

SMITH OF DERBY
CLOCKMAKERS ♦ EST. 1856



**BRITISH
SCIENCE
WEEK**

8-17 March

**Teacher Resource Pack
(With Primary in Mind)**

John Smith Apprentice Clockmaker

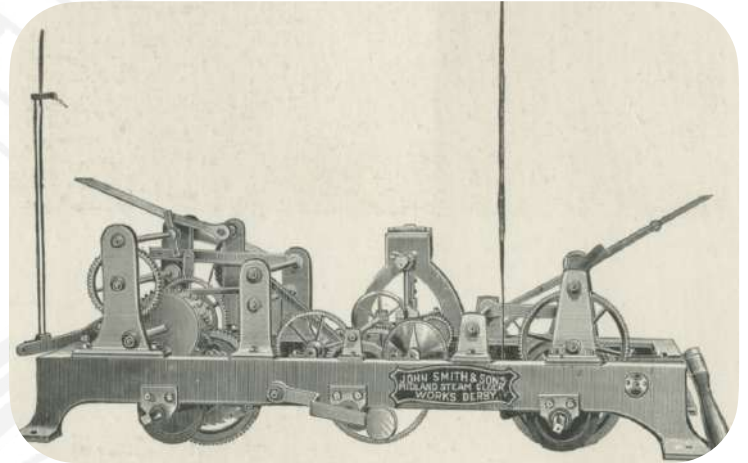
John Smith (1813-1886) was an apprentice to a Clockmaker called John Whitehurst. John Smith learnt a huge amount about accurate timekeeping and engineering and decided to set up his own clock business in 1856 in Derby. This family business continues to this day and is responsible for looking after 1000s of clocks in the UK and around the world.



What is a Turret Clock?

A turret clock or tower clock is a clock designed to be mounted high in the wall of a building, usually in a clock tower, in public buildings such as churches, university buildings, and town halls. As a public amenity to enable the community to tell the time, it has a large face visible from far away, and often a striking mechanism which rings bells upon the hours.





Question Time

1) Humans first kept time by observing which objects?

2) Sundials were used in Ancient Egypt in 1500 BCE. What is the main problem with this type of time keeping?

3) J. B Joyce & Co of Whitchurch, established in 1690 are the _____ clock manufacturers in the world.

4) The tallest clock tower in the UK was made by Smith of Derby in which city?

5) Smith of Derby Clockmakers were founded by John Smith in 1856 after he spent time as an _____, learning from John Whitehurst.

6) Smith of Derby have made clocks around the world including one of the remotest for the _____ of Tonga.

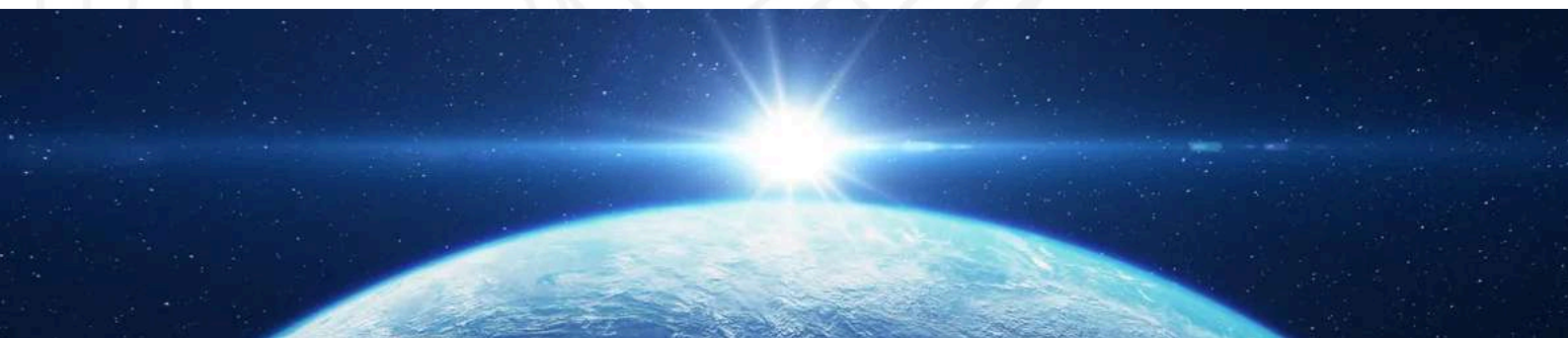
The first complete Turret Clock made by John Smith in 1864

7) The most accurate clocks in the world, which use lasers to measure the vibration of atoms are known as what?

