

# teacher exhibition notes:

## Cartier in Motion

25 May – 28 July 2017 at the Design Museum

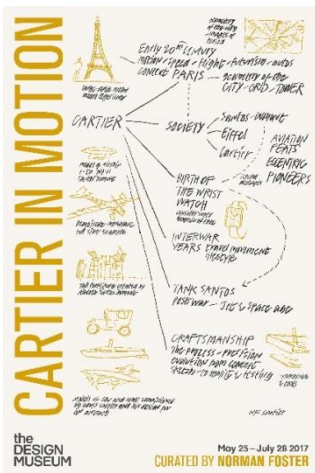
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These notes have been produced by Cartier to support teachers to visit the exhibition **Cartier in Motion** with classes of students. The exhibition notes are suitable for all Key Stages, whilst activities and curriculum opportunities have been suggested for Key Stages 1 and 2.

### contents:

- 1. an introduction to the exhibition**  
The concept of the exhibition and an introduction to the Curator
- 2. background information**  
The history of Cartier, significant historical pioneers and examples of quintessential Cartier watch designs over the years
- 3. teaching ideas for Key Stages 1 and 2**  
Further ideas on how to use your exhibition experience to create a cross-curricular topic for your class, all aligned to the 2014 National Curriculum
- 4. student activity sheet**  
To enable you and your class to get the most out of the visit, use the student activity sheet as you walk through the exhibition

# 1. exhibition



## The Cartier in Motion Concept

The creation of a wristwatch for an aviator. Developments in architecture and aviation. The symmetry, reason and precision of Paris.

The Cartier in Motion exhibition explores "... the dramatic changes that happened at the beginning of the 20th century, and how [they] has influenced all the ways in which we live today." Norman Foster, the Curator.

Cartier is central to the birth of modernism. This exhibition celebrates Cartier's jewellery and radical watch designs, explores the aesthetics and craftsmanship of machinery, and signifies the appreciation of timeless design.

The exhibition explores six main themes: (1) The evolution of Paris and its influence on Cartier shapes; (2) Louis Cartier's connections with Santos-Dumont and other pioneers of the age; (3) the birth of the modern wristwatch; (4) the everyday and sophisticated accessories designed to cater to a glamorous inter-war lifestyle; (5) the evolution of Cartier watch designs; (6) Cartier craftsmanship, with a focus on mystery clocks and skeleton movements.

To bring this exhibition to life, please see the [Cartier in Motion film](#).

"A celebration of an era with artefacts and memorabilia showing the emergence of a new way of looking at watches, clocks and jewellery"

**Norman Foster**

## Norman Foster – the Curator

Exhibition curator Norman Foster was born in Manchester. After graduating from Manchester University School of Architecture and City Planning in 1961 he was accepted to Yale University, where he gained a Master's Degree in Architecture. He is Founder and Executive Chairman of Foster + Partners which, over the past five decades has been responsible for a strikingly wide range of work, from urban masterplans, public infrastructure, airports, civic and cultural buildings, offices and workplaces to private houses and furniture design. Landmark projects include Beijing Airport, the Millau Viaduct, the Great Court at the British Museum, Hearst Tower in New York and the Museum of Fine Arts in Boston. Foster + Partners is currently working on the Apple Park in California, Bloomberg's European headquarters in London and the Norton Museum of Art in Florida.

He was granted a Knighthood in the Queen's Birthday Honours List in 1990, and in 1999 he was honoured with a life peerage, taking the title Lord Foster of Thames Bank. Norman Foster's work has received many prestigious accolades. He was awarded with the Pritzker Architecture Prize in 1999.



## 2. background information

### Cartier – a brief history

Founded in Paris, Cartier stands as one of the world's most esteemed and respected companies in the luxury goods industry.

Louis-François Cartier, the founder of the Maison Cartier, established the business in 1847. During its first decades, Cartier was a distributor and retailer of jewellery as well as watches and fine accessories. The early pieces reflected an elaborate variety of motifs and styles, all highly ornate, but lacking a unifying style. This was addressed when Louis Cartier, grandson of Louis-François, became an associate working with his father Alfred in 1898.

Louis Cartier prioritised the creation of an in-house design studio, which enabled him to initiate his own creations from start to finish. With the turn of the twentieth century, there was a growing conviction that the world was never going to be the same again, and this was reflected in the aesthetics and functionality of the signature Cartier style that we know today.

A short film, [The Founding Spirit of the Maison Cartier](#), visualises the story of the birth of Cartier.

