

Eureka!

Have you ever looked around you at all the things you have in your house and wondered how they got there? Who invented them? Why were they invented?

Inventors are usually ordinary people like you and me who discover something that needs changing or improving. Sometimes people don't even know they are inventors until they discover a problem they want to solve. If nobody else is willing to sort out their problem then they do it themselves and lo and behold, a new invention appears.

Born Inventors

Sometimes, people are so curious that they can't help themselves. For example, when Sir Isaac Newton discovered that light was made up of all the colours of the rainbow, he spent months investigating his theory and setting up experiments that separated the light into its different colours. He wouldn't stop until his work was done.



Sir Isaac Newton

Accidental Inventors

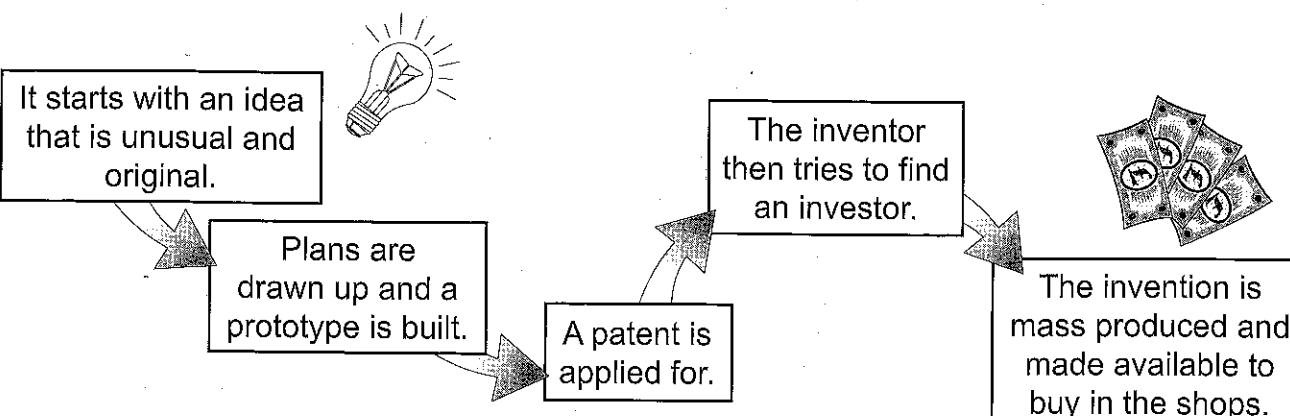
Other inventors come across their ideas purely by accident. The little glass marbles in the middle of roads that reflect the light from car headlights and help drivers to follow the road in the night are called 'cats' eyes'. The inventor got his idea when driving at night and he noticed that his car headlights were reflecting in the eyes of a cat sitting by the side of the road. And so another life-changing invention was born.



Cats' eyes — the inspiration

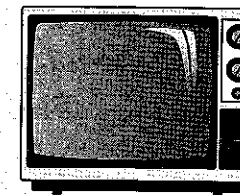
Where To Begin?

It takes a while for an idea to develop into a full-blown product, being sold in the shops. Follow the arrows below to track an invention from idea to shop floor.



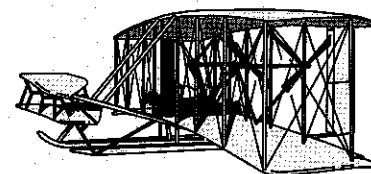
Believing In What You Have Invented

It's not easy to be a successful inventor, but everything you see around you every day, from televisions to mobile phones, were invented by someone. Every invention also went through the same process of idea to product.



The Television

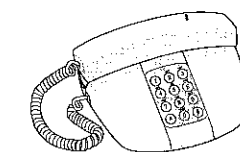
The hardest part of the invention process is believing in what you are making. When Marconi invented the first radio in 1896 and Farnsworth invented the first television in 1927, people laughed and said they would never be popular!



The Aeroplane

The Wright Brothers believed they could invent a machine that would let men fly. Almost everyone said they must be mad, but they knew they could build an aeroplane. In 1902 they held their first successful flight, where spectators gasped and burst into an enormous round of applause. The Wright Brothers believed in their invention and they proved that they were right.

Alexander Graham Bell invented the telephone in 1887. He knew that sound could travel through wires and after many experiments and prototypes, the world's first telephone appeared. This idea was mocked by Bell's friends, but thanks to his hard work, it is now one of the most popular ways of communicating in the world.



The Telephone

What Would We Do Without Them?

Imagine a world without telephones, televisions, radios and aeroplanes. It's difficult because these inventions are so important in our 21st century lives. We would live very different lives if it were not for the dedication of the inventors and the belief they had in their inventions.

We owe a lot to inventors, but it's easy to forget about them when you're sitting in front of your wide-screen television, talking to your friend on the phone.

So the next time you get on a plane, switch on a washing machine, talk on your mobile or switch on your computer, think about the person whose idea it was and the process they went through so you could use it. Maybe they will encourage you to invent something yourself. *Good Luck!*

Glossary

- investor** — someone who gives money to help make the invention, expecting more money back when the invention sells
- patent** — a legal document that stops other people from copying the idea
- prototype** — the first example of a new invention, made to test the design

Fact Retrieval Questions



These **FACT RETRIEVAL** questions just ask you to pick out information from the text. Have another read of *Eureka!* and then try and find the answers to these questions.

