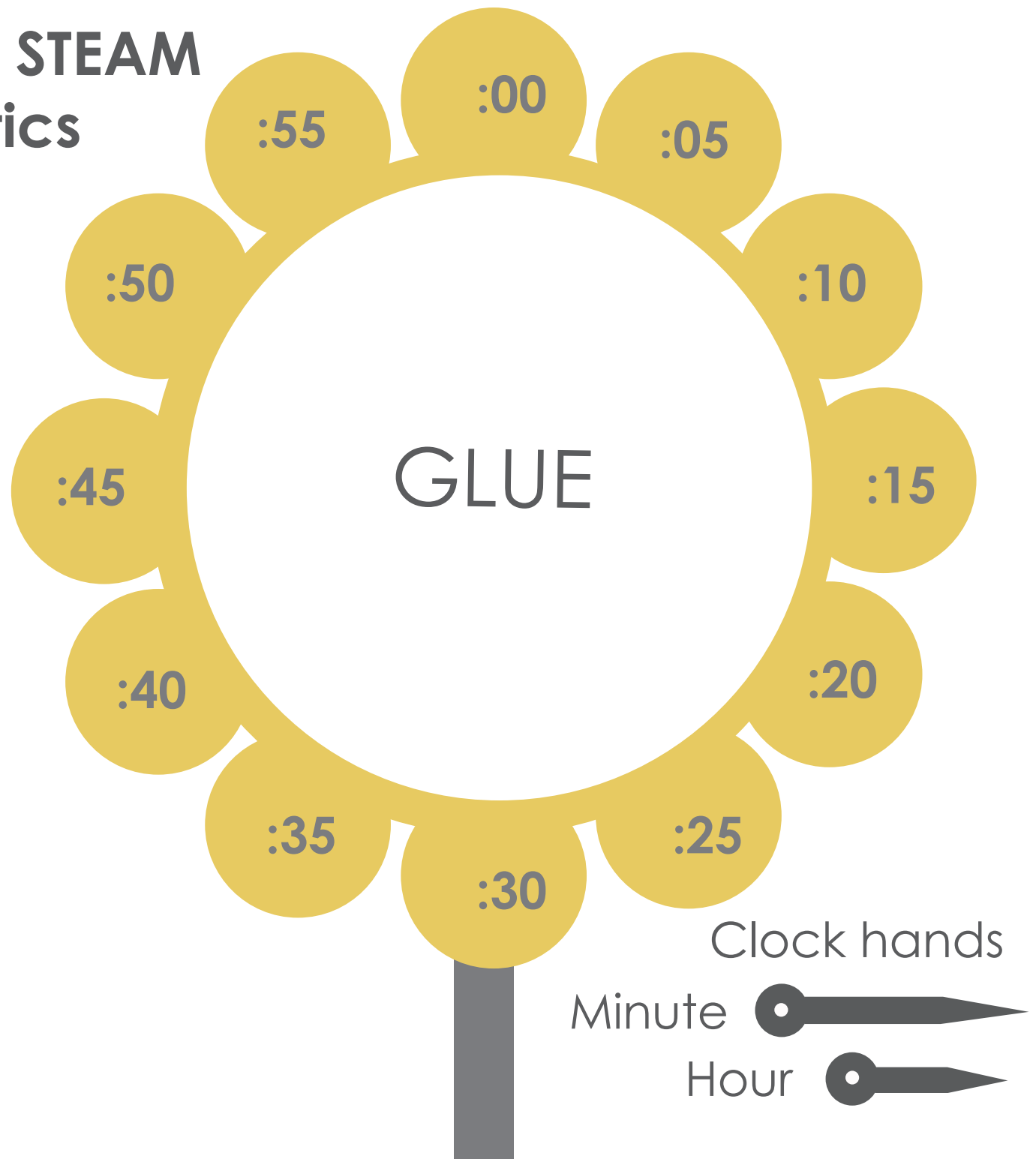
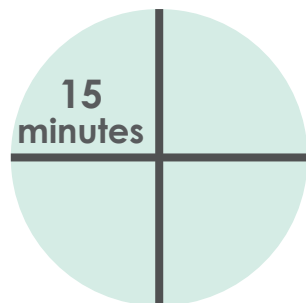
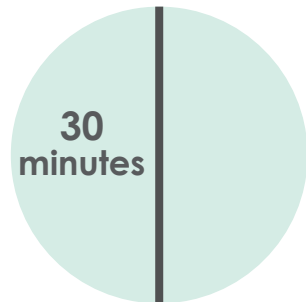
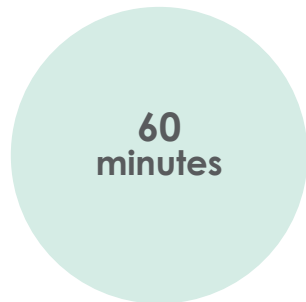




