

INVENTIONS WORKSHEET - KEY

1. **Use the link to do the quiz:**
<https://forms.gle/rUxK1zh3n425ycrt8>

2. **Match the inventions with the inventors:**

telephone	→ Alexander Fleming
penicillin	→ Thomas Edison
electric lightbulb	→ Karl von Drais
bicycle	→ Alexander Graham Bell
automobile assembly line	→ Martin Cooper
mobile phone	→ Henry Ford

3. **Create two groups. Group 'A' read about the invention of the bicycle. Group 'B' fill in the chart of the 'telephone'.**

bike

<https://artsandculture.google.com/incognito/story/the-invention-of-the-bicycle/mwXRBYATtgPOLg>

inventor	the invention, modification	the name of the invention	date
Karl Drais	----	'running machine'	1817
Louis Joseph Dineur	----	velocipede	----
Julien-Benjamin Rousel	rotating chain drive	walking vehicle (with a hand-powered mechanism)	1834
Alexandre Mercier	differentiated the two wheels	----	1843
Jules Sourisseau	circular pedalling	----	1853
Benjamin Geslin	tension-mounted metal spokes and axles	----	1855
Louis Alexandre Blar Francois Ernest Garin	recumbent/reclining bike	----	1857
Alexandre Garcier	2 gears	bicycle	----
Clément Ader	tire	----	1868
Francois Nicolet	independent tires	----	1869
Joseph Marié	electric bike		1869

Emile Viarengo de Forville	bikes for women	----	1871
Emile Viarengo	side-saddle bike	----	1874
Peugot	Peugeot speed bike	----	1885

mobile

<https://www.sciencemuseum.org.uk/objects-and-stories/telephone-and-how-it-changed-us>

inventor	the invention, modernization	the name of the invention	year
Alexander G. Bell, Hubbard	telegraphy	----	1870's
Elisa Gray? A. G. Bell?	telephone	----	1876
Strowger	telephone switchboard system	----	----
Strowger	a machinery to connect telephone calls	'girl-less telephone'	----
----	the first automatic telephone exchange in the UK	----	1912
Alec Reeves	digital exchange system	----	1937
Chad Varah	the 'Samaritarians'	----	1953
----	MAN 9000	a number for suicidal people – the first helpline	1953
Bell Labs in the USA	cellular phone network	----	1970's
Martin Cooper	first hand-held phone	----	----
Motorola Company	----	DynaTAC	1984
Sophie Wilson	the first development of ARM - microprocessor	----	early 1980's

----	first base station	----	1984
----	a common standard - GSM	----	1980
----	3 G in the UK		2003
----	4 G in the UK		2012
----	5 G	----	2019

4. Prepare to give a 3-minute talk about the invention.

5. Use the correct tense, voice and the form of the verb:

Bicycles

A German baron named (name) Karl von Drais made (make) the first major development when he created (create) a steerable, two-wheeled contraption in 1817.

This early version continued to be improved (continue to improve) upon across Europe.

Pierre Michaux and Ernest Michaux developed (develop) prototypes with pedals attached (attach) to the front wheel. These were the first machines to be called "bicycles," but they were known (know) as "boneshakers" too for their rough ride.

The design of the present-day bicycle has remained (remain) much the same since John Kemp Starley designed (design) the Rover Safety Bicycle, the first embodiment of the modern vehicle.

The early safety bicycles had had (have) solid rubber tires. In 1888 the pneumatic tire was introduced (introduce) by John Boyd Dunlop, a Scottish veterinarian living (live) in Belfast. These provide (provide) a more comfortable ride with greatly reduced (reduce) rolling (roll) resistance.

source: <https://artsandculture.google.com/incognito/story/the-invention-of-the-bicycle/mwXRBYATtgPOLg>

6. Use the correct form of the words:

Mobile phones

The innovation of the cell phone began in 1900 when an ___**inventor**___ (invent) named Reginald Fessenden created the first human voice ___**transmitter**___ (transmit) using radio waves. In 1947, Lars Magnus invented car phones and ___**engineer**___ (engine) William Rae Young worked on radio towers for telephone companies. They all started to ___**compete**___ (competition).

