Astronaut Introduction

Rich Task 3 Activity 1

Introduction:

Most people have an image in their mind of what outer space looks like. Is this image accurate or partly shaped by the media we consume? Throughout this rich task expect to explore celestial objects like the Earth, Moon and Stars, unseen processes like the Big Bang and the inner workings of tides. All of this content is also framed with a background in current Irish space science.

This activity provides an opportunity for students to make initial thoughts and to identify prior knowledge without teacher guidance. The students will also formulate questions arising from initial thoughts which can be discussed as a class, left as unanswered, and later touched upon throughout the following activities. This activity scaffolds the next (Rich Task 3 Activity 2), which looks at a model for the Origin of the Universe.

Preparation Required:

- Printing

Downloadable Materials:

- Worksheet 3.1
- Expected Student Responses Worksheet 3.1

Relevant Junior Cycle Learning Outcomes:

Students should be able to….

NOS LO 2: Recognise questions that are appropriate for scientific investigation, pose testable hypotheses, and evaluate and compare strategies for investigating hypotheses.

E & S LO 1: Describe the relationships between various celestial objects including moons, asteroids, comets, planets, stars, solar systems, galaxies and space.

E & S LO 2: Explore a scientific model to illustrate the origin of the universe.

Teacher Resource

Learning Intentions:

Students will be able to…

- Consider their prior knowledge of outer space
- Communicate their ideas in a small group
- Formulate questions for investigation

Prior Knowledge/Horizon Content Knowledge:

- Formulating questions
- Solar system

Differentiation and Accessibility Suggestions:

This activity is accessible for all students and does not require prior knowledge of the topic. Students can decide the depth of questioning and discussion.
Any of this activity can be done alone or in pairs

Activity Outline:

Activity Name	Astronaut Introduction
Alignment to ISLE investigation	Initial Prompt and Forming Hypothesis
Rationale	To assess prior knowledge and formulate questions to explored throughout the rich task
Activity Description	(Q1. *worksheet 3.1)* Students create an image of their own perception of outer space. (Q2. *worksheet 3.1)* Students question the possibility of sound in outer space (Q3. *worksheet 3.1)* Students question the underpinning forces that created the universe and that keep it going *(*Q4. *worksheet 3.1)* Students create questions based around outer space in any topic they are interested in
Link to other activities	Scaffold for Rich Task 3 Activities 2 - 4

Link to current research in DIAS Dunsink Observatory	The Solar and Space Weather group at DIAS Dunsink consists of PhD students, postdocs and professors who study different aspects of the Sun and Space Weather. Through their research, scientists can get daily updates on the activity of the Sun (https://solarmonitor.org) and advise on precautions that can be taken to protect Ireland's power grid from potential solar storms. More information on specific projects can be found here: https://www.dias.ie/solarphysics