


# SCOTLAND

## SCOTTISH INVENTIONS





... etwas über die Zeitform  
*simple past* in Frage- und  
Aussagesätzen.

... etwas über schottische  
Erfindungen und Erfinder.

... etwas über den  
Erfinder Graham  
Bell.

... englische Texte zu  
verstehen.

**Baustein lerne ich ...**

**In diesem**

## Durchführung des Bausteins:

1. Ich erledige die Aufgaben in der vorgegebenen Reihenfolge.
2. Ich notiere die Aufgaben in mein Heft.
3. Ich schreibe die Lösungen der Aufgaben ordentlich und in der richtigen Reihenfolge darunter.
4. Wenn ich alle Aufgaben erledigt habe, übergebe ich sie meinem/r Lehrer/in..
5. Ziel ist, dass ich so viel wie möglich alleine erledige.
6. Sollte ich einige Aufgabenstellungen nicht verstehen, hier ein paar Vokabelhilfen:

English	German
to draw	etw. zeichnen
to compare	etw. vergleichen
to note sth. down	etw. notieren
to mark sth.	etw. markieren
to copy	etw. abschreiben
to fill in sth.	etw. einfüllen/ergänzen
to sort sth.	etw. sortieren
an argument	ein Argument/ein Grund
to choose sth.	etw. auswählen
to look up	suchen

**Du kannst dir jederzeit ein Wörterbuch zur Hilfe nehmen.**

## Task 1: What did the Scottish invent?

a) Read the article and mark 8 words that you don't understand, are new for you and/or find interesting.

### Scottish inventions



Despite its small size and low population Scotland has produced some important inventors over the centuries.

In the 18th and 19th century many technological, medical and mechanical discoveries were made there, including the invention of logarithm tables (by John Napier in 1594), the preservation of marmalade (by Janet Keiller in 1797) and the discovery of continuous electric light (by James Bowman Lindsay in 1834) as well as the development of the thermos flask (by James Dewar in 1892), the pneumatic tyre (by John Dunlop in 1888) and the refrigerator (by James Harrison in 1856).

Apart from these there are some other really outstanding inventions that caused a breakthrough: in 1782 James Watt invented the rotative steam engine. It was an improvement to the existing steam engine that resulted in the Industrial Revolution.

In 1839 Kirkpatrick Macmillan developed the first pedal-powered bicycle. It was based on the foot-powered “velocipede” and allowed people to cover longer distances in a shorter time. In the following years, Macmillan’s great invention was copied and manufactured in large numbers, because he hadn’t applied for a patent.

The Scottish physicist James C. Maxwell developed colour photography in 1861. The subject that was shown in his first three-colour photograph was his tartan ribbon.

Alexander Graham Bell, a man from Edinburgh, invented the telephone in 1876. It was a scientific breakthrough for communication all around the world.

Penicillin is a discovery that has changed the face of medicine. In 1928 Alexander Fleming's first idea was to treat diseases. But in 1940 Penicillin helped to save lives of thousands of wounded soldiers.

In 1926 John Logie Baird invented a black and white TV.

It couldn't produce sound and pictures at the same time but nevertheless it was a great invention.

A team of scientists at Edinburgh's Roslin Institute succeeded in cloning the sheep "Dolly" in 1996. Dolly was the clone of an adult sheep and gave birth to a lamb called "Bonnie" in 1998. Dolly died in 2003.



b) Look up the words you marked in the text in a dictionary. Make a grid and write down the German expressions to the words and on which page you found them in the dictionary. If you look up a verb, write down the infinitive form (*Grundform/Infinitiv*).



c)

*Example:*

<b>English</b>	<b>Infinitive</b>	<b>German</b>	<b>Page in the dictionary</b>
<i>inventor</i>	-----	<i>der Erfinder</i>	<i>241</i>
<i>invention</i>	-----	<i>die Erfindung</i>	<i>241</i>
<i>caused</i>	<i>to cause</i>	<i>etw. verursachen</i>	<i>75</i>
<i>preservation</i>	-----	<i>die Konservierung</i>	<i>352</i>
<i>refrigerator</i>	-----	<i>der Kühlschrank</i>	<i>378</i>
<i>breakthrough</i>	-----	<i>der Durchbruch</i>	<i>64</i>
<i>improvement</i>	-----	<i>die Verbesserung</i>	<i>230</i>

