

Big Ben - Clock Tower

General information			
Respective blueprint	Clock Tower		
Description	Students are given a presentation that traces the evolution of clocks through the ages to the present day. They arrange a jigsaw puzzle on the theme of Big Ben. They learn about the history of the Big Ben clock tower and make a model of the tower.		
Learning objectives	<ul style="list-style-type: none"> To acquire knowledge about the different types of clocks and historical objects with clock mechanisms To form ideas about the measurement of time To understand the connection between hour and minute 		
Related curricular subjects	<p>History: historical facts about Big Ben. Clocks through the ages.</p> <p>Mathematics: geometric figures, units of time</p> <p>Art: making a clock tower model</p>		
Duration	120 min		
Level of difficulty	Basic	Medium	Advanced
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Inclusivity guidelines			
How to integrate students with SLD	<ul style="list-style-type: none"> Formulate short, simple instructions that only require one action at a time. If you give oral instructions, make sure you keep track of them in the form of pictograms or written on the board. When you give instructions (oral or written), make sure to highlight the word of action so pupils know what they are expected to do. When it's possible, you can show the expected result of the manipulation. When creating groups, try to place students who are having difficulties with students who are generally more advanced so that they can help each other (for example, a dyspraxic student will have a lot of difficulty with cutting tasks). 		
How to integrate students who work faster	If they finish faster than the others, they are offered to colour the finished model.		

Step-by-step description of the lesson

Step 1: Clock

Estimated time: 20 min

Students learn about the development and evolution of the clock:

- **When was the first clock created?**

In its development, mankind has had various ways of measuring time. Xenophon points out that during the daytime is determined by the sun and at night by the stars. The clock is one of the oldest human inventions. One of the first clocks used in antiquity was the sundial. In antiquity, Egyptian priests used so-called sidereal clocks (the hour was known by the appearance of a particular star on the corresponding tenth day of the month).

- **How has its appearance changed over the centuries?**

After the creation of water clocks and sundials, it became possible to determine the time of day more accurately. Before, the division of day and night was done separately. The requirement for equal duration of night and day division was for the needs of astronomers. There were two systems of dividing the day into 12 equal parts, as the Babylonian priests divided it, and into 24 equal parts, as the Egyptian priests divided it. The scholars of ancient Greece adopted the Egyptian division of the twenty-four hours but divided this Egyptian hour into 60 equal parts according to the Babylonian system of reckoning.

- **What does the clock look like today?**

In the 19th century, various attempts were made to use electrical power sources, including batteries, to drive clock mechanisms. The main aim was to replace the manual charging input with charging by an electrical source. Attempts are being made to use an electric motor or electromagnets for this purpose. In 1841, the first electromagnetic pendulum was patented. In the 20th century, clocks were also developed using combinations with elements of mechanical clocks and electrical assemblies.

(1)

One of the most famous clock towers in the world is Big Ben at the Palace of Westminster in London. The tower was completed in 1859, and its clock was the largest and most accurate four-faced striking and chiming clock in the world.

Step 2: Puzzle and history

Estimated time: 30 min

- Each student arranges an online puzzle revealing the beauty of the majestic Big Ben bell tower. (Follow the links to free online puzzles:

jigsawplanet.com; <https://www.jigsaw365.com/play/big-ben-london-3468fdfd-0296-4081-a323-f7ff06981060?pieces=6>)

If an individual student device is not available, you can find a printable puzzle for each student or for a group of students in the materials added to this handout.

- Students are presented with brief information about the Big Ben Clock Tower:

The Big Bell Clock Tower is in the city of London. It was built in 1858. Its first name was St Stephen's Tower. Later, it adopted the name Big Ben. It possesses the largest bell located in a clockwork. It is 96 m high. The clock is 55 m above the ground.

Big Ben is among the most famous symbols of the United Kingdom. In 2012, it was officially renamed the Elizabeth Tower.)

