

# INTERPLANETARY INQUIRY PLAN

## Interplanetary Cycle Trail Overall Question

"How large is our Solar System?"

### Links to the Curriculum

Social Sciences | **Science** | English | Mathematics | Arts | (Digital) Technology | Physical Education

Key Competencies: Thinking | Using Language, Symbols and Text | Managing Self

### Key Concepts and Understandings

- There are very large distances between planets.
- Living things are dependent on the sun.
- Planets are made up of different elements to Earth.

### Possible Learning Intentions

- Our position in space enables life.
- Explain the elements that sustain life.
- Compare earths elements to those of another planet.
- Research a chosen planet in our solar system to present to an audience.
- Demonstrate an understanding of the distances between our planets and the scale of our solar system
- Make comparisons between the distances on the Otago Central Interplanetary Trail and our Solar System.
- Discuss and describe the elements that make up each planet in our solar system.
- Conduct an in-depth practical Earth and Space Science investigation on a planet.
- Use the design process to develop a spacecraft to travel our solar system.

## Science Achievement Objectives: Planet Earth and beyond and Physical

### Level 2

Astronomical systems

Share ideas and observations about the Sun and the Moon and their physical effects on the heat and light available to Earth.

### Level 3 – 5

Astronomical systems

Investigate the components of the solar system, developing an appreciation of the distances between them

### Level 4

Astronomical systems

Investigate the components of the solar system, developing an appreciation of the distances between them.

### Level 5

Astronomical systems

Investigate the components of the solar system, developing an appreciation of the distances between them.

### Level 6

Astronomical systems

Investigate the interactions between the solar, lunar, and Earth cycles and the effect of these on Earth.

### Possible Activities

- **Ride the Otago Central Rail Trail** and complete the Interplanetary Trail
- **Name the planets:** Name the planets, discover the distances between planets and relate this to the distances on the Otago Central Rail Trail.
- **Story Planet:** Write stories using the templates using the information discovered about the planets of the solar system.
- **Design Your Spacecraft:** Design a futuristic spacecraft and label the parts. Use real facts and evidence to back up your parts and design.
- **Watch the Interplanetary video** and take notes on the different planets of the solar system.
- **Use a Venn diagram** to compare a chosen planet to earth.
- **Design and create your own interplanetary map** within your school using a larger scale.
- **Complete a research project** using the inquiry process and present it to an audience. Such as:
  - Create a explanation video using Google Sheets, Powerpoint or Keynote.
  - Create a Green-screen documentary using iMovie or similar.
  - Create a book, ebook or website with key information of the research completed.
  - Create a scratch game incorporating the elements of a planet you have researched.
- **Mission to Mars:**
  - In groups, plan a trip to Mars. What would you need to take, thinking about space in the aircraft, weight, any resources and basic necessities you will need to survive on Mars for 19 months.
  - In groups, design a Mars Space Station and build it in Minecraft or draw it up in a book. Discuss what you are going to need to survive on Mars such as air, water, food, plants, toilets, sleeping area...

