.

1876: Harry Lawson creates the first recognisably modern bicycle known as a 'safety bicycle'. This design helps cycling start to become much more popular.



1880s

1886: The Cyclists' Touring Club creates the Road Improvement Association, and publishes information on how to design safer roads. Using their own money, cyclists pay for road improvements, such as filling potholes and laying tarmac to create smoother surfaces.

1888: John Boyd Dunlop invents air-filled rubber tyres, which increases cycling's popularity even more as they make it much more comfortable.



1890s

1896: Pressure from drivers leads to the Locomotives Amendment Act being repealed. This law had required cars to travel very slowly and be led by a man waving a red flag. Getting rid of this law meant drivers could travel more quickly, making roads more dangerous for cyclists and pedestrians.



1930s

1931: The first Highway Code is published, asking all road users to be careful and considerate towards each other.

1934: 1,536 cyclists die on Britain's roads, the highest number ever recorded. In London, the first dedicated cycle path opens, giving cyclists somewhere to travel away from the dangers of traffic.



1940s

1947: The first Cycling Proficiency Test is held, more than a decade after the scheme was created.

1949: Cycling levels peak in the UK with 24 billion kilometres covered, or 37% of all traffic.



1950s

1950: Motorcycles and cars overtake bikes as the most common form of transport.

1958: The first motorway opens, marking the first road dedicated for car drivers.



1960s

1963: Professor Colin Buchanan argues in a government report that introducing cycle paths on many roads is too expensive and impractical.

1968: Cyclists are officially allowed on bridleways and long-distance country routes through the Countryside Act but sales of new bicycles reach an all-time low (less than 200,000 by the end of the decade).



1970s

1973: UK cycling collapses to its lowest ever level, with 3.7 billion kilometres or 1% of traffic. However, its popularity soon starts to rise again.

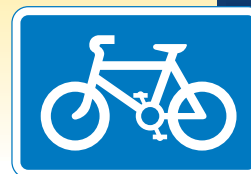


1990s

1992: The concept of 'safety in numbers' is introduced, suggesting there would be fewer collisions if there were more cyclists on the roads.

1995: The National Cycling Network is introduced, aiming to turn disused railway lines and canal towpaths into new, safe cycling routes.

1996: The first National Cycling Strategy is launched, aiming to double the number of cycling trips by 2003.



2000s

2005: The National Standard for cycle training is launched. Cycling England is also founded, and six towns – Aylesbury, Brighton and Hove, Darlington, Derby, Exeter and Lancaster – are chosen to be cycling demonstration towns to promote the use of cycling as a means of transport.

2007: The Bikeability course is introduced, replacing the Cycling Proficiency test. Portsmouth becomes the first UK city to propose a 20mph limit on almost all of its residential roads. The cycling demonstration towns project is also expanded and leads to an average 29% increase in cycling across each town.

2010: London's cycle hire scheme officially begins with 5,000 bicycles distributed across the city. These bicycles — often known as 'Boris Bikes' after the former London Mayor Boris Johnson — would be used for 10.3 million journeys annually within just six years. Britain's chief medical officer, Sir Liam Donaldson, calls for an 800% increase in cycling to improve public health.

2012: The Olympic Games are held in London and Great Britain wins 12 medals in cycling events — eight gold, two silver and two bronze. The success prompts more people to take up cycling, with research showing 52% of people become more motivated to cycle as a result of Team GB's achievements.



2014: The Tour de France, one of the most famous cycling races in the world, comes to the UK for the fourth time in its history. The race begins in Leeds and cyclists travel to towns and cities throughout Yorkshire as part of the Grand Départ (the early stages of the event). This race is often thought of as partially responsible for raising cycling's popularity in the UK in the last few years.



2015: Lobbying by cyclists leads to the Infrastructure Act 2015, which requires the Government to create a plan to make cycling and walking more popular over the next 35 years. This plan is known as the Cycling and Walking Investment Strategy.



2017: 101 cyclists die on the roads, compared with 787 car occupants. The Cycling and Walking Investment Strategy is published. It calls for streets where cyclists feel safer, with lower speed limits and safer paths away from busy roads.