Step 3: Model of a clock tower

Estimated time: 70 min

- Students make a model following the steps for the work from the blueprint. They determine the exact time that is depicted on the clock.

"Exit ticket" - getting feedback on emotional state and satisfaction with activities.

Assessment activities

Activity 1: Clocks through the ages

- Each student receives instructions for work (worksheet)
- Students make a model following the steps for the work. They determine the exact time that is depicted on the clock.
- "Exit ticket" - getting feedback on emotional state and satisfaction with activities.

Activity 2: Timeline

Students can create a timeline on which they mark the types of clocks according to the order of their appearance over the centuries. This can be done on paper or using online tools, e.g.

<https://www.smartdraw.com/timeline/> .

Another option: students work in a presentation where they have to place the different clocks on a timeline with the most important dates of the lesson.

- Challenge students to gather the necessary information to present themselves.

Activity 3: I already know

The teacher may ask questions like:

- What was the first clock according to the timeline presented?
 - A) Clock tower bell tower
 - B) Hourglass
 - C) Sundial
- Which divides the day into two 12-hour periods?
 - A) The Romans
 - B) Egyptians
 - C) Ancient Greeks
- The minute hand was introduced in:
 - A) The Hague
 - B) Japan
 - C) England

Attachments

- Timeline task
- Bell tower
- Roof drawing
- Clock mechanism
- "Exit Ticket"
- Puzzle ready to be printed. You could also find a link that leads to a tutorial that shows you how you can create a full slide puzzle effect in PowerPoint.

References

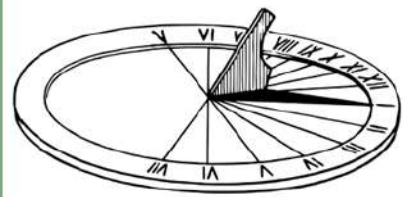
Source in Bulgarian. Also available in English:

<https://bg.wikipedia.org/wiki/%D0%A7%D0%B0%D1%81%D0%BE%D0%B2%D0%BD%D0%B8%D0%BA>

<https://www.jigsaw365.com/play/big-ben-london-3468fdfd-0296-4081-a323-f7ff06981060?pieces=6>

https://www.wikiwand.com/bg/%D0%91%D0%B8%D0%B3_%D0%B1%D0%B5%D0%BD

https://s3.amazonaws.com/s3.timetoast.com/public/uploads/photo/14508868/image/d612f260341700d513f7adbc3fa87d?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAJB6ZCNNAN7BE7WDQ%2F20230816%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20230816T041320Z&X-Amz-Expires=604800&X-Amz-SignedHeaders=host&X-Amz-Signature=90c30f4a07271969cb8f0419c7fb0b75833c117b376f199eb2bf14d0800188