My Box Of STEAM Mathematics “TIME”

1 hour = 60 minutes



Time written in a digital way

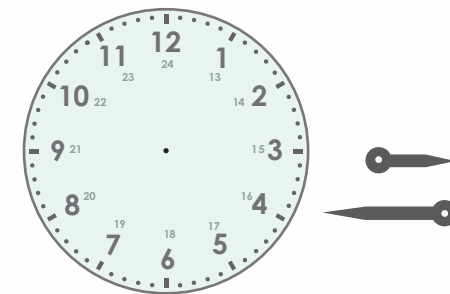
12:00	6:35	20:45	22:00
1:15	7:55	23:50	21:15
2:45	8:20	14:22	16:45
3:50	9:17	15:30	13:50
4:12	10:00	18:19	17:12
5:00	11:25	19:20	24:00



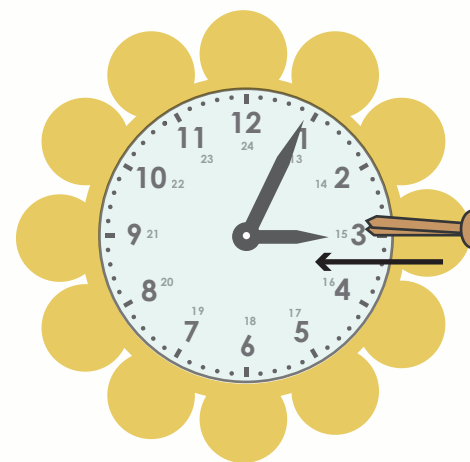
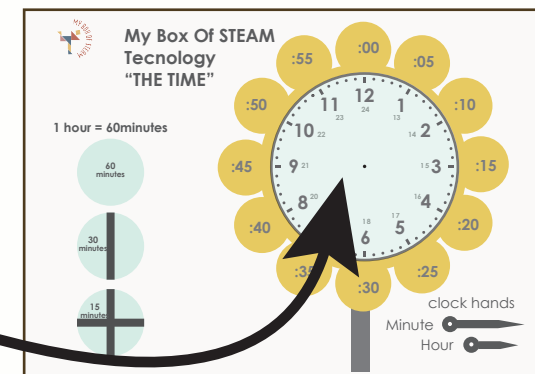
Mathematics "CREATE YOUR OWN CLOCK!"

1) Cut out all figures.

Time written in a digital way			
12:00	6:35	20:45	22:00
1:15	7:55	23:50	21:15
2:45	8:20	14:22	16:45
3:50	9:17	15:30	13:50
4:12	10:00	18:19	17:12
5:00	11:25	19:20	24:00



2) Glue the circle
on the base.



3)
Attach the clock hands
to the centre of clock
with a split pin.

