SPACE BOX INQUIRY PROJECT

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Space Box Inquiry Assignment

Lesson Overview

Working in a group students will design and build a Space Box. You will become experts on a method of space exploration or a phenomenon in space. Each group will be choosing a topic, researching it, and creating a display box with miniature models about the method/phenomena you choose. Students will present the information orally and visually to the younger grades in a Space Fair. An example of a story that can be created is, An alien is looking for a new home, so he visits all the planets to see which would be the best place for him to live. Students give important facts and research about the planets while telling the story of the alien's adventures.

Students will first present their Space Box orally to their class and then a primary class of students in the form of a story. Each group member will tell part of the story.

OVERALL EXPECTATIONS

Students will: 1. assess the impact of space exploration on society and the environment; 2. investigate characteristics of the systems of which the earth is a part and the relationship between the earth, the sun, and the moon; 3. demonstrate an understanding of components of the systems of which the earth is a part, and explain the phenomena that result from the movement of different bodies in space.

Specific Expectations

2.3 use scientific inquiry/research skills (see page 15) to investigate scientific and technological advances that allow humans to adapt to life in space Sample guiding questions: Why is life in space a challenge for humans? How might some of those challenges be overcome? What technologies exist now to allow us to overcome the challenges? In what ways does the International Space Station mimic conditions on Earth? What technologies create conditions similar to Earth's on the space station, and what differences remain? How might robotics play a role in human adaptation to space life? Under what circumstances might robots replace humans in space exploration?

2.4 use appropriate science and technology vocabulary, including axis, tilt, rotation, revolution, planets, moons, comets, and asteroids, in oral and written communication

2.5 use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., use a graphic organizer to identify and order main ideas and supporting details for a report about how science and technology can help humans adapt to life in space)

Possible Inquiry Questions

- How does the moon change faces?
- How do lunar/solar eclipses occur?
- What happens when a meteor hits land?
- Why is Pluto no longer a planet?
- Why do planets have names from Roman mythology?
- How are stars and constellations important?
- What is necessary to launch people to space?
- Why have people been fascinated with constellations since the beginning of time?
- Which Canadians astronauts or scientists have made the most significant contributions to space exploration?
- What are the most important achievements in space science from around the world?
- How do astronauts meet their basic needs in space?

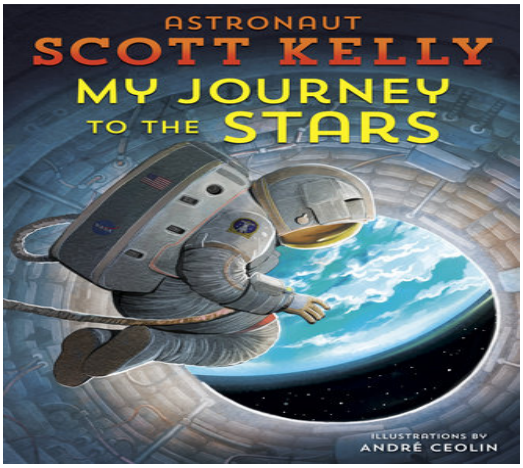
STEP 1: Students are given a picture of a 'Wonder Jar' and asked to write out all their questions about Space.

STEP 2: Groups are created with students who have similar interests.

STEP 3: Various websites for research and books are presented to the students.

STEP 4: Each group is given a wooden box 8.5’ by 11’ but any size box would work. An empty pizza box is also a possibility. The class is shown different materials that can be used from the art cupboard and from the dollar store. Some examples include: popsicle sticks, pipe cleaners, toilet paper rolls, construction paper, playdough etc. For example, students could create a replica of the International Space Station using popsicle sticks.

STEP 5: Teacher reads several story books about Space. For example, *My Journey to the Stars* by Scott Kelly.The class discusses the story and how they would create using the Space Box to represent the narrative. Students are told that research shows we retain more information when it is presented in the form of a story and that complex scientific information is easier to understand when presented as a story or narrative.



STEP 6: Students are given a task sheet to divide up jobs and begin working on the creation of their Space Box and the narrative they will use. An example of a narrative is the story of the Apollo 13 space mission.

STEP 7: Students spent approximately 3 weeks working on their Inquiry Projects. Teacher circulated and helped groups with design ideas, narratives and research.

STEP 8: Students presented their Space Box design to the class and the story was read out to the class. Do not put research information on the Space Box; all research is presented orally or through pictures or minature replicas on the Space Box.

STEP 9: Students presented their inquiry projects to the primary students in the form of a SPACE FAIR. Because, the information was in a story formall of the research was simplified and easy to understand.

Assessment Rubric and other attachments are included.

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project)

RESOURCES

- Assessment Rubric for Assignment (https://connex.stao.ca/sites/default/files/space_box_inquiry_assessment_rubric_0.docx)
- Assignment Handout for Students (https://connex.stao.ca/sites/default/files/space_box_inquiry_assignment.docx)
- Lesson Plan (https://connex.stao.ca/sites/default/files/space_box_inquiry_lesson_plan.docx)
- Space Box Photos (https://connex.stao.ca/sites/default/files/space_box_inquiry_photos.docx)

ELEMENT

- Inquiry (/expert-elements/inquiry)

(/classroom-catalysts) **RETURN TO CATALYSTS (/classroom-catalysts)**