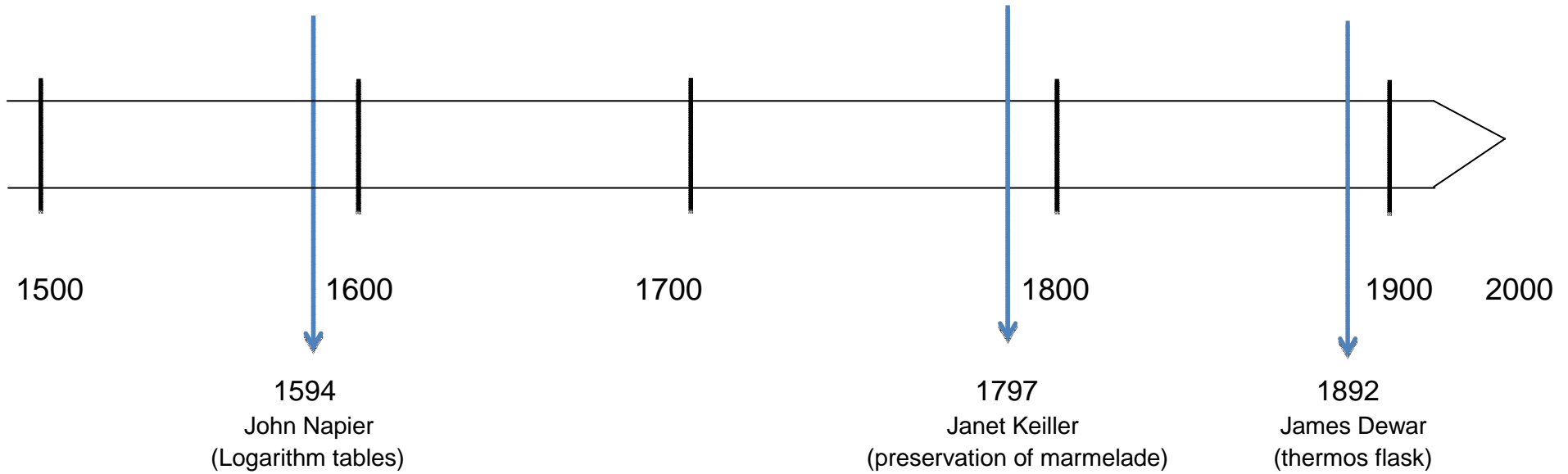
d) Look at the pictures below and find in the text who invented them:

	ERFINDUNG	ERFINDER
1		→ John Logie Baird
2		→
3		→
4		→ Kirkpatrick Macmillan

5		→ James Harrison
6		→



e) Draw a time line and fill in the dates and events.



e) **Which invention** is the most important for you? Why?

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## Task 2: What did the inventors do?

a) Fill in the *simple past* and the *past participle* of the verbs. Compare your solutions with the answer key 1.

	<b>simple past</b>	<b>past participle</b>
(to) produce	<i>produced</i>	have/has <i>produced</i>
(to) cause	caused	have/has caused
(to) invent	invented	have/has invented
(to) manufacture		have/has
(to) allow		have/has
(to) develop		have/has
(to) change		have/has
(to) make		have/has
(to) be		have/has
(to) give		have/has

**Task 3: Are these the right inventions?      Let's test your knowledge!**

a) Look at the grid below and **write down** what the inventors **did** and **didn't do**.

Example: *"John Napier didn't write a timetable. He wrote the logarithm tables. "*

*"Janet Keiller didn't preserve juice. She preserved marmelade."*

*"James Bowman Lindsay didn't produce the candle light. He produced the continuous electric light."*

John Napier	write	a timetable
		the logarithm tables
Janet Keiller	preserve	marmalade
		juice
James Bowman Lindsay	produce	continuous electric light
		candle light
James Dewar	develop	a glass bottle
		a thermos flask
John Dunlop	discover	the pneumatic tyres
		wooden wheel
James Harrison	invent	a refridgerator
		a heater

James Watt	build	a motor engine
		a steam engine
Kirkpatrick Macmillan	construct	a motorbike
		a pedalpowered bicycle
James C. Maxwell	take	the first colour photograph
		a black and white photograph
Alexander GrahamBell	communicate	by telephone
		via the Internet
Alexander Fleming	discover	a cough mixture
		penicillin
John Logie Baird	invent	television
		radio
Scientists at Roslin Institute	clone	a goat
		the sheep Dolly

#### Task 4: Talking about an inventor



#### The invention of the telephone

Although the telephone was invented in the USA, it was invented by a Scotsman: **Alexander Graham Bell.**

- a) Read the text about Alexander Graham Bell.
- b) Look up any new words in your dictionary.

Alexander Graham Bell was born in Edinburgh, Scotland, on March 3rd, 1847.

He had always been interested in the study of sound and so he started to teach at university when he was 16.

