Celestial Discovery Observatory

Keywords:

Space exploration, Astronomy, Observation, Creativity

Target group:

Children aged 10 and above

Objectives:

This activity introduces participants to the fundamentals of space exploration while teaching them to identify and understand celestial objects through interactive map-based learning. Through collaborative tasks, it fosters teamwork as participants work together to solve challenges, while also developing critical thinking skills as they analyze spatial relationships and problem-solve in the context of astronomy. The experience blends scientific learning with cooperative skill-building in an engaging, hands-on format.

General Guideline on Time Allocation:

The duration needed to carry out this activity may vary depending on the specific group of children. Teachers are encouraged to adapt the implementation according to the needs, interests, and dynamics of the group.

In the preparatory phase, teachers may use a variety of activities to introduce and contextualize the chosen topic. These can include discussions, videos, drawings, storytelling, or even a field trip, depending on the age and background knowledge of the children.

The main construction phase, during which children plan and build their urban element using LEGO bricks, should typically not exceed 45 to 60 minutes. However, this phase often stimulates further curiosity and questions among the children, potentially leading to extended engagement or follow-up activities. For more detailed instructions and pedagogical support on how to implement activities of INNO–kids project, please download the Teacher's Methodological Guide.

Materials and Resources Needed:

- Cardboard tubes (toilet paper rolls or paper towel rolls)
- Aluminum foil
- Craft materials (colored paper, markers, glue)
- Scissors
- Star maps or constellation charts
- Astronomy books
- Chart papers
- Marker pens

Introduction:

The "Celestial Discovery Observatory" activity helps children explore space through star maps and creative expression. They will build observatories and use maps to identify celestial objects.

Procedure:

Preparation
Divide pupils into groups.

Construction

- Use cardboard tubes wrapped in aluminum foil to create the structure.
- Decorate with craft materials.

Details

- Use star maps and astronomy books to identify celestial objects.
- Mark locations of stars, planets, and constellations on the maps.

Discussion
Groups share their observatory designs and map findings. Discuss:

- Identified celestial objects.
- Interesting facts learned.
- Creativity in observatory design.

Reflections
Reflect on building and learning about celestial objects. Discuss the importance of creativity in space exploration.

Tips:

- Educational Station: Display posters or visual aids about space exploration. Provide information about famous astronomers and space missions.

Additional Considerations:

Differentiation:
Provide additional support or simplified instructions for pupils who may require extra assistance. For advanced pupils, offer extension tasks such as researching further sustainable practices or designing more complex models.

Assessment:
Assess pupils based on their participation and engagement during discussions and hands-on activities. Evaluate the creativity, effort, collaboration, depth of understanding demonstrated in their models, critical thinking, ability to provide constructive feedback and presentation skills.

Curriculum Connections:

This activity integrates:
Science and Technology *(astronomy, celestial bodies, and space exploration; spatial reasoning, scientific concepts and observation)*
Environmental Education *(Earth's place in the universe, planetary stewardship)*
Mathematics *(spatial orientation, measurement, scale, and data interpretation)*
Social Skills *(problem-solving, critical thinking, and collaboration)*

SDG Connections:

- **SDG 11:** Sustainable Cities and Communities – Pupils explore how to ensure inclusive, safe, resilient, and sustainable urban environments.
- **SDG 4:** Quality Education – Pupils engage in learning that promotes inclusive and equitable quality education.

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