8) The tallest clock tower in the world is in which country?

9) Scotland's best known clockmakers have the name Richie's of _____.

10) Britain's oldest working clock, which has ticked more than 500 million times, is at Salisbury Cathedral and was made in which century?





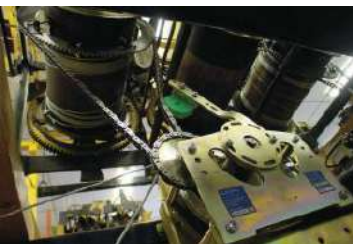
1. _____: linkage, levers and timing. We can install electric control too.



2. _____: we check and renew pulleys, cables and fixings to ensure all are fail-safe.



3. _____: the beating heart of the clock. Regular care will keep it alive.



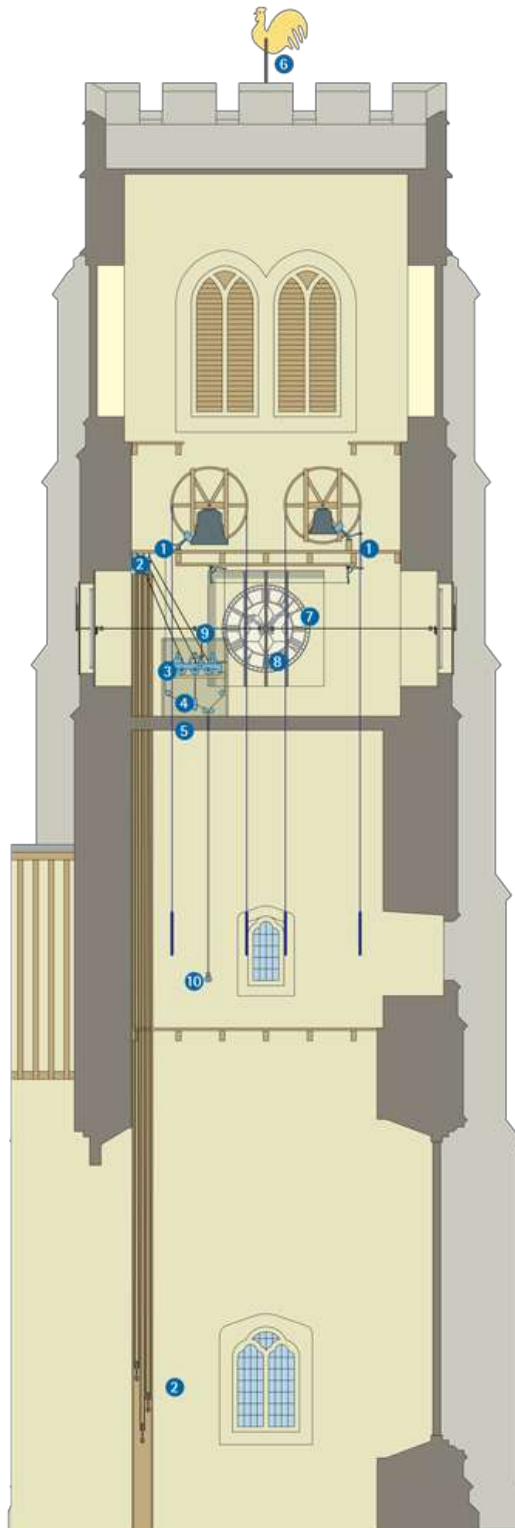
4. _____: Saves all the hard work with fail-safe low voltage units



5. _____: always correct with our pendulum arrest/ release. Perfect for an autowind equipped clock

The Clocktower Fill in the Blanks

Words for the blanks:
WEIGHTS, WIND VANES, DIAL-WORKS,
TRANSMISSION, TIMEKEEPING, BELL
SAFETY, BELL CHIMES, WINDING, DIAL
RESTORATION, MOVEMENT



6. _____: used for indicating wind direction



7. _____: not just redecoration. Fixings and bearings are serviced, the best paint and gold leaf are used.