2018: The bicycle celebrates its 200th anniversary. Brake, the road safety charity, chooses 'Bike Smart' as the theme for Road Safety Week, to shout out about the safety of everyone who uses roads on two wheels.

Be



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Week

19-25 November 2018

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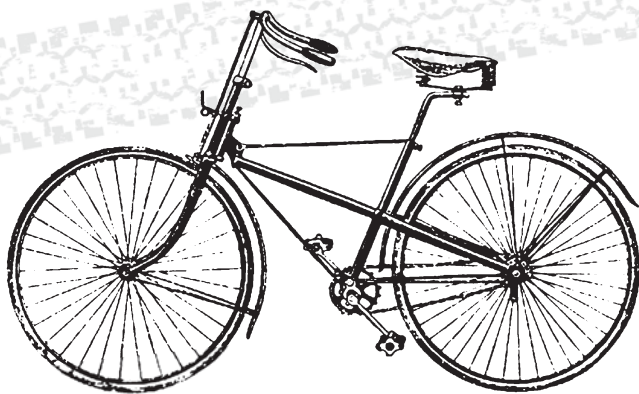
www.roadsafetyweek.org.uk

Lesson 3: History/ICT

Cycling through time

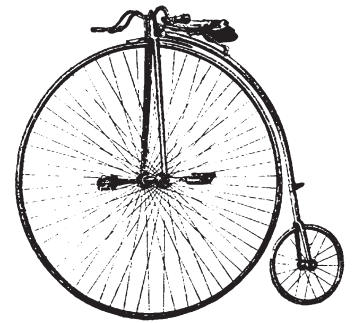
First bicycle

Karl von Drais patents the velocipede, the earliest kind of bicycle. Unlike modern bikes the velocipede was made of wood and had no pedals. Instead, the rider pushed it along with their feet. This bike was popular with wealthy men early on but many people found it uncomfortable and others thought it was too dangerous. The velocipede was nicknamed the 'bone-shaker' because of its rigid frame and iron-banded wheels, which made it a very bumpy ride as roads at the time were rarely smooth.



Safer cycling

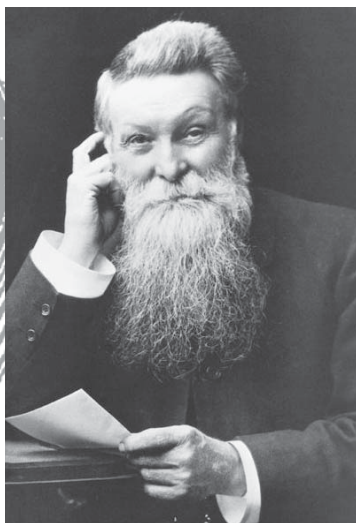
James Starley creates the 'ordinary bicycle', which was nicknamed the 'penny farthing' and was the first machine to be called a bicycle. The penny farthing was not particularly safe because one of its wheels was much larger than the other and the rider was very high off the ground, leaving them vulnerable to falling off.



Harry Lawson creates the first recognisably modern bicycle known as a 'safety bicycle' around 10 years later. This design features a diamond frame and lets the rider sit much closer to the ground, reducing the risk of them falling off.

The Cyclists' Touring Club creates the Road Improvement Association, and publishes information on how to design safer roads. Using their own money, cyclists pay for road improvements, such as filling potholes and laying tarmac to create smoother surfaces. John Boyd Dunlop also invents air-filled rubber tyres, which increases cycling's popularity even more as they make it much more comfortable.

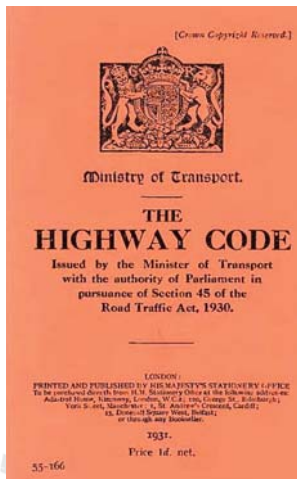
However, pressure from drivers leads to the Locomotives Amendment Act being repealed. This law had required cars to travel very slowly and be led by a man waving a red flag. Getting rid of this law meant drivers could travel more quickly, making roads more dangerous for cyclists and pedestrians.



