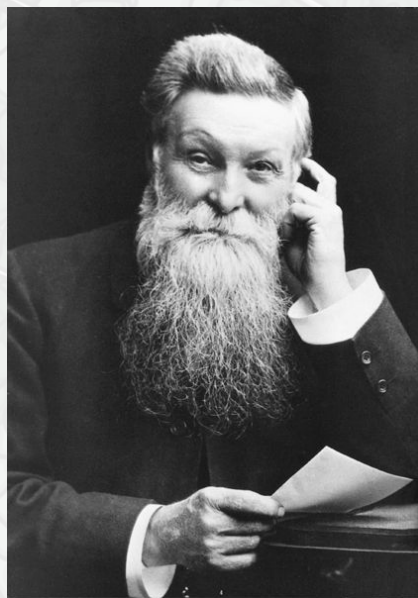




# Science

## Uses of Everyday Materials

# Discovering New Materials



# Learning Challenge

Can I tell you what I know about the inventor John McAdam  
Discovering new materials?

## Remember tos

- I can tell you the name of the new process John McAdam invented.
- I can explain how his invention has impacted on life today.
- I can tell you two interesting facts about John McAdam's life.



# John McAdam

## Early Life

John Loudon McAdam was born in Scotland on 21<sup>st</sup> September 1756 and was the youngest of 10 children.

When he was 14 his father died and John went to live with his uncle William, who was a merchant in New York. John also became a merchant and married Gloriana Nicoll.

In 1783, with his wife and two children, John McAdam moved back to Scotland and bought Sauchrie, an estate in Ayrshire.





# John McAdam

## Road Building



John McAdam became interested in road building and experimented with using different materials.

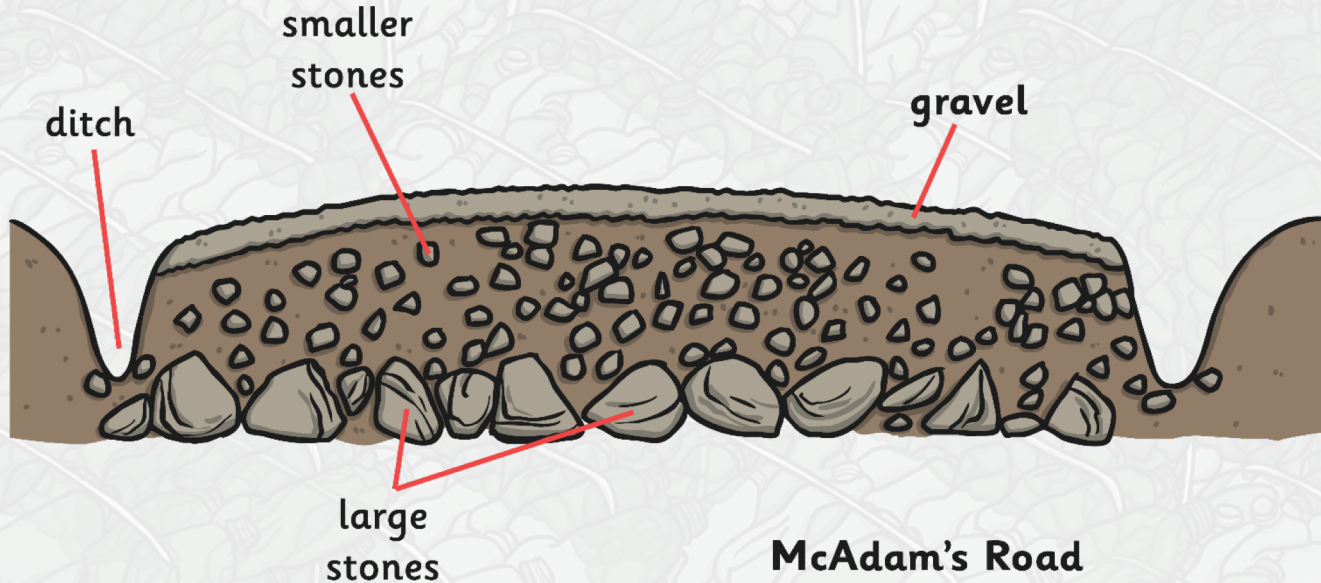
Roads at the time were often muddy and dangerous. Others were cobbled and very bumpy to travel over.

John McAdam invented a new process called '**macadamisation**', which created smooth hard roads.