American ___**engineer**___ (engine) Martin Cooper was put in charge of a project to invent the cell phone, and he believed that it should be portable, not ___**plugged**___ (plug) into a car. Cooper invented the first handheld ___**wireless**___ (wire) cell phone in 1973, which allowed people to talk for only 35 minutes before the battery ran out. In 1983, they made their ___**invention**___ (invent) available to the public at a cost of \$3,995, and it became a huge ___**success**___ (succeed). However, as time went on, companies began building wireless phones that were ___**smaller**___ (small), lighter, and had better digital service. This made ___**personal**___ (person) cell phones more affordable and led to the cell phone revolution in the 90s. In 1994, IBM's Simon was released as the first smartphone with a touchscreen and apps. Ever since then, technology keeps ___**getting**___ (get) better.

source: <https://www.sciencemuseum.org.uk/objects-and-stories/telephone-and-how-it-changed-us>

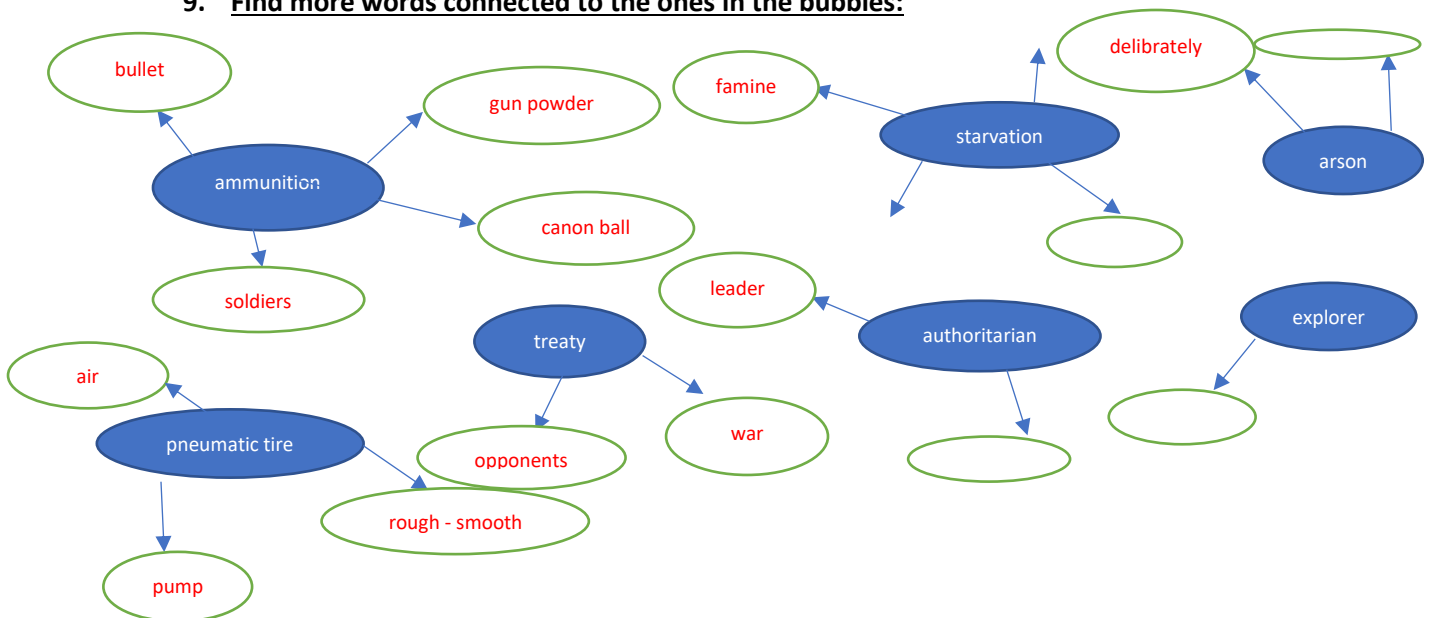
7. Create conditional sentences using the words given:

1. If early bikes ___**hadn't had**___ (not have) a rough ride, they ___**wouldn't have been called**___ (not be called) 'boneshakers'.
2. If John Kemp Starley ___**had not designed**___ (not design) the Rover Safety Bicycle, we ___**wouldn't have**___ (have) the modern version of bikes now.
3. We ___**wouldn't be able to have**___ (not be able to have) smooth rides now if in 1888 the pneumatic tire ___**hadn't been introduced**___ (introduce) by John Boyd Dunlop.
4. If the people in Congo ___**hadn't harvested**___ (not harvest) so much rubber, bicycles ___**wouldn't have become**___ (not become) so popular.
5. If early mobiles ___**hadn't been**___ (not be) so expensive, poorer people ___**would/could have afforded**___ (afford) them.
6. Fewer people in Congo ___**would die**___ (die) in mines today if big companies ___**found**___ (find) a solution to replacing coltan and ___**improved**___ (improve) the living and working conditions there.
7. If Leopold ___**hadn't been**___ (not be) so brutal, people in Congo ___**would have**___ (have) a better life now.
8. It ___**would be**___ (be) better for everyone if Belgium ___**apologised**___ (apologise).

8. Match the words with their meanings:

acquire	a thin branch of a tree
twig	an elastic substance
noble	beauty
rubber	a formal, serious promise
scramble	buy or obtain
majesty	become stronger and more certain
pledge	good, honest, moral
consolidate	move quickly

9. Find more words connected to the ones in the bubbles:



10. Watch a video about Leopold II and his brutality. What is the connection between Leopold and bicycles?

<https://www.youtube.com/watch?v=MU4vua2kNQY&t=14s>

a, What do these numbers refer to?

110 twigs were laid by Chief Lontulu in the name of the dead people killed in his village

4 piles of twigs were made

90% of Africa was colonised by some European countries

450 Stanley deceived some African leaders into signing 450 treaties allowing for land use

80 the colony in Africa was 80 times bigger than Belgium

20 million people lived on the colony

1890 is the year when G.W. Williams accused Leopold

50 million francs was given to Leopold by the Belgian state

10 million people died

1960 independence in Congo

b, What do these names refer to?

Lontulu an African Chief who was the first person to fight against the brutal actions of Leopold II

Henry Morton Stanley a colonial explorer

John Boyd Dunlop is a Scottish inventor who invented pneumatic tire, with which he created market to rubber

George Washington Williams is an American journalist who accused Leopold of many crimes

Roger Casement wrote a report about the brutality

Patrice Lumumba was the first prime minister in Congo – later unseated and assassinated

11. Link to the word practice on Quizlet:

<https://quizlet.com/906700669/leopold-ii-rubber-vines-flash-cards/?i=1b84td&x=1jqd>

12. Watch a video about COLTAN, the mineral we use in some of our gadgets. What is the connection between cobalt and your mobile phone?

<https://www.youtube.com/watch?v=AA6BnitgdP8&t=5s>

a, Match the following words to make meaningful expressions:

in dangerous	line
end up	site
assembly	conditions
digital	conditions
mine	revolution
appalling	of
apologise	mine
proud	in smartphones
artisanal	for
double A	as much
relic	to
when it comes to	battery
3 times	electric cars
delight	of another age
deeply committed	in

b, Tell about cobalt and the mines in Congo using the expressions.

13. Watch a video about a vehicle invented by the people living in Congo:

<https://www.youtube.com/watch?v=OGVpl9NXTbU&t=19s>

1. What's its name? **Chukutu**
2. What is it good for? **transportation**
3. What is it made of? **wood, rubber suspension, ...**
4. What are the special features? **wheels, brake, wooden boards**
5. What does it mean when you have a vehicle like this? **you are better off**

14. <https://quizlet.com/906714247/coltan-mines-flash-cards/?i=1b84td&x=1jqt>