Niamh Barry JC Science 2017 Specification

Learning Outcomes:

Nature of Science	Students should be able to produce and select data (qualitatively/quantitatively), critically analyse data to identify patterns and relationships, identify anomalous observations, draw and justify conclusions
Earth and Space	• Students should be able to examine some of the current hazards and benefits of space exploration and discuss the future role and implications of space exploration in society • Students should be able to interpret data to compare the Earth with other planets and moons in the solar system, with respect to properties including mass, gravity, size, and composition

You received an email from the Irish Government with the subject line: 'Wanted: Planetary Investigators.' The email reads, 'The National Aeronautics and Space Administration (NASA) has selected you to manage a team of planetary investigators to research the planets in the solar system. Your team will deliver your analysis in a presentation to a group of top NASA officials. Your team will focus on a certain planetary characteristic or feature and will analyse and interpret data gathered by telescopes and space technology.

Task 1

Work cooperatively with your class to decide which features or characteristics should be included in the presentation.

- Compile a class list of ideas.
- Once your team has chosen a feature or characteristic to investigate, beg in researching.
- Gather data about your topic for each planet in our solar system.
- Determine how to organize your data in the most appropriate manner.

Task 2

- As a group, analyse and interpret your data. Consider the following que stions as they relate to your topic.
- What similarities and differences exist among the planets?

- What types of technology were used to gather the information?
- What is known about your topic? What current research is being imple mented that will provide further information about your topic?
- What future research would you suggest?
- Is information about your topic subject to change in the future?
- If so, what effects might these changes have on the field of science?
- On technology? On society?

Task 3: Critically review

Critically review your analysis to make certain it involves interpretation of facts rather than simple recall. Use specific planets as examples when making a point.

- Develop an oral presentation of your findings.
- Be creative. Drawings, diagrams, models, tables, photographs, maps, and s tatistics can enhance your presentation.
- Decide on the role each person in your group will have during the presentation.
- Keep your audience in mind. An audience at an air and space museum will li kely consist of people with a wide range of ages and levels of education.
- How will you present science data and concepts to this audience?
- Have your teacher approve your presentation.

Task 4: Practice

As practice for the museum presentation, share your findings with the other gr oups.

Afterward, discuss the following questions.
What new information did you learn while listening to presentations from the ot her groups?

How does your topic relate to other planetary features?

How did this new information expand your understanding of your own topic?

Was the presentation appropriate for the intended audience? Why or why not?

How did data gathered by space telescopes, spacecraft, and other types of tec hnology help you to better analyse information about the planets?