# Macadamisation



**Macadamisation** was the name given to John McAdam's construction process of building roads.

Large stones were placed at the bottom and small stones and gravel were crushed on the top to create the surface and structure. The roads were also curved, so that rainwater ran off the surface, instead of creating big puddles in the middle of the road.



# McAdamisation

## Success



Macadamisation was a success and roads were built in this way across the world. This photo shows the building of a macadam road in Maryland in 1823.



In 1819 the Parliamentary Committee praised his work and the efficiency and economy of his methods.

By 1923, seventy Road Trusts were consulting John McAdam and his 3 sons had moved from Scotland to help him.

The term macadam road is not often used today.



# John McAdam

## Later Life



John McAdam held **patents** on his methods, but they were so popular that they were not protected.

Parliament eventually awarded him some money, although he was never fully compensated for his work, nor did he receive royalties.

Later in his life he was offered a knighthood, although he turned it down and passed the honour to his son.

John McAdam died in Moffat on November 26<sup>th</sup> in 1836.





# John McAdam

## Tarmac



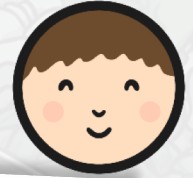
Tar was later added to macadam roads to stabilise them. This became known as **tarmacadam**, which is now commonly known as **tarmac**.



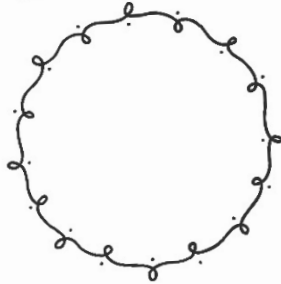
How many places can you think of where **tarmac** is used today?



# Fact File

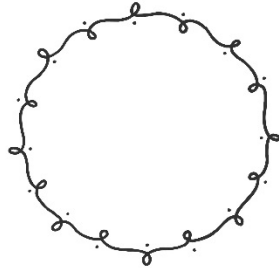


John McAdam



Handwriting practice area with a dashed border and several lines for writing.

John McAdam



## Early Life

John McAdam was born in \_\_\_\_\_  
in 1756.

When he was 14 he moved to \_\_\_\_\_  
with his \_\_\_\_\_.

He died in \_\_\_\_\_.

Word Bank	1836	roads	gravel	macadamisation	uncle
	New York	Scotland	rainwater	success	smoother

## Road Building

John invented a new way to build \_\_\_\_\_ called \_\_\_\_\_.

He used big stones with smaller stones and \_\_\_\_\_  
on top.

He made the roads curved so \_\_\_\_\_ would run off.

His idea was a \_\_\_\_\_ and lots of people built roads  
using his ideas.

He helped lots of other people to build \_\_\_\_\_ roads.

John McAdam

## Early Life

## Impact Today



# Other New Materials



Can you match the correct person with the new process or material they invented?



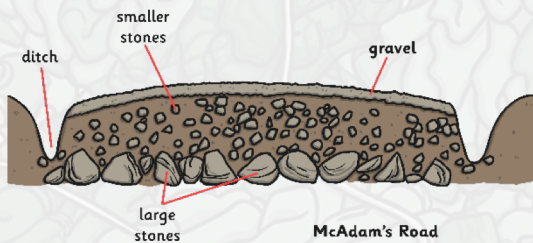
John Dunlop



Charles Macintosh



John McAdam

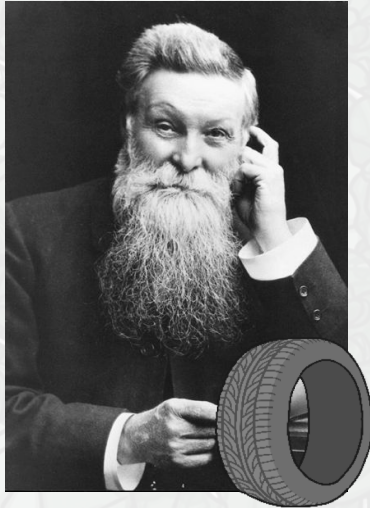




# Other New Materials



Can you match the correct person with the new process or material they invented?



**John Dunlop** was a Scottish inventor who invented the air-filled rubber tyre. It was originally invented in 1887 to use with bicycles, and then became very useful when automobiles were developed.



**Charles Macintosh** was a Scottish inventor and chemist who invented waterproof fabrics in 1818. The Mackintosh raincoat was introduced in 1824.



**John McAdam** was a Scottish engineer who experimented with using new materials to build roads, inventing a new process called 'macadamisation'.