



York's 'Secret Science' Walk

WELCOME and thank you for taking part in our special science walk. We certainly hope you enjoy the next hour or so – taking a leisurely stroll around our beautiful city whilst hopefully learning a little more of York's often 'hidden' history.

We've thrown in a few questions – the answers to which you will mostly find along the way if you keep your eyes peeled! Please complete your answers on the sheet provided at the back of this booklet.

We begin at the **National Railway Museum** – the largest railway museum in the world!



Here you can tap into over 300 years of history and view over a million wonderful objects. The NRM at York is one of a family of museums which collectively make up the UK's National Museum of Science & Industry (NMSI). The NMSI is devoted to the history and contemporary practice of science, medicine, technology, industry and media. Other high profile museums within the group include London's Science Museum and the National Media Museum at Bradford.

Please make your way to the National Railway Museum's **Signalling Centre (off the Great Hall)** to help you answer the first couple of questions.



Signalling has always been a vital exercise in safety. Of course early signalling was all hand operated. However, today computers are used to control large sections of the nation's railway lines. York signalling centre controls 50 miles of track between Doncaster and Northallerton.



1. Which four letters create an abbreviation to describe the type of signalling centre based in York?



2. On the computer screens at the signalling centre, what letter denotes a train heading to London Kings Cross?

It's now time to leave the NRM. Walk down Leeman Road, under the railway bridge, heading towards York's city centre.

Immediately after emerging from under the bridge, on the left-hand side of the road, nestled between the bridge and the Royal Mail Sorting Office, take the pathway off to the left, signposted **Marygate**. At the end of the pathway, you will see **Scarborough Bridge** across the river. Do not cross the bridge, but **turn right and walk along the riverside**.



George Hudson paid for Scarborough Bridge to carry his railway line to Scarborough. The flood defences near the bridge are designed to cope with York's constant threat of flooding. They consist of earthen floodbanks and concrete flood walls.

Keep walking along the riverside until you reach **Lendal Bridge**. Cross the river via this bridge until you reach the tower on the far side.



Lendal Tower became York's first waterworks in 1682.



3. How many gallons of water, could the works pump?

Walk along **Museum Street** until you reach **Lendal**. **Turn right** on to Lendal.



On Lendal you will find a very large Georgian building set back from the road. This building was originally Dr Winteringham's House. He was a Physician at York County Hospital in the 18th Century.



4. What is the name of the character depicted in the stone carving above the front door of the house?



5. How many malts are used in the brewing of 'The Last Judgement'? (a unique beer brewed exclusively for The Judges' Lodgings)?

Continue down Lendal until you reach **St Helen's Square**. Look for a Church.



This Church was the parish church of the glass painters, many of whom lived around the corner on Stonegate. These craftsmen have brought colour to York's churches for over 800 years. Making a stained glass window is a complex process. Designs were sketched out on a whitewashed table and the lead lines marking out important parts of the design were sketched in. Coloured glass was created using metallic oxides, then the surface detail was painted on. Finally the various pieces were joined together using soft lead strip, and soldered onto the supporting bars of the window. The Church is dedicated to St Helena, mother of Constantine The Great.



6. St Helena is the Patron Saint of which industry?

Please now leave the Church, turn the corner and proceed to **Stonegate**.

Look for the **York Medical Society Rooms**.



The society was founded in 1832 by eight medical men for the purpose 'of promoting and diffusing medical knowledge'. The building has been owned by the medical society since 1944. In the 19th century it was owned by three generations of the Anderson family. Tempest Anderson was an amateur Volcanologist and photographer. He observed eruptions in the West Indies. By profession he was an ophthalmic surgeon.



7. What are the names of the two other partners in his practice?

Proceed along Stonegate looking for the building at **50 Stonegate**.



This was once the shop of Thomas Cooke, the world-renowned Telescope Maker. One of Cooke's greatest achievements was the 25 inch 'Newall' refractor, the largest in the world at the time. He built the refractor telescope which is today housed in York Observatory.



8. What does the shop on this site sell today?

At the end of Stonegate, **turn right** on to **Low Petergate**.

You are now looking for **Kings Square** which is named after the site of the Viking Kings' Palace.



King Harold Blatand of Norway and Denmark was well respected for unifying the two countries. The Anglicised version of his name was Harold Bluetooth.

In the early 1990s Nokia, Ericsson and Intel were developing a new technology to unify different electronic devices via a common interface. They decided to name it after King 'Bluetooth'.

Find **Goodramgate** and walk down it, away from the city centre.

You are looking for the shop where George Hudson worked as a draper – but there's not much drapery happening there now.

When you spot a 'National Treasure' on the corner of a 'Vicars' Street, you'll be in the right place.



George Hudson inherited £30,000 at the age of 27. After investing in the North Midland Railway Company he went on to control 1000 miles of track across Britain. His nickname was The Railway King.



9. How many times was George Hudson Lord Mayor of York?

Now walk towards the largest **Medieval Cathedral North of The Alps**. You are now looking for signs to **The Treasurer's House**. On the way, keep an eye out for a **red post box**. This red post box dates back to when a King was on the throne. **Walk through the Minster gates**.



It was from The Treasurer's House that John Goodricke, a deaf and dumb Astronomer, observed a special star. The brightness of the star was known to change in a predictable way. He discovered it was actually a double star, and the light from one star was reduced as the other passed in front of it. The clear view of the Minster enabled him to use the central tower as a fixed point for measuring the movement of stars.