### Haussmann's Paris



Architect Georges-Eugène Haussmann was commissioned by Emperor Napoleon III after the 1848 revolution to transform the city of Paris.

Moving away from the labyrinth of narrow lanes, which significantly contributed to the spread of disease and problems with overcrowding, Haussmann's design was a model of symmetry, reason and precision.

It is clear to see the influence of the mission to 'aerate, unify and beautify' the city had on Louis Cartier who decided to relocate the company to 13 Rue de la Paix in 1899, right in the heart of the new Paris.

The Cartier in Motion exhibition explores the evolution of the Cartier watch alongside geometric developments of the Parisian infrastructure.

## biographies



### **Louis Cartier**

Louis Cartier (1875–1942) was a French watchmaker now known worldwide for his watch designs. He joined his father Alfred at the head of the Maison Cartier at twenty-three years old.

He belonged to a generation for whom technical progress was a major event. The changes in the infrastructure of Paris and the advances in aviation and engineering inspired Cartier to use clean lines and simple geometry in his watch designs, some of which are still in production today.

“Louis Cartier believed that style should reconcile classical beauty with technical progress”

Guillermo Solana, Artistic Director, Museo Thyssen-Bornemisza



### **Alexandre Gustave Eiffel**

Alexandre Gustave Eiffel (1832-1923) was a French engineer and architect. Cartier and Eiffel were an integral part of the enlightened Parisian society that was a centre for progressive thinking at the turn of the twentieth century.

Eiffel’s most famous work, the Eiffel Tower, was initially intended to be a temporary construction for the 1889 World’s Fair, but instead the monument became a permanent landmark. It was not long before the Eiffel Tower became the internationally recognised symbol for the city.

Eiffel used the Tower as a hub for scientific experimentation and a research centre for aviation.



### **Alberto Santos-Dumont**

Alberto Santos-Dumont (1873-1932) was a Brazilian aviation pioneer who contributed significantly to the development of airships and aeroplanes. He was a friend of Louis Cartier.

Central to Santos-Dumont’s distinguished career was aero-competition - a point to point flight within a certain timeframe. The Eiffel Tower was regularly one of these points. Cartier was approached by Santos-Dumont who asked him to create a wristwatch, enabling him to keep track of time while piloting his aircraft. Cartier developed the Santos wristwatch in 1904.

Santos-Dumont turned his attention to developing aeroplanes in 1905. A replica of the Demoiselle no.20 can be found on display at the Exhibition.

## the watches

Louis Cartier was heavily influenced by the changes in aviation and engineering, and it is evident in his watch designs. A further short film Cartier, a pioneer in modern watchmaking gives an insight into the pioneering watch designs that Cartier are so famous for.

Examples of the following watches can be seen at the Cartier in Motion exhibition:



### Santos

In 1904, Cartier granted the wish of his famous aviation friend Santos-Dumont by inventing the wristwatch. This enabled Santos to be able to tell the time while flying.



### Tank

The Tank watch was created in 1917, and celebrates its 100th anniversary this year. This iconic piece was inspired by the rectangular form and proud lines of the military assault vehicle.



### Tortue

In 1912, Cartier created the Tortue, inspired by the shell of a turtle. It's unique oblong and slightly concave shape has made this a design classic.



### Baignoire

The 1906 design of the Baignoire – French for 'bath' – watch demonstrated Cartier's prowess in crafting watchmaking forms. An elegant ellipse uniquely forged in a single line, this watch is the essence of Cartier style.



### **Tonneau**

The Tonneau – French for ‘barrel’ – was created in 1906, shortly after the Santos watch. The unique shape of the watch case corresponded to the geometric preferences of the time.



### **Crash**

Created in 1967, this model represents an interpretation of a watch damaged in a crash. With its asymmetrical dial, it revolutionised the aesthetic codes of watchmaking history.



### **Mystery Clock**

The mystery clock was invented in the nineteenth century by illusionist Jean-Eugène Robert-Houdin. It was later developed exclusively for Cartier by the watchmaker Maurice Couët. A fascinating object, the hands appear to float like magic within the crystal, seemingly unconnected to any mechanism.

**Photography credits:** Cartier Archives © Cartier ; © Cartier ; © Google ; © N. Welsh, Cartier Collection © Cartier ; V. Wulvervck. Collection Cartier © Cartier.