1. The introduction to the booklet tells us

that inventors
are often
normal people

that inventors
go to a special
inventors' school

that only five
people invented
everything

that there are no
such things as
inventors

1
mark

Circle your answer.

2. Use the information from the text to match up the inventors to what they invented. The first one has been done for you.

Marconi

Invented the telephone

Alexander Graham Bell

Invented the radio

Farnsworth

Invented aeroplanes

The Wright Brothers

Invented television

2
marks

3. How were 'cats' eyes' invented?

2
marks

4. What did the crowd do when the Wright brothers managed to make their first plane fly?

1
mark

5. Was Isaac Newton an accidental inventor or a born inventor?

1
mark

Fact Retrieval Questions



6. Draw lines to match the words to their meanings.

Investor

A document saying an idea can't be copied

Prototype

A model of your original idea

Patent

Someone willing to put money into your invention

2
marks

7. In what year was the telephone invented?

1
mark

8. What happens to an invention after the inventor finds an investor?

1
mark

9. What is an accidental inventor?

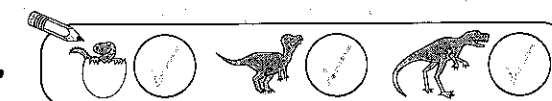
1
mark

10. Use information from under the different subheadings to help you fill in this table. Some of the boxes have already been filled in for you.

	Tells us about people who invent things without meaning to.
What Would We Do Without Them?	
Glossary	
Where To Begin?	Tells us about the invention process from idea to shop.

3
marks

Reading Raptors find facts hidden in the deepest, darkest caves. How did you get on with these pages?





Inference Questions



INFERENCE questions are all about using your imagination and doing a bit of detective work to work out what's going on. Read through *Eureka!* again and have a go at these questions.

1. At the end, the booklet tells us to

take inventors
for granted

be afraid of
inventors

look for inventors
at school

be thankful to
inventors

1
mark

Circle your answer.

2. The section called 'Believing In What You Have Invented' is about

having faith in
your own work

having faith
in the work of
others

hoping that
you might be
successful

just doing it
for the fun of it

1
mark

Circle your answer.

3. Draw lines to match the subheadings from the text to the message of each paragraph. One has been done for you.

Accidental
Inventors

Where to Begin?

Born Inventors

What Would We Do
Without Them?

Be thankful for inventors

Some inventors are
always questioning things

Inventing is a long process

Inventions sometimes
come out of the blue

2
marks

4. What is the difference between 'Born Inventors' and 'Accidental Inventors' according to the article?

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2
marks



Inference Questions



5. When the Wright brothers held their first successful flight, the spectators 'gaspd'. What does the word 'gaspd' imply about the spectators?

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1
mark

6. Why do you think that inventors and their inventions are mocked and doubted by people they know?

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2
marks

7. How do you think inventors feel when their ideas are laughed at?

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2
marks

8. Why do you think that believing in your idea is the hardest part of the process?

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2
marks

9. How do you think people might have felt the first time they used a telephone?

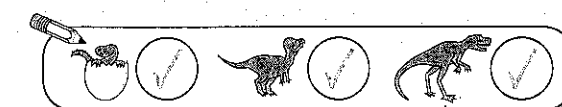
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2
marks

Reading Raptors can do Inference questions in their sleep. How were your detective skills?



Structure and Layout Questions



Writers often lay their work out to make it clearer, or to **EMPHASISE SOME THINGS** more than others. Have a look through the text for layout features before you try these questions.

1. Why have the words been put into boxes in the 'Where to Begin?' section?

1
mark

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2. What is the purpose of the subheadings and how do they help you to understand the text better?

2
marks

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3. How do the arrows in 'Where to Begin' help you to understand the text?

1
mark

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4. What is the glossary and how does it help you to understand the text better?

2
marks

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5. How do the pictures help you to understand the text?

2
marks

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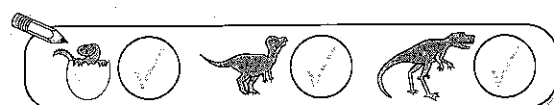
6. How does the final section, 'What Would We Do Without Them?', link back to the opening paragraph?

2
marks

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Reading Raptors eat Layout questions for breakfast.
Sometimes for lunch too. How did you get on?



Writer's Purpose Questions



Writers don't just write random stuff — they think carefully about what they want to say. Read the text again and think about why the writer wrote each section. Then try these questions.

1. Why do you think the writer started this piece with questions?

1
mark

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2. 'spectators gasped and burst into an enormous round of applause'

Why do you think the writer chose to tell us this piece of information?

2
marks

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3. 'Maybe they will encourage you to invent something yourself. Good Luck!'

Are you encouraged to have a go at inventing after reading the text?

Tick one box and explain your reasons in detail below.

☐ Yes

☐ No

2
marks

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4. Why do you think the writer included the section 'Believing In What You Have Invented'?

2
marks

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5. Why do you think the writer chose 'cats' eyes' as an example of an invention?

2
marks

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Reading Raptors can read a writer's mind and know exactly what they're thinking. How about you?

