

Before Copernico and after Copernico

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This work is addressed to young people, 13 -14 years old.

Requirements:

- Experience with the concept of force, balance and speed
- Experience of measure
- Knowledge on direct and inverse proportionality
- Abstractive abilities
- Dialectical ability
- Dynamic balance
- Solar System
- Reference System

The purpose of this work is:

- 1) Looking at the Starry Sky, ask questions and search for answers. Someone before us has been asking the same questions and has been trying to find answers: going through the history of science, experiencing the same queries and contrasts.
- 2) Each student embodies a particular scientist, and fights to support their theory. In this way the student acquires the concepts of the theory they are supporting.
- 3) The debate amongst the students will lead to an outcome that will be perceived as a personal victory, rather than taken for granted.
- 4) A certainty will produce new queries and ways forward. Theory of Relativity (Albert Einstein, Power Point presentation)
- 5) We will demonstrate that the way to knowledge has no limits one must never feel satisfied.
- 6) Finally, there is a comparison between Copernican Revolution and Darwinian Revolution.

For each student to embody a particular scientist, they will need to be familiar with the basic contents of the theory they are supposed to support.

- Therefore, pupils will be provided with some forms about every scientist (Tolomeo, Aristarco di Samo, Copernico, Galileo, Keplero, Newton).
- It will be necessary to consult some museum sites on line (for example "Collana – Gli strumenti della scienza" where you can find a session for each instrument used by Galileo (binoculars, compass), using interactive tools, PDF, videos).
- Pupils are also recommended to watch the movie "Agorà" that tells the story of the philosopher and scientist of Ancient Greece, Aristarco of Samo.
- To achieve a better understanding of the concept of ellipse, a prototype will be made with paper, pencil and rope (confirming elliptic properties), followed by a visit to St. Peter square where, putting your feet on one of the two circles that represent the foci of the ellipse, you can observe the perfectly aligned columns.
- We will close with a PowerPoint presentation (the first on a summary of the work, the second about the comparison between Darwinian Revolution and Copernico Revolution, and the third about Einstein and his Relativity Theory).

Objective:

Scientists swim upstream.

LOOK HOW MANY TIMES THE WORD "DIFFERENT" IS MENTIONED: The historical setting of the scientist will also be considered. Our objective is to highlight how our way of thinking is highly influenced by common thought, and how difficult "swimming upstream" can be. The "genius" lays in those who dare swimming upstream.