### 3. teaching ideas for Key Stages 1 and 2

To inspire your pupils to make the most of the *Cartier in Motion* exhibition, we have designed a range of cross-curricular ideas that can be used either before or after your visit. All ideas are linked to the 2014 National Curriculum, which allows you to flexibly plan a topic around the themes of the exhibition.

		Art & Design	Design & Technology	English	History	Maths	Science
<b>KEY STAGE 1</b>	National Curriculum Links	<ul style="list-style-type: none"> <li>Use a range of materials creatively to design and make products</li> <li>Use drawing, painting and sculpture to develop and share their ideas, experiences and imagination</li> <li>Develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space</li> <li>Learn about the work of a range of artists, craft makers and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work.</li> </ul>	<ul style="list-style-type: none"> <li>Design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups</li> <li>Explore and evaluate a range of existing products</li> <li>Evaluate their ideas and products against design criteria.</li> </ul>	<p>Year 1 -- writing composition:</p> <ul style="list-style-type: none"> <li>Write sentences by saying out loud what they will write, compose a sentence orally before writing, sequence sentences to form narratives, re-read.</li> <li>Discuss their writing.</li> </ul> <p>Year 2 - writing composition:</p> <ul style="list-style-type: none"> <li>Write narratives about personal experience, write about real events, write for different purposes</li> <li>Plan or say out loud what they will write about, write down ideas including new vocab, encapsulate what they want to say.</li> </ul>	<ul style="list-style-type: none"> <li>Explore events beyond living memory that are significant nationally or globally [for example... the first aeroplane flight...]</li> <li>Investigate the lives of significant individuals in the past who have contributed to national and international achievements.</li> </ul>	<p>Year 1 – measurement:</p> <ul style="list-style-type: none"> <li>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</li> </ul> <p>Year 2 – measurement:</p> <ul style="list-style-type: none"> <li>Compare and sequence intervals of time</li> <li>Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.</li> </ul> <p>Year 2 – geometry:</p> <ul style="list-style-type: none"> <li>Identify and describe the properties of 2-D shapes, including the number of sides and linesymmetry in a vertical line</li> <li>Identify 2-D shapes on the surface of 3-D shapes.</li> </ul>	<ul style="list-style-type: none"> <li>Observe closely, using simple equipment</li> <li>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</li> </ul>
	Teaching Ideas	<p><b>Make your own paper plate clock</b></p> <p>Using the different images of the Cartier watches and the Mystery Clock as inspiration, pupils could:</p> <ul style="list-style-type: none"> <li>Explore the similarities and differences between the watch faces</li> <li>Look at modern watches – including digital – to see further differences</li> <li>Draw and develop their own idea of a watch, concentrating on the watch face for the features</li> <li>Make a paper plate clock with moving parts, ensuring there is an hour and minute hand</li> <li>This could then be used in Maths to develop telling the time.</li> </ul>	<p><b>Freestanding Structures – the Eiffel Tower</b></p> <p>Using the inspiration of the Eiffel Tower, pupils could:</p> <ul style="list-style-type: none"> <li>Explore the structure and accuracy of design</li> <li>Design their own freestanding structure of a tower</li> <li>Make their own design – perhaps from a single piece of A4 paper, art straws or even using spaghetti and marshmallows!</li> <li>Evaluate each other's towers – which is the tallest? Which structure is the most stable? What design feature is used to ensure the tower stands up?</li> </ul>	<p><b>Instructional Writing – how to make your paper plate clock</b></p> <p>Using the practical process of making a paper plate clock (see Art and Design), pupils could:</p> <ul style="list-style-type: none"> <li>Use short and clear sentences to explain the order of how to make the clock</li> <li>Use time connectives (first, after, then) to describe the sequence of the process</li> <li>Use imperative verbs (cut, draw, colour) to describe the process</li> <li>Draw simple illustrations to link to the writing.</li> <li>In pairs, re-read their work and to ensure it makes sense.</li> </ul>	<p><b>Significant Events and People – the first aeroplane flight</b></p> <p>Who invented the aeroplane – the Wright brothers or Santos-Dumont? Pupils could:</p> <ul style="list-style-type: none"> <li>Find out about the race to get the first powered aircraft aloft, including the Aero-Club de France competition, where Santos-Dumont won first prize</li> <li>Draw a timeline to compare the journey of Wright and Santos-Dumont</li> <li>Compare to flying today – what would have happened without these inventions?</li> </ul>	<p><b>Time</b></p> <p>Why is telling the time important? Pupils could:</p> <ul style="list-style-type: none"> <li>Use the paper plate clocks (see Art and Design) to practice moving the hour and minute hands to the correct time.</li> <li>Make a display of important times during the day – start of the day, break and lunch times, end of the day etc.</li> </ul> <p><b>Symmetry</b></p> <p>Using the inspiration of the symmetry of Paris, and the design of the Eiffel Tower, pupils could:</p> <ul style="list-style-type: none"> <li>Fold common cut out shapes to find all their lines of symmetry</li> <li>Find symmetry in common objects around the classroom.</li> </ul>	<p><b>Everyday Materials - what are watches made of?</b></p> <p>Using photographs and real life examples of watches and clocks, pupils could:</p> <ul style="list-style-type: none"> <li>Explore a range of different watches and clocks and investigate what materials they are made of</li> <li>Use photographs of Cartier watches and modern day watches to compare the materials being used</li> <li>Extend their vocabulary looking at the properties of a watch. What is opaque / transparent? What is shiny / dull? What is bendy / stiff?</li> <li>Design their own futuristic watch. What materials would it be made up of? What features would it have? How would you describe it?</li> </ul>

