

## Build your parachute

General information			
Respective blueprint	Build your parachute		
Description	Students will make their own parachute invented by Faust Vrančić.		
Learning objectives	<ul style="list-style-type: none"> <li>students will get to know Faust Vrančić's innovations</li> <li>students will make a parachute</li> <li>by comparing, the students will conclude what the relationship between the surface of the parachute and the speed of landing is</li> </ul>		
Related curricular subjects	Art, mathematics, physics		
Duration	45 min		
Level of difficulty	Basic	Medium	Advanced
	○	✓	○
Inclusivity guidelines			
How to integrate students with SLD	<p>work in pairs, with the help of the teacher or other students</p> <p>Use colours to separate information and be consistent in your colour codes.</p> <p>Use clear visual elements without overloading them, to illustrate concepts and support the text.</p> <p>Ensure that the images used match the text.</p> <p>Use descriptions to explain diagrams and other illustrations.</p>		
How to integrate students who work faster	<p>Helping students who are slower in their work, creating a table in which data about the size of the parachute and the landing speed of the parachute will be entered</p>		

### Step-by-step description of the lesson

Step 1: Inventor of the parachute - introduction	Estimated time: 10 min
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- Every student knows the term parachute.
- Students will learn about the innovations of the Croatian inventor **Faust Vrančić**.
- Faust Vrančić was born in 1551 in Šibenik, Croatia and died in 1617 in Venice, Italy. He was a polymath, lexicographer, inventor and bishop.
- As a child, he attended school in Venice and then the University in Padua, where he studied law, engineering, physics and mechanics.
- One of the inventions is a parachute that the students will make themselves.

Step 2: Making parachutes	Estimated time: 25 min
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Making parachutes:

- Students make a parachute according to the teacher's instructions
- Drop the parachute from as high as possible.
- Measure the landing time.

Step 3: Presentation of finished works	Estimated time: 10min
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Students show their work.

Students conclude that the landing speed of the parachute depends on the size of the parachute.

The teacher asks the students about the difficulty of the task whether they had problems making the parachute.

### Assessment activities

Activity 1: Evaluation sheet

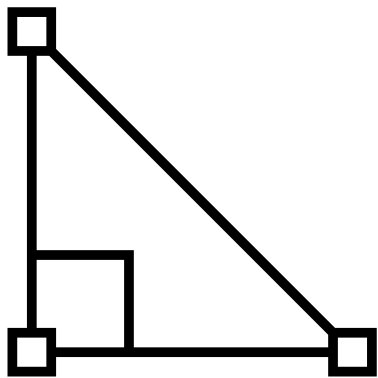
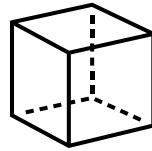
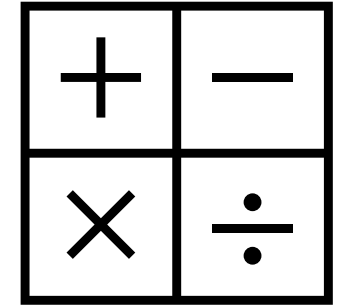
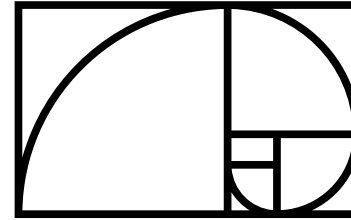
Students fill out the evaluation sheet.

### Attachments

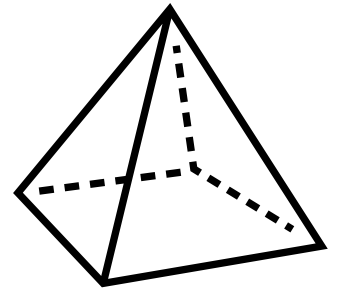
- Evaluation sheet
- Presentation about F.Vrančić

References:

- <https://www.youtube.com/watch?v=BRh3Ca96cgE>
- <https://enciklopedija.hr/natuknica.aspx?ID=65386>