TIME

Time passes, the sun rises and then sets, the hours pass, the minutes tick, and the seconds slip away like sand in an hourglass. It seems that the oldest functioning clock in the world is in Salisbury Cathedral, made of wrought iron in 1386. Tick, tick, tick, tick, ticking away the hours. Humans have always tried to measure and contain time while flowers, for example, do so spontaneously, as if there were a natural clock inside them: the sunflower follows the movement of the sun by turning its head. People, on the other hand, have had to create clocks and there have been many who have made their own creative contributions. One of the most important is Christiaan Huygens. Christiaan was a child who was curious about life and the world and spent hours observing the mechanisms that move the world. He admired the forms of nature but also loved building mechanical models and knew how to play the lute and viola da gamba. There was an air of science in his house, and it was a bustle of the most illustrious scientists and philosophers, such as Descartes.

Christiaan, thanks to his father, a Dutch diplomat and natural philosopher, studied law and mathematics and undertook many journeys in his country Netherlands, but also to Denmark, Rome in Italy, and even Paris. These journeys introduced him to different experts and scientists but also to different ways of life that opened his mind and heart.

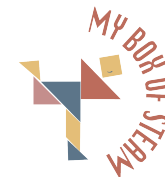
As his knowledge and interests grew, he wrote books and, together with his brother, began to build telescopes, modifying and grinding lenses so that their instruments became more and more accurate and enabled him in 1655 to observe the distant moon revolving around Saturn. And four years later, also the shape of the rings whose changes and phases he described.

For the telescope observations to be truly precise, Christiaan realised that it was necessary to be able to measure time accurately. However, such precise instruments did not yet exist, so Christiaan thought that he would have to create them himself: in France, watchmakers had already created beautiful clocks, but more beautiful to look at than careful and accurate in marking the passing of the hours.



**Co-funded by
the European Union**

MY BOX OF STEAM (project nr. 2022-2-EE01-KA220-SCH-000099273) is funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.



Mathematics "TIME"
All content is licensed under
CC BY-NC-ND 4.0.

Christiaan, in 1656, created the first pendulum clock whose oscillation deviated from the passage of time by only one minute per day. He obtained a Dutch patent, but the French watchmakers did not agree at all, and the supporters of Galileo Galilei even accused him of plagiarism. But Christiaan managed to prove that he was not familiar with the work of the Italian scientist and that his pendulum was much more perfected and thus obtained a formal apology from Grand Duke Leopold of Tuscany, who was a great supporter of Galileo.

Christiaan based his pendulum on the cycloid curve, i.e., the curve that creates a point at the edge of a disc or circle that rotates as it moves along a straight line, such as a wheel... This curve was discovered by Pascal and was used by Christiaan to perfect his 'cycloidal' pendulum clock, which was not only useful for astronomical observations but also for orientation at sea to determine longitude and thus establish the position of a ship.

In spite of his lifelong health problems, Christiaan was unstoppable and continued to travel Paris and London and meet scientists like Roberval, Desargues and Pascal, with whom he discussed discoveries, hydrostatics, telescopes and futuristic ideas, even that of flying...

In 1673, he published a book dedicated to his watch, the cycloid curve and even the force of gravity found by Newton a few years earlier, but of which no one knew anything yet. Two years later, he developed the spring and balance wheel in an attempt to perfect the watch mechanism even further. (In some wristwatches, this mechanism is still present). Wars and invasions complicated the period in which he lived. The French army invaded the Netherlands, and his work often attracted the envy of other scientists. As time went by, Christiaan became increasingly ill and felt lonely and isolated. He continued to write about lenses and clocks and even imagined extraterrestrial life, perhaps hoping to meet someone more attentive to his discoveries. He died where he was born, in the city of The Hague, in 1695. Even today, he is considered one of the most important scientists capable of combining the mathematics of Galileo with the vision of Descartes. A mountain on the Moon, a crater on Mars and the Huygens-Cassini probe sent to Saturn to closely study its rings and satellites are named after him.



**Co-funded by
the European Union**

MY BOX OF STEAM (project nr. 2022-2-EE01-KA220-SCH-000099273) is funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.



Mathematics "TIME"
All content is licensed under
CC BY-NC-ND 4.0.