		Art & Design	Design & Technology	English	Geography	Languages	Maths	Science
KEY STAGE 2	National Curriculum Links	<ul style="list-style-type: none"> <li>Create sketch books to record their observations and use them to review and revisit ideas</li> <li>Improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]</li> <li>Find out about great artists, architects and designers in history.</li> </ul>	<ul style="list-style-type: none"> <li>Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose</li> <li>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces</li> <li>Understand how key events and individuals in design and technology have helped shape the world</li> <li>Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].</li> </ul>	<p>Year 3/4 - writing composition:</p> <ul style="list-style-type: none"> <li>Plan writing by discussing writing similar and learn from its structure, vocab and grammar, discuss and record ideas</li> <li>Compose and rehearse sentences orally, organise paragraphs around a theme...use organisational devices such as subheadings.</li> </ul> <p>Year 5/6 - writing composition:</p> <ul style="list-style-type: none"> <li>Plan by identifying audience and purpose, noting and developing initial ideas using reading and research</li> <li>Draft and write by selecting appropriate grammar and vocab, use a range of devices to build cohesion within and across paragraphs, use further organisational and presentational devices to structure text and guide the reader.</li> </ul>	<ul style="list-style-type: none"> <li>Locate the world's countries, using maps to focus on Europe... concentrating on their environmental regions, key physical and human characteristics, countries, and major cities</li> <li>Use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied.</li> </ul>	<ul style="list-style-type: none"> <li>Listen attentively to spoken language and show understanding by joining in and responding</li> <li>Appreciate stories, songs, poems and rhymes in the language.</li> </ul>	<p>Year 3 – Measurement:</p> <ul style="list-style-type: none"> <li>Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24- hour clocks</li> <li>Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, and hours.</li> </ul> <p>Year 4 – Measurement:</p> <ul style="list-style-type: none"> <li>Read, write and convert time between analogue and digital 12- and 24- hour clocks</li> </ul> <p>Year 4 - Number:</p> <ul style="list-style-type: none"> <li>Read Roman numerals to 100 (I to C)</li> </ul> <p>Year 4 – Geometry:</p> <ul style="list-style-type: none"> <li>Identify lines of symmetry in 2-D shapes presented in different orientations</li> <li>Complete a simple symmetric figure with respect to a specific line of symmetry.</li> </ul> <p>Year 5 – Number:</p> <ul style="list-style-type: none"> <li>Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</li> </ul>	<ul style="list-style-type: none"> <li>Setting up simple practical enquiries, comparative and fair tests</li> <li>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units</li> <li>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>Identify the effects of air resistance that act between moving surfaces.</li> </ul>
	Teaching Ideas	<p><b>The Eiffel Tower and Cubism – Robert Delaunay</b></p> <p>Using the structure and form of the Eiffel Tower as a starting point, pupils could:</p> <ul style="list-style-type: none"> <li>Compare classical or traditional paintings of the Eiffel Tower in comparison to Delaunay's 1911 Tour Eiffel Rouge</li> <li>Explore the many paintings of the Eiffel Tower by Robert Delaunay, and describe the differences in these paintings over time</li> <li>Use the inspiration of simple geometric shapes that defined Cubism to paint a landmark of their choice.