Lesson 3: History/ICT

Cycling through time

Roads get more dangerous - but then safer



The first-ever Highway Code, the official set of rules and advice for road users in the UK, is published by the Government. The Code is intended to promote road safety and asks all road users to be careful and considerate towards each other.

Three years later, 1,536 cyclists died on Britain's roads, the highest number ever recorded. However, in West London, the first dedicated cycle path opens up giving cyclists somewhere to travel away from the dangers of traffic. It was described at the time as a 'safety path for cyclists'.



Popularity peaks

The first Cycling Proficiency Test, the predecessor to Bikeability, is held at the Royal Society for the Prevention of Accidents' Road Safety Congress as part of a pilot test. Seven children take part in it. A few years later, cycling's popularity peaks in the UK as cyclists travelled 14 billion miles (24 billion km) in just 12 months. This meant cyclists made up 37% of all traffic.



Lesson 3: History/ICT

Cycling through time

Sales reach a record low

Motorcycles and cars overtake bikes as the most common form of transport as people start to become wealthier after WWII. The first motorway also opens, marking the first road dedicated for car drivers.

Professor Colin Buchanan argues in a government report that introducing cycle paths on many roads is too expensive and impractical. Sales of new bicycles reach an all-time low at less than 200,000. Shortly afterwards, UK cycling collapses to its lowest ever level, with 3.7 billion kilometres or 1% of traffic. However, its popularity soon starts to rise again. Cyclists are officially allowed on bridleways and long-distance country routes through the Countryside Act.



New safety plans

The concept of 'safety in numbers' is introduced, which suggests there would be fewer collisions if there were more cyclists on the roads. The National Cycling Network is introduced as part of a plan to encourage cycling by turning disused railway lines and canal towpaths into new, safe cycling routes. The following year, the first National Cycling Strategy is launched aiming to double the number of cycling trips in just seven years.

Lesson 3: History/ICT

Cycling through time

Cycling projects lead to increase

The National Standard for cycle training is launched. Cycling England is also founded, and six towns – Aylesbury, Brighton and Hove, Darlington, Derby, Exeter and Lancaster – are chosen to be cycling demonstration towns that would promote the use of cycling as a means of transport.

The Bikeability course is introduced, replacing the Cycling Proficiency test. Portsmouth becomes the first UK city to propose a 20mph limit on almost all of its residential roads. The cycling demonstration towns project is also expanded and leads to a 29% increase in cycling across each town.



Sports prompt cycling surge

London's cycle hire scheme officially begins with 5,000 bicycles distributed across the city. These bicycles — often known as 'Boris Bikes' after the former London Mayor Boris Johnson — would be used for 10.3 million journeys annually within just six years. Britain's chief medical officer, Sir Liam Donaldson, also calls for an 800% increase in cycling to improve public health.

The Olympic Games are held in London and Great Britain wins 12 medals in cycling events — eight gold, two silver and two bronze. The success prompts more people to take up cycling, with research showing 52% of people become more motivated to cycle as a result of Team GB's achievements.

The Tour de France, one of the most famous cycling races in the world, comes to the UK for the fourth time in its history. The race begins in Leeds and cyclists travel to towns and cities throughout Yorkshire as part of the Grand Départ (the early stages of the event). This race is often thought of as partially responsible for raising cycling's popularity in the UK in the last few years.

Lobbying by cyclists leads to a new law, which requires the Government to create a plan to make cycling and walking more popular over the next 35 years. This plan is known as the Cycling and Walking Investment Strategy.

In one year 101 cyclists die on the roads, compared with 787 car occupants. The Cycling and Walking Investment Strategy is published. It calls for streets where cyclists feel safer, with lower speed limits and safer paths away from busy roads. The bicycle celebrates its 200th anniversary. Brake, the road safety charity, chooses Blke Smart as the theme for Road Safety Week.