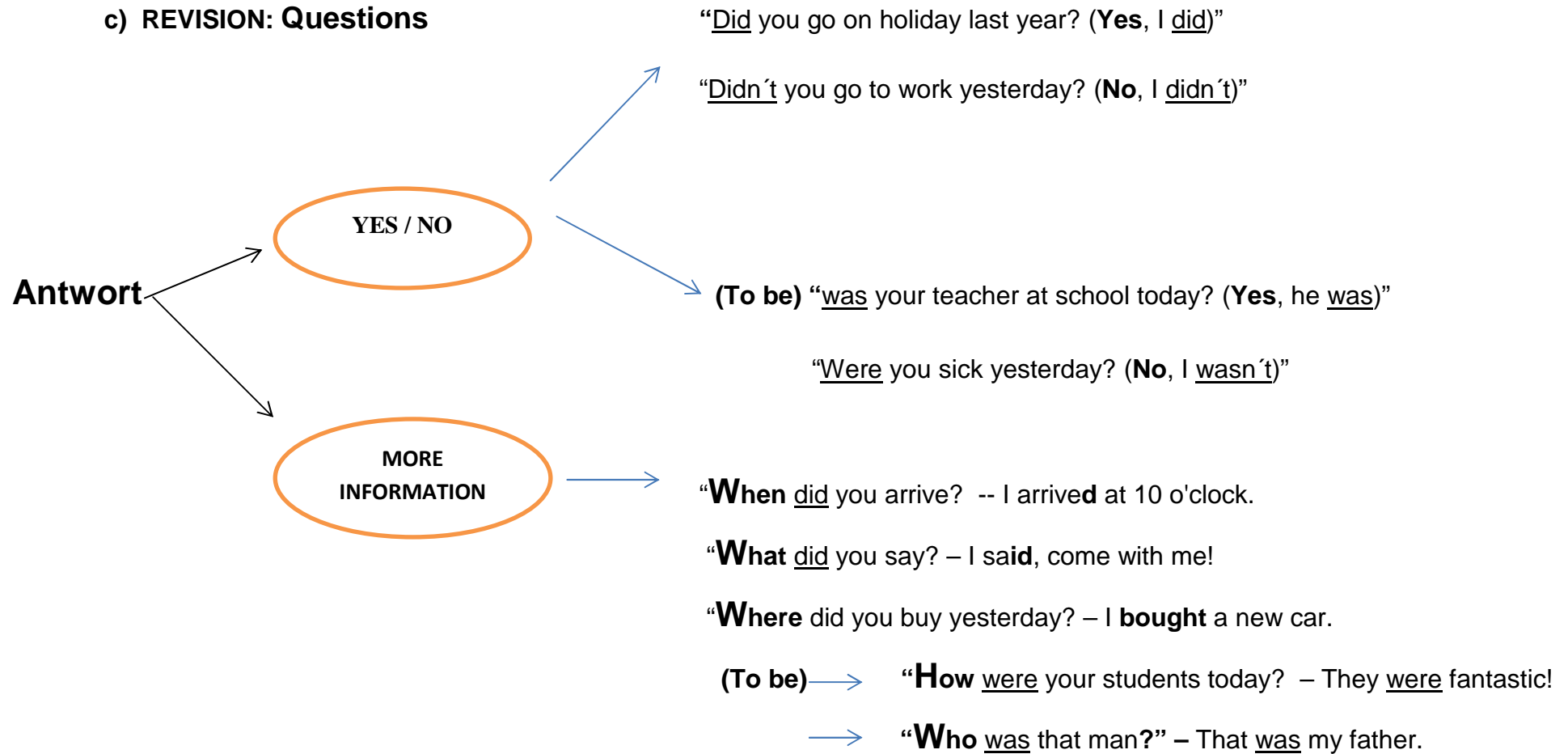
At the age of twenty-six he moved to Boston, USA, and worked as a professor at Boston University. His aim was to transmit words electronically. He constructed a new type of transmitter and made a lot of experiments.

In March 1876 he sent his assistant Watson to a different room on the next floor of the building – far away from him. While Bell was assembling the last parts of his telephone, some battery acid dripped onto his trousers. He called for his assistant Watson. Through the instrument, Watson heard the following words:

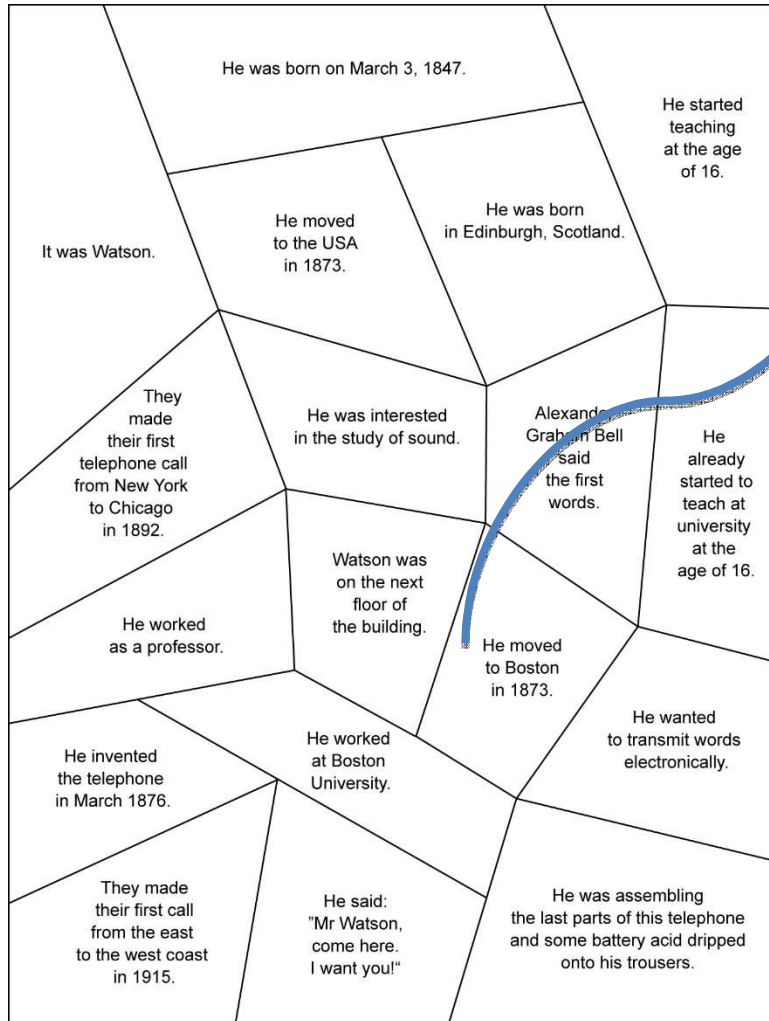
“Mr. Watson, come here. I want you!”, and Watson went to Bell’s room. It was a great invention.

In 1892 Watson and Bell made their first telephone call from New York to Chicago and 23 years later they made their first call from the east to the west coast.

c) REVISION: Questions



d) You meet a Scotsman. You are interested in Bell's life and his invention, so you ask a lot of questions. Write a question to each of these answers:



Example:

1. - Question: "When did he move to Boston?"  
- Answer: "He moved to Boston in 1873."
2. - Question: When was he born?  
- Answer: "He was born on March 3rd, 1847"
3. - Question: Who was it?  
- Answer: "It was Watson."

## Task 5: A story about the invention of the pedal bike

The velocipede was the first bike. It was invented by a German.

a) Write a story about the invention of the bike. Put the words of the jumbled sentences into the right order.

### The invention of the pedal bike

Example:

1. the German baron – built – a two-wheel bike – Karl Friedrich Christian Ludwig Drais von Sauerbronn

*The German baron Karl Friedrich Christian Ludwig Drais von Sauerbronn built a two wheel bike.*

2. had to sit – and walk – he – on the saddle

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3. was called – his invention – the “velocipede”

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4. helped – people – four times faster – on foot only – the velocipede – to move – than

*The velocipede helped people to move four times faster than on foot only.*





5. was used – the velocipede – until 1839

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6. added – Kirkpatrick Macmillan – that moved – two pedals – the back wheel – in 1839

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7. allowed – to cover – this pedal-powered bicycle – in a shorter time – people – longer distances

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8. became – popular – it – very

*It became very popular.*

9. was manufactured – it – in large numbers – that is why

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## Test yourself

a) Read the text. Fill in the missing verbs in the right tense.

### Colour TV

John Logie Baird \_\_\_\_\_ was (to be) a Scot. He \_\_\_\_\_ (to live) from 1888 to 1946 and \_\_\_\_\_ (to invent) colour TV.

John Baird liked (to like) to do experiments when he \_\_\_\_\_ (to be) a child.

He \_\_\_\_\_ (not construct) a telephone by using ropes and tins, as children usually do, but he \_\_\_\_\_ (to try) something extraordinary.

He developed (to develop) an electrical system and \_\_\_\_\_ (to draw) cables from his parents' house to the homes of his four friends. He \_\_\_\_\_ (want) to use cables to transmit language. It \_\_\_\_\_ (to be) a tragedy that he \_\_\_\_\_ (to have to) remove the cables after a short time, because they had hung deep across the road and \_\_\_\_\_ (to be) dangerous.

John Baird invented (to invent) the black and white TV, as well. But in 1928 he \_\_\_\_\_ (to become) a star when he \_\_\_\_\_ (to be) successful in colour transmitting. On July 3<sup>rd</sup>, 1928 he \_\_\_\_\_ (to send) the first colour pictures from London

to New York.

After Baird's first experiment with colour TV in 1928, people \_\_\_\_\_(to have to) wait for another 40 years to get the chance for colour TV. In 1967 the German Chancellor Willy Brandt \_\_\_\_\_ (to press) a red button and the first colour film could be seen.