9. _____: the gears to drive and balance the hands require regular maintenance.



10. _____: links the movement to the dials and requires regular maintenance.



11. _____: Vital for change ringing, our pull-o's are mechanical or electrical with night silencing



SMITH OF DERBY GROUP

Maker ID

Smith of Derby Group is a group of four of the UK's clockmaking companies, who have joined over the years to share resources and knowledge.

Over previous decades the four companies developed a means of identifying themselves on the hands of the clocks they made.

Identification challenge:

Identify the maker of the turret clock nearest you. Not all clock hands have these identifiers, but a great many do, so be sure to take a look.

If you still aren't sure, the church, town hall or other building may be able to tell you the maker, with the name often on a boiler plate attached to the clock.



Smith of Derby



Richie's of
Edinburgh



Joyce's of
Whitchurch



Potts of Leeds

Answers to Question Time Questions:

1. Sun, Moon and Stars
2. You can't measure time in the dark or on cloudy days
3. Oldest
4. Birmingham (Chamberlain Memorial Clock Tower)
5. Apprentice
6. Queen
7. Atomic Clocks
8. Saudi Arabia (Makkah Clock Royal Tower in Mecca)
9. Edinburgh
10. 14th Century





Time for Creativity!

Design a Clock Competition

Calling all aspiring designers... At Smith of Derby, we are on the lookout for your creative minds to help us design a new clock.

Do you love telling time, drawing, and using your imagination?

Then unleash your creativity and design a brand-new clock hand, clock dial, or even a whole clock tower!



Here's what you need to do:

- 1. Choose your project:** Design a brand new:
 - **Clock Hand:** Will your hand be shaped like a spaceship, a flower, or maybe your favourite animal?
 - **Clock Dial:** Use your creativity to design a whole new way to tell time! Will it have numbers, shapes, or something completely different?
 - **Clock Tower:** Design a unique and eye-catching clock tower, complete with a clock face and possibly even bells!

2. Get inspired: Visit the Projects page of our website www.smithofderby.com/smith-of-derby-clock-projects/ to see some of our amazing clocks and designs for inspiration!



3. Get creative: Use any materials you like to create your design, like paper, paint, pencils, crayons, or even cardboard!

4. Show us your work!: Ask your teacher to help you submit your design.



5. **Submission Date:** All entries must be submitted to your teacher by **Friday the 22nd March**.

Your teacher will then choose the best entries from your class to submit to us by the 27th March, emailing nicholas.whitworth@smithofderby.com

The Prize!

The winning entry, chosen by the Head of Design at Smith of Derby, will receive an amazing prize!

You, along with up to 10 classmates, will get to:

- **Visit our company!** We'll give you a tour and talk about the fascinating world of clockmaking. (If your school can't visit us, we'll come to you! We'll visit your school and present a fun and educational talk about time.)

Spread the word!

Teachers can download this resource pack by visiting our website News Page at www.smithofderby.com/news

Share your amazing creations on social media using the hashtags **#TimeforCreativity** & **#ScienceWeekUK**

Make Your Own
Pendulum Timer

Time for more...?



STEM.org has some more resources available for British Science Week

Primary Activity Pack:

<https://www.stem.org.uk/system/files/elibrary-resources/2024/01/British-Science-Week-Primary-activity-pack-2024.pdf>

Secondary Activity Pack:

<https://www.stem.org.uk/system/files/elibrary-resources/2024/01/British-Science-Week-Secondary-activity-pack-2024.pdf>



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