Around 8000. BC



750



1969

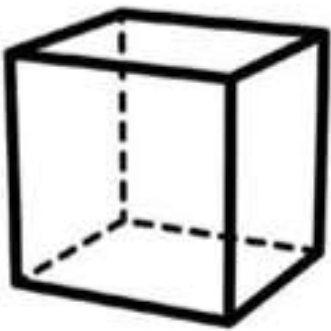
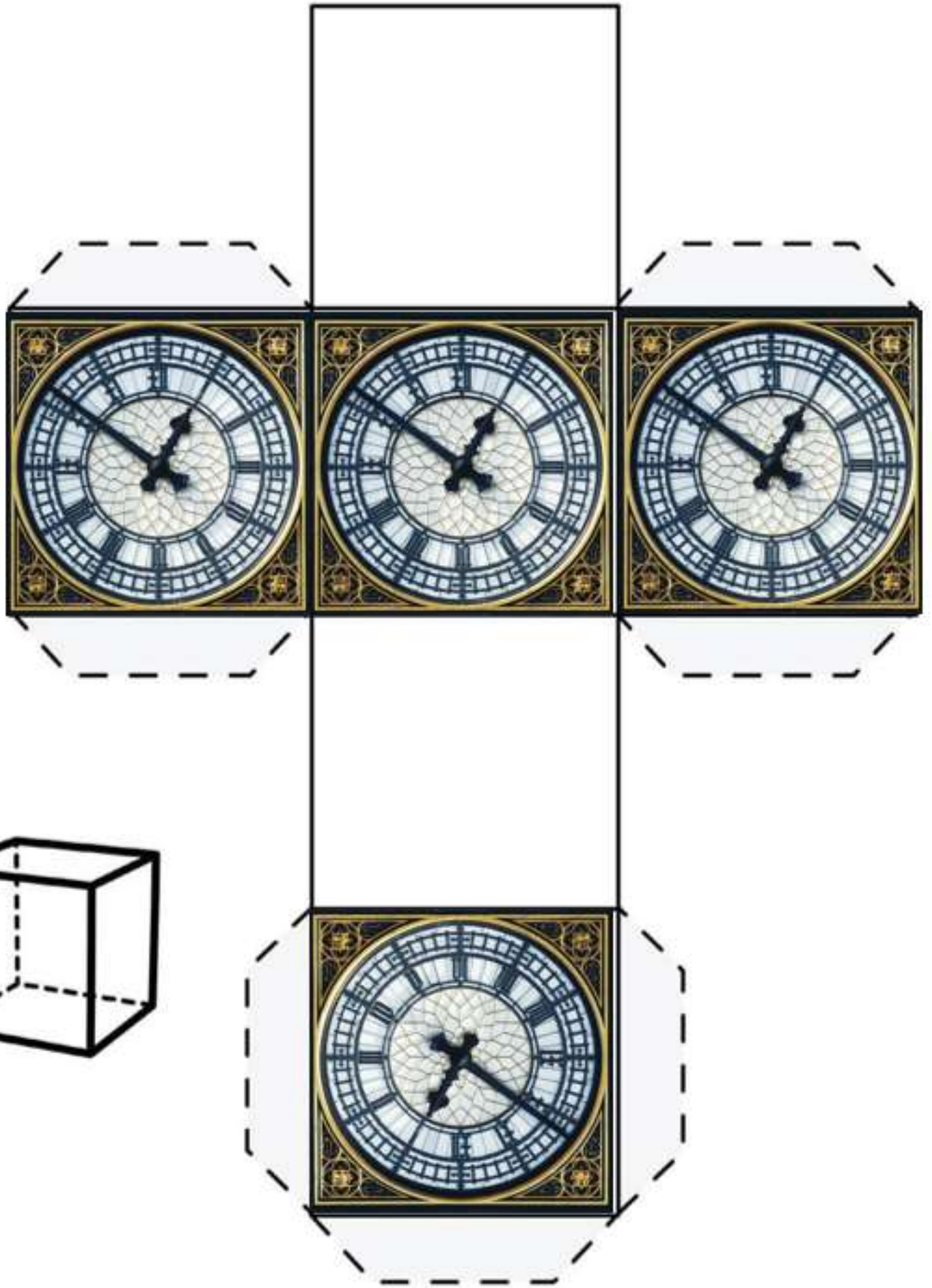
CLOCK THROUGH THE AGES