</li> </ul>	<p><b>Pulleys and Gears – the Santos and Tank Watches</b></p> <p>Using the Cartier and Santos-Dumont story that created the birth of the wristwatch, pupils could:</p> <ul style="list-style-type: none"> <li>Use the Cartier's 'Shape Your Time' and 'Fine Watchmaking' videos on YouTube to explore the mechanical parts a watch is made up of</li> <li>Explore existing mechanisms using similar designs e.g. fairground rides, toy cars etc.</li> <li>Use the inspiration of the Tank Watch to develop innovative ideas involving the mechanisms</li> <li>Design, make and evaluate their ideas.</li> </ul>	<p><b>Persuasive Writing</b></p> <p>Using the pupil's experience of the <i>Cartier in Motion</i> exhibition, pupils could:</p> <ul style="list-style-type: none"> <li>Look at existing examples of flyers and brochures</li> <li>Look at sentence structures for persuasive writing e.g. short for emphasis, the pattern of three</li> <li>Use simple organisational devices e.g. headings, subheadings, diagrams, labels and captions</li> <li>Create a brochure of the exhibition to encourage other visitors to go.</li> </ul> <p><b>Non-chronological report</b></p> <p>Using the pupil's knowledge of either Louis Cartier or one of the pioneers, pupils could:</p> <ul style="list-style-type: none"> <li>Research their chosen pioneer using the internet</li> <li>Structure the report using headings, subheadings and paragraphs</li> <li>Write a fact file on Cartier, Santos-Dumont or Eiffel.</li> </ul>	<p><b>Where is France? Where is Paris?</b></p> <p>To understand where France and Paris are, pupils could:</p> <ul style="list-style-type: none"> <li>Distinguish between the words continent, country and city</li> <li>Discuss where they have been on holiday, and use maps and globes to work out where they are</li> <li>Identify where France and Paris are in relation to the UK</li> <li>Use Google Maps to find key landmarks in Paris, including the Eiffel Tower.</li> </ul>	<p><b>French – What's the Time, Mr Wolf?</b></p> <p>Using the inspiration of France, and watchmaking, pupils could:</p> <ul style="list-style-type: none"> <li>Learn how to say the numbers 1-12 in French, through games and repetition.</li> <li>Play 'Quelle Heure est-il, Monsieur Loup?' – when the 'wolf' decides it is dinner time, shout 'Midi!' and catch a victim!</li> </ul>	<p><b>Roman Numerals</b></p> <p>Using the inspiration of the classic Cartier watch face, pupils could:</p> <ul style="list-style-type: none"> <li>Play Roman numeral bingo, to start to recognise what the letters represent</li> <li>Do simple addition and subtraction exercises using Roman numerals</li> <li>Break codes – work out when famous events took place by working out the year from Roman numerals.</li> </ul> <p><b>Time</b></p> <p>Why is telling the time important? Pupils could:</p> <ul style="list-style-type: none"> <li>Link with Roman numerals – converting time on a traditional clock face to digital time</li> <li>Match up – use clock face times, digital times and written times to match them up</li> <li>Answer word problems in relation to time.</li> </ul> <p><b>Geometry</b></p> <p>Using the inspiration of the symmetry of Paris, and the design of the Eiffel Tower, pupils could:</p> <ul style="list-style-type: none"> <li>Use mirrors to reflect the line of symmetry on simple shapes</li> <li>Colour the missing halves of shapes on squared paper, including diagonal lines of symmetry.</li> </ul>	<p><b>Forces and Motion – Paper Planes Investigation</b></p> <p>Using Santos-Dumont's aviation ideas as a stimulus, pupils could:</p> <ul style="list-style-type: none"> <li>Use their experience of seeing the replica of Demoiselle no.20, and generate ideas of what makes planes fly well</li> <li>Conduct a paper planes investigation – which design flies best?</li> <li>Introduce concepts of fair test and making changes to the design to improve it</li> <li>Investigate whether any conditions could affect the testing</li> <li>Gather and record the results in a chart.</li> </ul>