Lesson 5: Art

Design your own cycle helmet

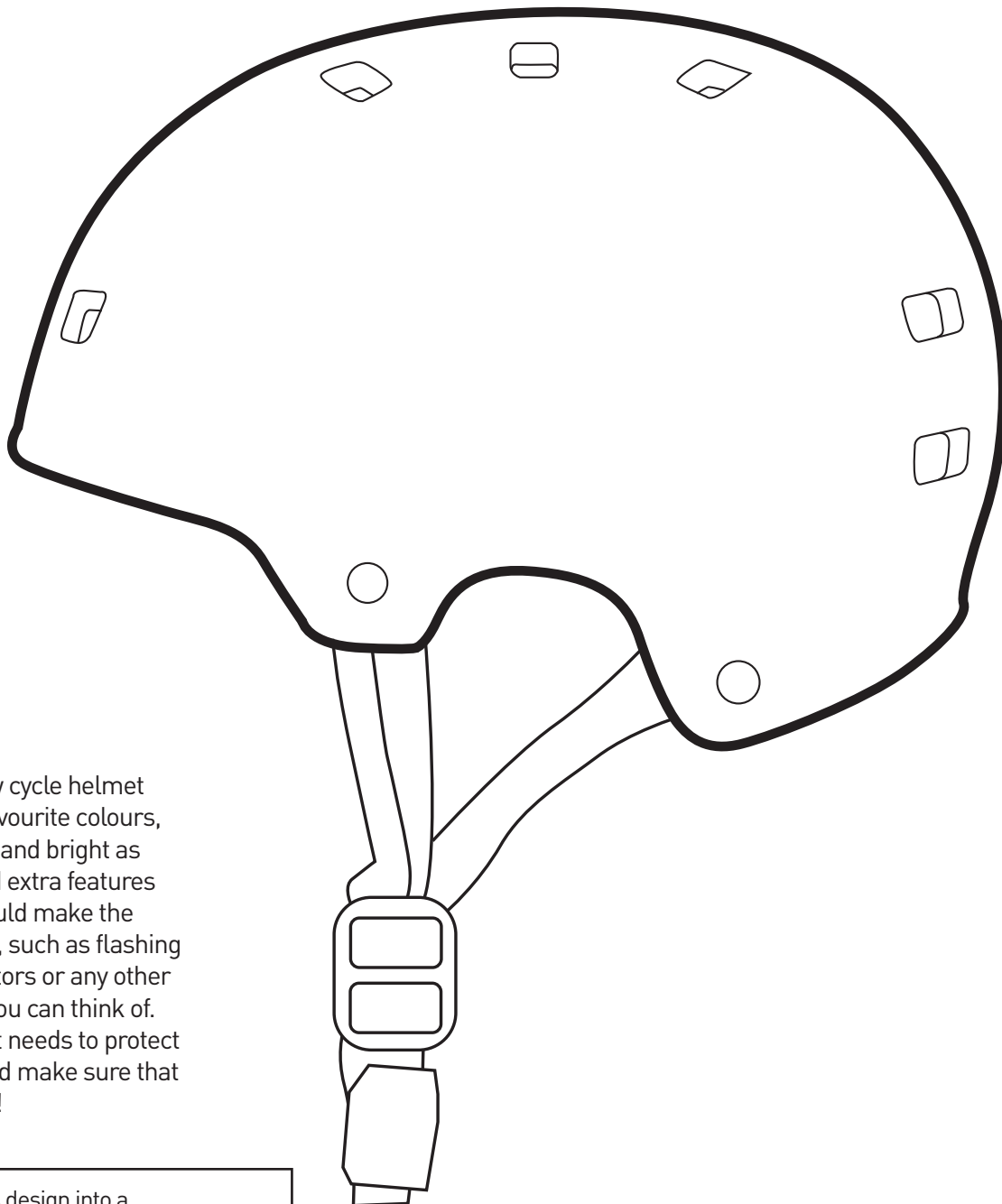
Name:

Age:

Teacher:

School:

Year group:



Design a new cycle helmet using your favourite colours, to be as bold and bright as possible. Add extra features you think would make the helmet safer, such as flashing lights, indicators or any other great ideas you can think of. Remember it needs to protect your head and make sure that you are seen!

To enter this design into a nationwide cycle helmet design competition, visit www.cycle-safety.org
Closing date for entries:
Tuesday 27 November 2018.

www.roadsafetyweek.org.uk

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