Around 1500. BC



1656










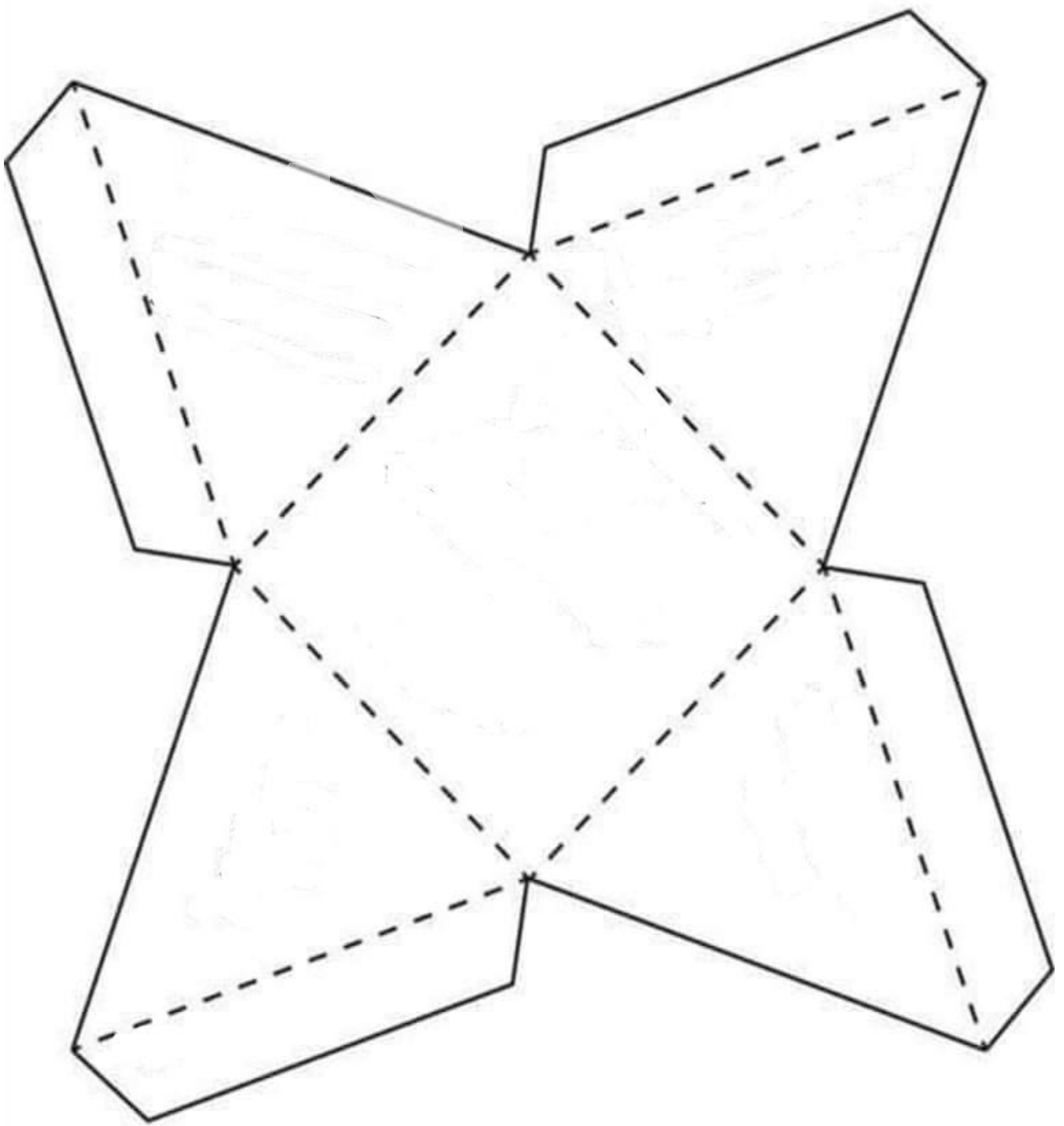
Exit ticket

Name

Date

- ✓ Today, I learned that
- ✓ What I liked about this lesson is that
- ✓ I need to correct and learn more about.....
- ✓ Today I felt   







Sources:

Follow the first link that leads to a tutorial that shows you how you can create a full slide puzzle effect in PowerPoint.

- [Puzzle Pictures in PowerPoint 2010 and 2007 for Windows \(indezine.com\)](#)
- [BIG BEN: All You Need to Know BEFORE You Go \(with Photos\) \(tripadvisor.co.uk\)](#)

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