

Title: ORBITS IN ACTION: EXPLORATION OF THE SOLAR SYSTEM.

Educational level: 6th grade. 3rd Cycle of Primary Education.

Curricular areas: Social Sciences.

Timing: 1 session of 45 min (1er trimester).



Summary

Students will explore the solar system by simulating planetary movements using their own bodies, without the need for technology or robotics kits. They will work in groups to "program" their movements, representing the concepts of rotation and translation and understanding the differences between the planets and their orbits around the sun.

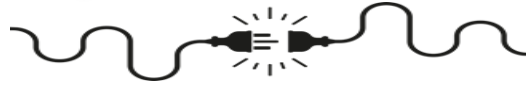


Aims

- To know the order of the planets in the solar system and their characteristics.
- Understand the rotational and translational motions of the Earth and other planets.
- Encourage teamwork and the ability to follow instructions.
- Develop logical thinking and organizational skills.

Key competences to be developed: athematical competence and competence in science, learning to learn, and social and civic competences.

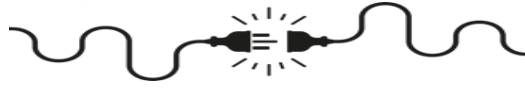




How do we do it?



1. Introduction to the topic (5 min): brief explanation of the solar system and the rotation and translation movements.
2. Role planning (5 min): each group represents a different planet. One student will be the "sun" and will be in the center. Students will agree on how they will represent the movements of their planet (walking in circles or rotating on its axis).
3. Simulation of orbits (15 min): students represent the orbit of their planet revolving around the "sun". At the same time, they make their own rotational movement. Thus, they understand planetary movements in a visual and kinesthetic way.
4. Velocity Challenge (10 min): each group is assigned a time representing the duration of their planet's orbit, mimicking how planets closer to the sun orbit faster than those farther away. Students must adjust the speed of their motion based on their "distance" from the sun.
5. Final discussion (10 min): reflect on the observed differences between planets and how their movements affect life on Earth (day, night, seasons).



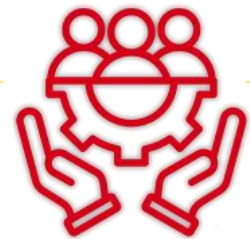
Suggestions

- Assign each planet a distance and a color so that students can identify their orbits and differentiate each planet.
- Add items such as cards or posters with fun facts about the planets that students can carry as they go through the motions.
- Use a large ball or cone to represent the sun and mark the center of each planet's "orbit".



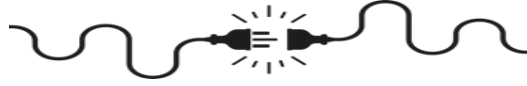
Resources

- **Human:** teachers and students.
- **Material:** poster boards or posters to identify each planet and its characteristics. Paper circles or cones to mark the orbits.



Space: classroom, exhibition space (e.g., hallway).

Type of activity: couples - small group.



Printable cards of the planets:



Actividades Desenchufadas



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MARTE 	JÚPITER 	SATURNO 	URANO 	NEPTUNO 
MERCURIO 	VENÚS 	LUNA 	TIERRA 	MARTE 
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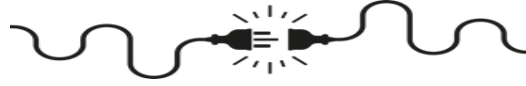
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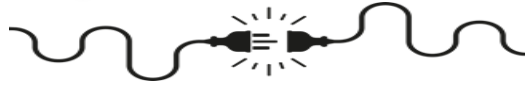
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What have we learned?

Assessment Criteria	4 Excellent	3 Very good	2 Satisfactory	1 Needs improvement
Correctly identify the planets and their characteristics.	Correctly identify all the planets and their main characteristics.	Correctly identifies most of the planets and their characteristics.	Identifies some planets and their characteristics, but needs support.	He has difficulty identifying the planets and their characteristics, even with help.
Simulates rotation and translation movements accurately.	It performs the simulation of both movements accurately and autonomously.	Perform the simulation of both movements correctly with minor corrections.	Simulates movements with assistance, but incompletely or inaccurately.	He has difficulty simulating movements, even with support.
Actively participates and cooperates in group activity.	Participates actively and cooperates fully in all group tasks.	Participates actively most of the time, collaborating as a group.	Partial participation and collaboration, with frequent support.	Does not participate or collaborate in the activity, even with help.
Use the vocabulary specific to the activity (rotation, translation, orbit, etc.).	Correctly uses all the specific vocabulary of the activity in an autonomous manner.	Uses most vocabulary correctly, with occasional reminders.	Uses vocabulary partially or with frequent assistance.	Has difficulty using specific vocabulary, even with support.



Computational Thinking



Logic (prediction and analysis): thinking to make predictions, solve problems and make decisions based on available information.

Algorithms (steps and rules): is a step-by-step process that solves a problem or completes a task.

Decomposition (breaking down into smaller parts): breaking down problems into smaller and more manageable parts, which are easier to understand and solve.



More information

QR codes to the activity resources:



[Printable cards of the planets.](#)