# Build your own parachut



# Faust Vrančić

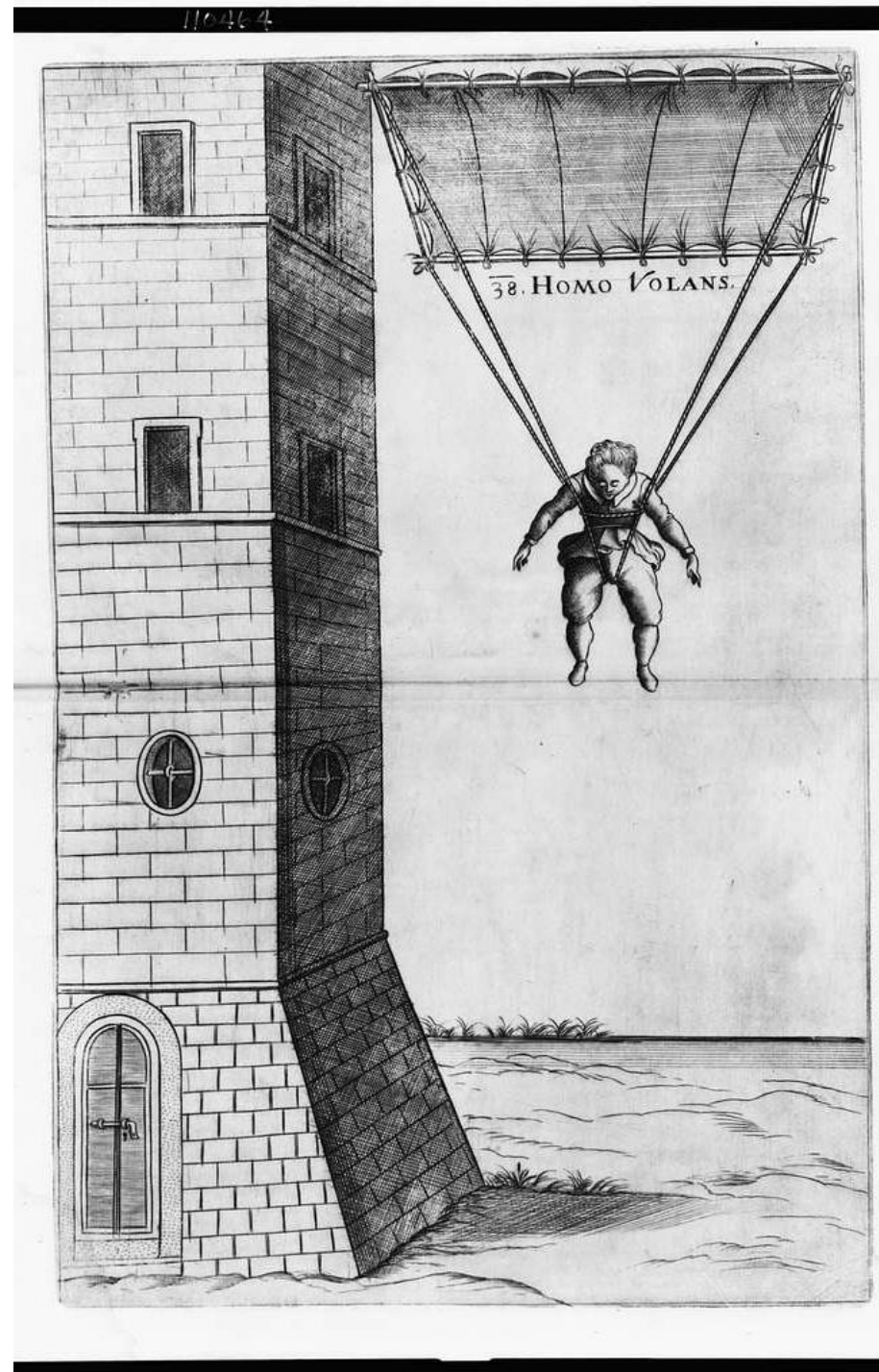
- Faust Vrančić was born in 1551 in Šibenik, Croatia - died in 1617 in Venice, Italy.
- He was a polymath, lexicographer, inventor and bishop.
- Education: as a child, he attended school in Venice and then the University in Padua where he studied law, engineering, physics and mechanics.



# Homo Volans

Vrančić's masterpiece was *Machinae Novae*. It contains 49 pictures of 56 different machines and devices.

