

Leaning Tower of Pisa - chalk tower

General information			
Respective blueprint	Leaning Tower of Pisa - chalk tower		
Description	<p>Learn historical facts about the Tower of Pisa. Update knowledge of geometric figures, units of mass and length. Setting the task of making a cardboard roll Plaster cast in the style of the Tower of Pisa.</p>		
Learning objectives	<ul style="list-style-type: none"> • Practise the mathematical concepts of geometric figures, units of mass and length. • Acquire knowledge about the historical site of Pisa, Italy. • Acquire knowledge and skills in chalk making. 		
Related curricular subjects	<p>History: facts about the tower of Pisa; Mathematics: geometric figures - cylinder, angle, units of mass and length. Engineering: using building materials, making a tower Technology: making a cylinder out of cardboard; Art: colours, drawing</p>		
Duration	60 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. 		
How to integrate students who work faster	They decorate and colour the finished cardboard roll. Assist struggling students in making the rolls.		

Step-by-step description of the lesson

Step 1: Introduction to historical facts about the Tower of Pisa.

Estimated time: 15 min

- Introduction to historical sites in Italy: "All roads lead to Rome". Italy is rich in historical sites:
 - The Colosseum - This huge amphitheatre is the largest of its kind ever built by the Roman Empire and remains to this day. Built as a public place, it had a wooden floor measuring 83 by 48 meters. Beneath it were two floors of tunnels, rooms, cells and passages for gladiators, workers, wild animals, and storehouses. Today, the structure is in stark contrast to modern development.
 - Venetian Canals - the canals have long been the main streets of the city, connected by a maze of narrow passages. They are surrounded by old buildings that have remained relatively unchanged for hundreds of years, adding to the romantic charm. The Grande Canale is the most famous of these waterways and one of the most photographed places in Venice. It is the best way to see many of the great palaces facing the water.
 - Pompeii - Vesuvius volcano looking down on the remains of the city it destroyed in 79 AD. It is the site of the 79th century. But that eruption also preserved many of the city's treasures: frescoes, mosaics and sculptures that are hidden in the lava. Several centuries of excavation have revealed the remains of houses, markets, baths, temples, theatres, streets and human remains. Visitors can tour the site, walk the old streets marked by the tracks of chariots, and see the technology used by the Romans more than 2,000 years ago.

- Exploring the Tower of Pisa from its creation to the present day
 The Leaning Tower of Pisa is a detached bell tower of the cathedral in the city of Pisa, Italy. It is located in the Square of Miracles. It was designed to stand vertically, and as soon as construction began in 1173, it began to tilt to the north due to the weak earth foundation and incorrect foundations. As of 2006, the tilt was about 13°. The height of the tower is 55.86 m from the ground to the lower side and 56.70 m to the higher side. Its weight is 14 500 tonnes.)

Step 2: Update mathematical knowledge

Estimated time: 15 min

- Identifying and analysing the geometric shapes used in the Tower.
- Comparing units of length:

- Reporting the difference in height on two sides of the Tower.
- Measuring an angle.
- Calculating the age of a building.

Step 3: Building the model

Estimated time: 30min

Students work in teams of 5. Each student makes a roll and plaster mixture in a different colour. When the chinks are completely dry, they will be able to compare the quality of the finished chinks and discover what mistakes, if any, they made in making them.

- They follow the instructions given in the blueprint.

Assessment activities

Activity 1: Historical facts and mathematical calculations

Students' conclusions about the tilt of the tower.

Make conclusions about mistakes made in the construction of the building.

Teacher's help: what could be the causes or mistakes made - building materials used, weak construction, weak foundations, soil quality, construction quality ?

Activity 2: Building a model

Students analyse their work and mistakes made during construction in the following areas:

- Properly rolling the cardboard to create a roll.
- Accurately proportion the materials for the plaster cast.
- Observing the durability and drying time of the chink mixture.

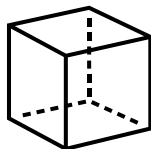
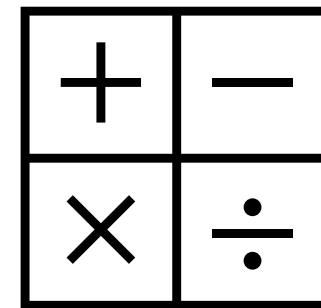
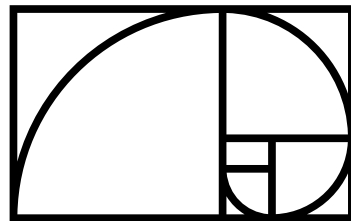
Attachments

Presentation "All roads lead to Rome"

References

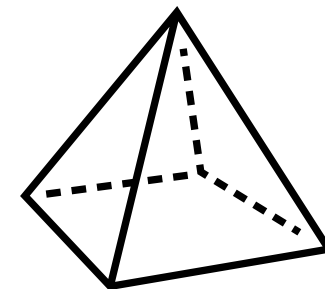
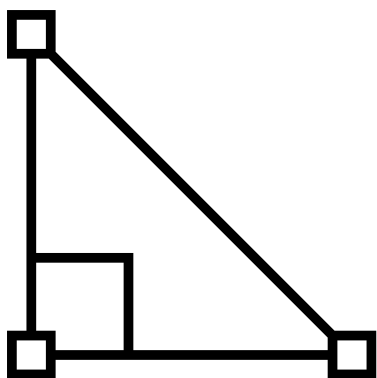
[15 най-популярни туристически атракции в Италия - Туристически Атракции 2023 \(tripnholidays.com\)](https://www.tripnholidays.com)

[Наклонена кула в Пиза – Уикипедия \(wikipedia.org\)](https://en.wikipedia.org/wiki/Leaning_Tower_of_Pisa)



Pisa

All roads lead
to Rome



Съфинансиран от програма
„Еразъм+“
на Европейския съюз



Colosseo



Venice Canals

Pompeii





The Tower of Pisa

- Sources:

Slide 1: [Над 40 безплатни илюстрации за Италия Карта и Италия - Pixabay](#)

Slide 2: [Над 300 безплатни снимки за Колизеум Рим и Рим – Pixabay](#)

Slide 3: [Над 400 безплатни снимки за Венециански Канали и Венеция – Pixabay](#)

Slide 4: [Над 900 безплатни снимки за Помпей и Бензиностанция – Pixabay](#)

Slide 5: [Над 100 безплатни снимки за Пиза и Италия - Pixabay](#)

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