

Mechanical Feat: Elephant Automaton Clock



Elephant Automaton Clock, 1610 – 25

Germany (Augsburg)

Gilt metal with enameling

Loyola University Museum of Art, Presented to the Martin D'Arcy Museum of Art by Mrs. Thomas Stamm with deep appreciation and affection in recognition of Rev. John J. Piderot, S.J., 22nd President, Loyola University Chicago, 1989-03

Grades: 6 – 9

Subjects: English Language Arts, Science, Fine Arts, Foreign Languages

Time Required: 2 – 4 class periods, 45 minutes each

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Lesson Overview

Students will learn that an automaton (plural: *automata*) is a self-operating machine. Automata feature movement and decoration to amuse guests and show off the wealth of their owners. They will discover that in the Baroque period (ca. 17th century), there was an interest in the exploration of foreign lands and creatures. Students will then turn animals into automaton clocks and decide which relevant movements their automata will make. They will make drawings of their designs with actual moving parts.

Materials

- Reproduction of the Elephant Automaton Clock (http://www.luc.edu/luma/collections/collection_details/elephant_clock.html)
- Writing and drawing utensils (pencils, markers, crayons, oil pastels, etc.)
- White paper or card stock
- Tape
- Metal brads
- Metallic markers or metallic paper
- Books, websites, or other materials about exotic or unfamiliar animals. Some good websites include:

LUMA

- <http://animals.nationalgeographic.com/animals/>
- <http://www.animalcorner.co.uk/wildlife/wildlife.html>

Lesson Steps

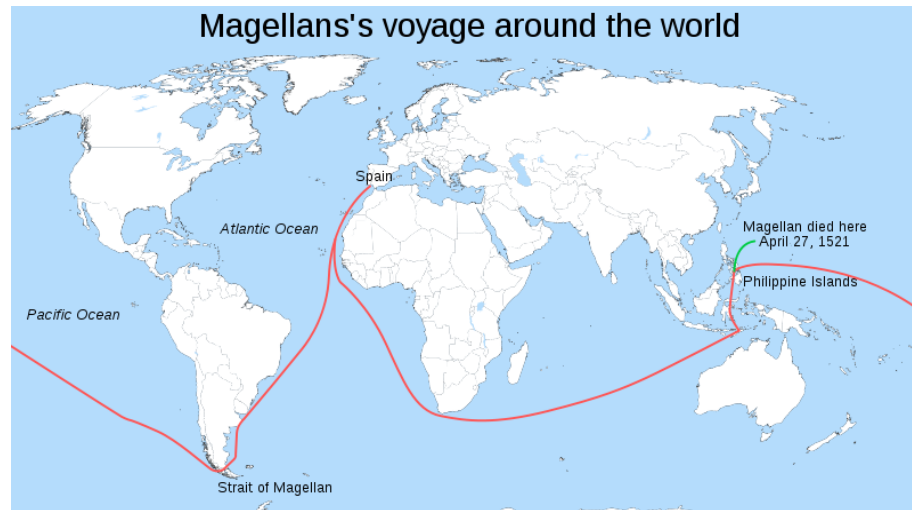
1. Have students look closely at the *Elephant Automaton Clock*. See how much they can figure out about the work when they take time to look at it, think about it, and share ideas.
2. Use a brainstorming technique, such as Pair Share, to get them started before sharing with the whole class.
 - Pair Share: Students turn to a partner and take turns naming one thing that they notice about this work. After naming some of the most obvious things, they will soon begin to look more deeply and notice things that their partners did not. They should remember to share these ideas in the discussion later.
3. Use the following questions to begin a discussion.
 - What do you see? What more can you find?
 - What do you think this work is made of?
 - Gilt metal (metal that has been covered with a thin layer of gold) with enameling (a decorative coating baked on metal).
 - What is the purpose of this object?
 - In the seventeenth century, the automaton was used to entertain and impress dinner guests. On LUMA's work, Turkish figures circle the tower on top of the elephant, the elephant keeper's arm moves up and down, and the eyes of the elephant roll back and forth. Through a second mechanism in the base, the clock could propel itself across the dinner table.
 - Where in your home would you display this clock, and why would you put it there?
 - During the Baroque period, the clock would have been placed in the center of a banquet table and, unbeknownst to the guests, it would come alive when the hour struck, undoubtedly startling a few but amusing all.
 - Who do you think would own this work?
 - Only the wealthy could afford such an elaborately decorated and mechanized piece.
 - What kind of skills would the artist need to make this clock?
 - Although we do not know the German artist who crafted this piece, we do know that it came from Augsburg, the European center for elaborate metal work during the Baroque period. Augsburg's wealth, drawn from banking as well as metal-working, attracted many artists searching for patrons.



Germany

4. **Historical Background:** Now let's learn about the period in which this work was created.

- During this time period, an artist's decision to create automata in the likeness of exotic animals, such as elephants, was due to the increasing knowledge of and interest in foreign lands. This piece was made during the Age of Discovery (1400s to 1600s), when European ships traveled around the world to explore, seek out new trade routes, and search for trading goods. It was during this time that the Portuguese explorer Ferdinand Magellan circumnavigated the globe, and direct routes to the Spice Islands, located between mainland Southeast Asia and Australia, and China were determined. On these expeditions, Europeans encountered people, animals, and lands they had never known to exist.
- By the Baroque age (16th and 17th centuries), elephants had not only been described but also seen and documented, allowing artists to render them accurately. This elephant clock looks naturalistic, unlike the stylized and anatomically incorrect elephant of LUMA's *Desco da Parto* (see LUMA Teacher Guide "[Overcoming Great Odds](#)"). The inclusion of Turkish men on top of the automaton demonstrates European interest in the exploration of foreign lands; the figures are representative of people from the Ottoman Empire, which included parts of Eastern Europe, Asia, and North Africa. During the Age of Discovery, explorers ventured into this vast empire and interacted with its people.



Activity

1. Ask students to think about animals other than ones found in the United States.
2. Tell students to choose a foreign animal and research its distinguishing movements and traits. Have them imagine the animal as a clock automaton. Their creations should have unique characteristics of the animal depicted (like big ears for an elephant) and should move in a way that their animals would actually move (i.e., a bird automaton could flap its wings).
3. Have students draw and diagram their automata, making sure to explain the animals' characteristics and movements.
4. Students should attach moveable parts to their drawings using simple pop-up techniques to attach cut outs with pieces of tape as a hinge. Additional moveable parts can be attached with metal brads.
5. Students can adorn the surface with metallic markers or paper.

Expanding the Lesson

Students could do one or more of the following:

- Act out how their automata would move, work, and sound.
- Present their automata to the class.
- Research their animals and write down three things they learned.

Vocabulary

Age of Discovery: 1400s to 1600s, an era when European ships traveled around the world to explore, seek out new trade routes, and search for trading goods.

automaton: self-operating machine that features movement and decoration to amuse people and show off the wealth of their owners (plural: *automata*).

Baroque age: late 1500s through the early 1700s, an era that is marked especially by the use of very elaborate art and music.

enamel: to coat the surface of metal, glass, or pottery with a glassy substance.



gilt: the application of a thin layer of precious metal, usually gold or silver.

Illinois Learning Standards

English Language Arts

1 – Reading

3 – Writing

4 – Listening and Speaking

5 – Research

Science

12 – Concepts and Principles

Social Science

16 – History

17 – Geography

Fine Arts

26 – Creating and Performing

Foreign Languages

29 – Cultures and Geography