He was awarded a medal by the Royal Society but died a few months later at the age of 21. His work is still very important in Astronomy today.



10. What was the name of the star Goodricke observed?

Walk through **Deans Park** and **turn right** on to **Petergate**. Walk down Petergate and through **Bootham Bar**. Then forward into **Exhibition Square**.



Exhibition square was built in 1879 as part of the Fine Art and Industrial Exhibition. The event contained all the latest technology developments and various works of art. The exhibition received over half a million visitors and made a profit of over £1 million in today's value. City of York Council later bought the hall and transformed it to York Art Gallery.

Look carefully on the **front of the Art Gallery**. You can see a picture showing the death of a famous inventor. One of his numerous inventions was a pair of scissors. However, he was perhaps more famous as an Artist. Crack the code and you will work out his name.

Please Turn Over



11. Who was the Inventor?

Standing in Exhibition Square, turn to face the Minster then turn **left**, head under the arch and proceed along **Bootham**. Find **Bootham School**.



As part of The School you will find the home of a famous Quaker called Joseph Rowntree. He joined his brother's small confectionery business and turned it into an international corporation employing over 7000 people.

He is as equally well known for his social reform.



12. How many trusts were started from money which he bestowed upon them in his will?



13. What are the names of the Trusts? (you may need to think logically and guess on this one!)

Now look for the **round stone tower** on the corner of **Marygate**.

Cross the road (please do take care when crossing this road) and walk down **Marygate**.



St Mary's Tower

In 1644 York was besieged by Parliamentary armies. Troops under the command of the Earl of Manchester tunnelled under Bootham and placed a powerful charge beneath the tower. The explosion destroyed the Tower. You can see where it was later rebuilt with a smaller diameter.

Continue along Marygate.



On your left you will see part of the medieval wall which surrounded St Mary's Abbey. Take a closer look and you will find a number of innovative wooden shutters in the wall. These were designed to be closed after firing to defend the troops from return fire. The shutters open and close using grooves in the wall.



14. Where is the only other place in England to have these grooves?

Keep walking until you reach the entrance for the **Museum Gardens**, next to St Olaves Church. Enter Museum Gardens.



In the Gardens you will find York Observatory. The Observatory is home to a clock built in 1811 which tells the time based on the positions of the stars. This clock was built by Thomas Cooke of Stonegate. All the clocks in York used to be set by this clock for the fee of a sixpence.



15. What is the Observatory's Longitude and Latitude?



The British Association for the Advancement of Science met in the Museum Gardens for its inaugural meeting in 1831. The founders chose York because of the City's central location and its burgeoning reputation for the sciences. The Yorkshire Museum provided a fantastic venue. The Association's main objective was to develop science and to ensure the discipline received the respect it fully deserved. The British Science Association, as it is known today, is now recognised as a global authority on Science. On behalf of the British Science Association, York has hosted the annual BA Festival of Science on several occasions, most recently in 2007.

Please Turn Over (for the last time!)

Congratulations! You have now completed the ‘Secret Science’ Walk.

Thank you so much for taking part and we hope you have enjoyed it.

But!...Before you go!...

We’ve got one final question which you may/may not know the answer to. If you’re not sure – some quick and simple research at home should do the trick...



The University of York, recognised globally for its research excellence, has managed to develop its world-leading reputation in a relatively short amount of time having been established in 1963.



16. Who was the first-ever Chancellor of the University of York?

So That Really Is It! Complete!

By undertaking the walk and discovering the numerous nuggets of ‘bite-size’ science facts along the way, we do hope we may have helped inspire you to delve a little deeper into York’s ‘Scientriffic’ Credentials.

We also hope you are curious to find out how many questions you answered correctly on the walk, or indeed find out the answers to those which may have bamboozled! Please send your answer sheet to:

Events & Marketing Coordinator, Science City York, Enterprise House, Innovation Way, Heslington, York YO10 5NY.

As long as you have included your name and contact details we will be able to let you know how well you did and send you a special **Certificate of Achievement** to prove your science detective credentials!



*York is alive with science, creativity and innovation. If you want to find out more, Science City York hosts the city’s monthly ‘Cafe Scientifique’ – a thriving, informal public talk and debate exploring key science-based issues – informing and encouraging lively discussion. And there’s a further opportunity each year to get to the heart of the science that matters as the city hosts the hugely popular **York Festival of Science and Technology**.*

To find out more visit www.sciencecityyork.org.uk
or follow on [twitter@sciencecityyork](https://twitter.com/sciencecityyork)

With special thanks to Exploring York www.exploringyork.com



York's 'Secret Science' Walk: Answer Sheet

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15	<i>Longitude:</i>	<i>Latitude:</i>
16		

To find out how many you got correct and to discover the answers to those you weren't sure of please complete contact details below and **post just your answer sheet** to:

Events & Marketing Coordinator, Science City York, Enterprise House, Innovation Way, Heslington, York YO10 5NY.

Your Details – Please complete to receive your certificate

Name

Postal Address

Post code

Email

Please TICK HERE if you would like to receive email updates on Cafe Scientifique and the York Festival of Science and Technology. Your details **WILL NOT** be shared with any third parties.