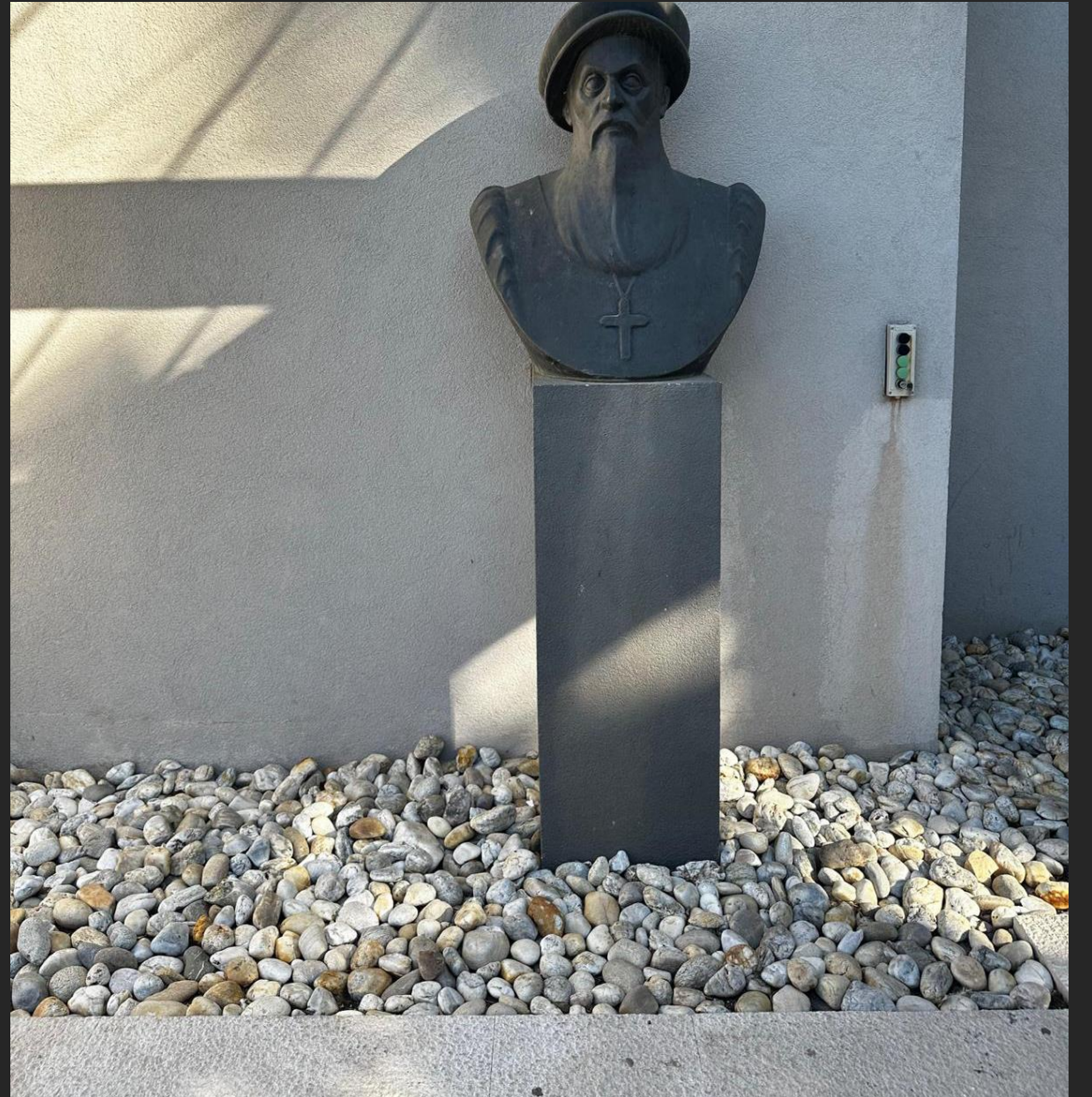
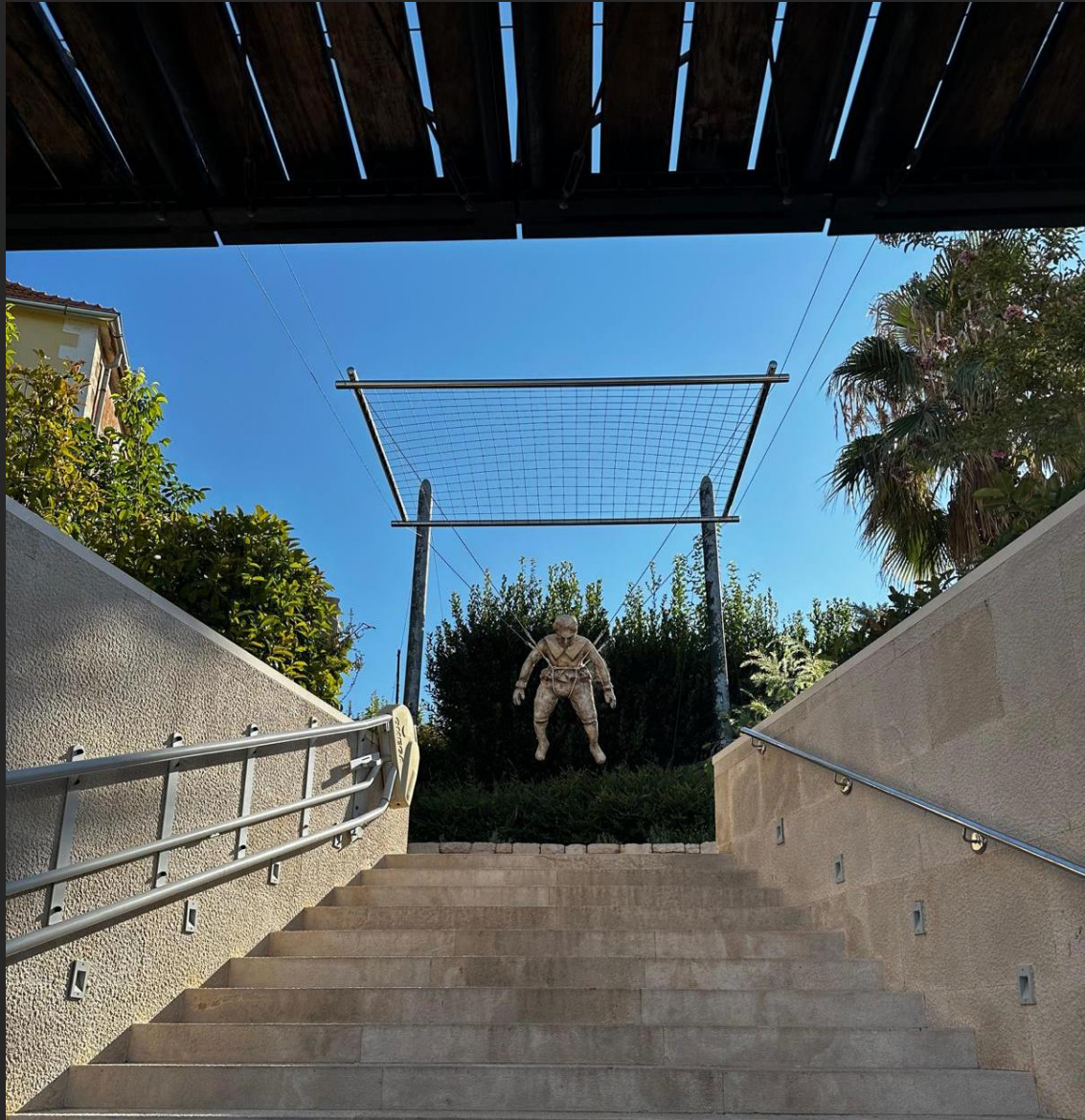
One of the illustrations in *Machinae Nove* is a sketch of a parachute - *Homo Volans* (The Flying Man).