#### 4. The Visit – Pupil Activity Sheet

##### *Towards the Purity of Lines*

Speak to a partner / in your group and discuss why Napoleon III asked Georges-Eugène Haussmann to change the city of Paris.

See if you can find the 'Paris After Haussmann' photograph.

What shape does this remind you of? .....

Can you find the Cartier mantel clocks? What do they look like? Write a description below:

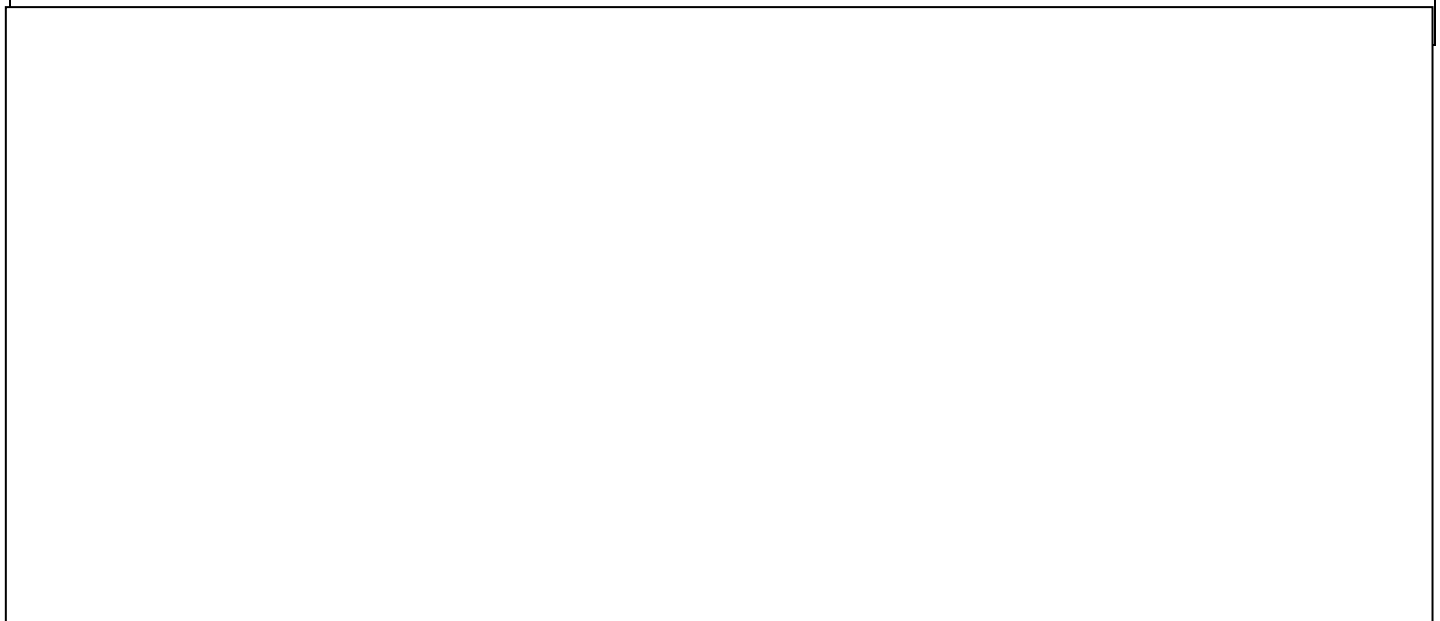
.....

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##### *Gustave Eiffel: Architecture and Aviation*

What was Alexandre Gustave Eiffel famous for?

Choose a section of the model of the **Eiffel Tower** to sketch here, paying attention to the lattice effect:



**Santos – Dumont and the Santos Watch**

Why was the **Santos watch** so important?

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.....  
.....

Take a look at the **Aerial Dining Set**. Why did Santos-Dumont entertain his guests in this way?

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.....  
.....

Choose your favourite Santos watch from the display and draw it here:

What do you notice about the numbers on the watch face?

Look closely at the replica of the **Demoiselle plane**.

What material do you think the wings are made of? .....

What are the wheels for? .....

Speak to a partner / in your group and discuss whether you would want to fly it (or not!) Where would you go?

**Cartier: Society and Technology**

Look at the display cabinet. Instead of watches, what other items can you see that Cartier created? Write a list or draw them below:

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***The Evolution of Watch Design***

See if your partner / teacher / or adult in the group is wearing a watch. Speak to your group about the similarities and difference between modern watches and Cartier watches.

One of Cartier's watches is called 'Tortue'.  
What does this mean in French?

.....

Can you find the **Tortue watch** on display?

***Travel and Elegance***

Can you find the replica of the Lunar Excursion Module? Who were they given to?

.....  
.....

***Craftsmanship at the Cartier workshop***

Can you find this:



What is it? .....

Talk in partners / in your group about what is special about this item.

Go to the **Watchmakers Bench**, and try drawing the cogs that watches are made up of:

***Timeline***

Can you find out what exciting mission took place in 1969? .....

Find the year you were born on the timeline.  
What important events took place in that year? .....