# The Memorial Center

In 2012 the Memorial Center „Faust Vrančić“ was opened on the island of Prvić, Croatia.





# Materials needed:

- rope
- plastic bags
- hot glue
- "parachutists" (toy or some other object)
- a ruler
- scissors





# Making parachutes:

## STEP 1:

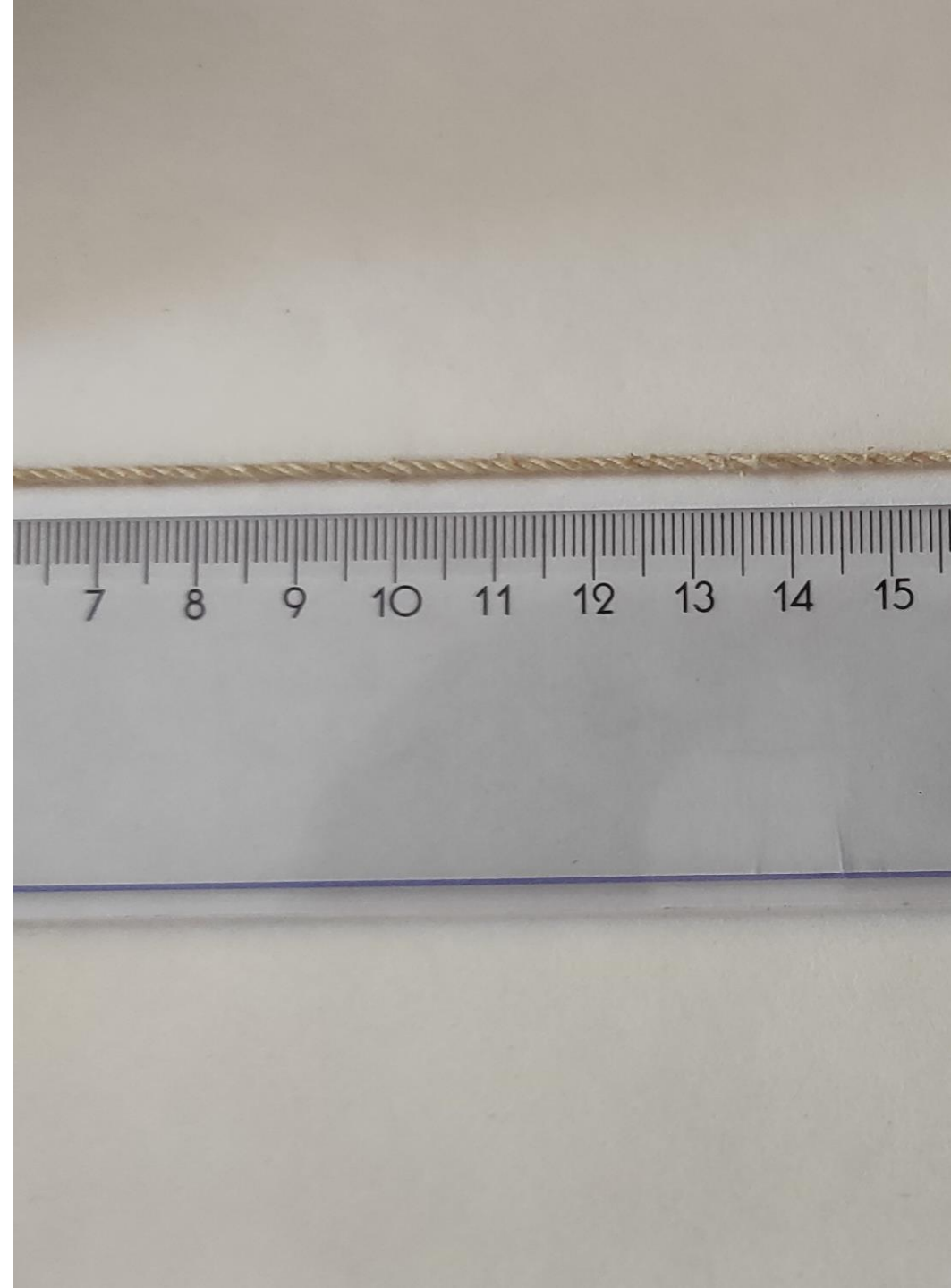
- cut a plastic bag in the shape of a square
- put 4 wooden sticks on the back of the plastic bag



# Making parachutes:

## STEP 2:

- measure and cut 4 pieces of rope of equal lengths



# Making parachutes:

## STEP 3:

- prepare ropes for gluing where the wooden sticks cross each other



# Making parachutes:

## STEP 4:

- glue the ropes and wooden sticks to the cut square plastic bag



# Making parachutes:

## STEP 5:

- wait for the glue to set



# Making parachutes:

## STEP 6:


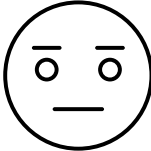
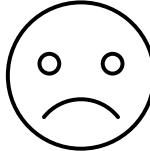

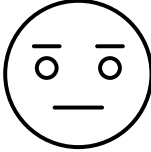


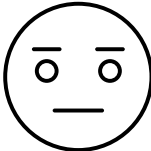


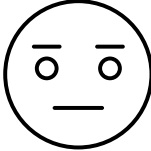

- tie the paratrooper with all 4 ropes
- drop the parachute from as high as possible.
- measure the landing time.



## SELF – ASSESSMENT

NAME:

DATE:

I followed directions			
I did my best and had a positive attitude			
I completed my work			
I liked the activities			

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