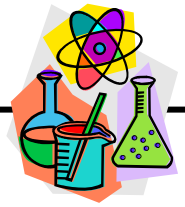


Understanding Earth and Space

Did You Know? Centuries ago, scientists believed that the Earth (not the Sun) was the centre of our solar system.

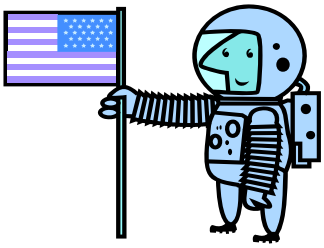
1. Over time, humans have made hypotheses about space and used celestial objects for different purposes. Examine traditional Aboriginal beliefs about the sky (space) and how celestial objects were used to measure time. If possible, listen to an Elder explain these beliefs. After listening, record notes about what you heard.

Use Tools Preparing for Listening II and Note Taking II.

2. Investigate and list other beliefs about celestial objects during ancient times (e.g., Ancient Egyptian, Ancient Romans, Ancient Greeks). What tools did they use that involved celestial objects?

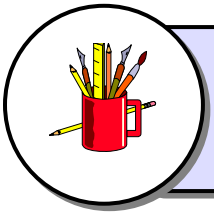
Ancient Peoples	Beliefs

3. With a partner, create a timeline that shows the important dates of the discoveries and technological advancements that improved our understanding of space. Include discoveries and advancements such as:



- creation and use of the first telescope by Galileo
- first time a space ship achieved orbit
- first time to land on the moon
- remote exploration of Mars.

See Time Line for help. As a class or in groups, discuss how the discoveries and advancements in your time line changed our perceptions and ideas about space.



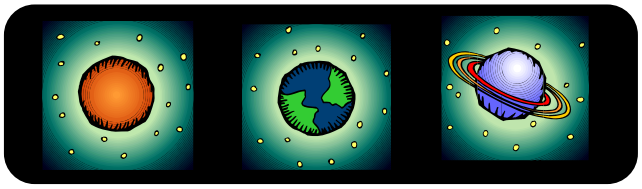
Use Tools Note Taking V and Time Line Starter.

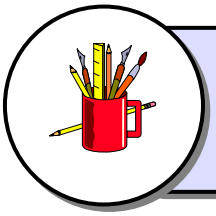
4. With classmates, generate a variety of questions such as the following:

- What are the names of the planets of our solar system?
- Which are the inner planets and which are the outer?
- What other celestial bodies exist in our solar system? What is an orbit?
- What are objects in our solar system made of? Which are terrestrial and which are gaseous?
- How do other celestial bodies in our solar system compare to earth?

Visit a local space science centre or one of the following Web sites to find answers to your questions:

- http://www.solarsystem.nasa.gov/
- http://www.nineplanets.org/
- http://www.edmontonscience.com/.





Use Tools Question Organizer I or Question Organizer II.

5. Complete the following experiment or create another experiment related to the movement of celestial bodies. Before you begin, make sure you understand the process of Scientific Inquiry.

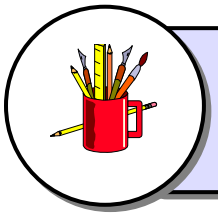
Question
How long is the moon's cycle?
Hypothesis/prediction
Materials
Calendar/journal
Procedure
1. Observe the moon and note its size and the date. Draw a picture of its approximate shape. 2. Continue to observe and draw the moon at regular intervals over the course of a month.
Results: List below or on a separate page. Use a chart and/or graph to show your results.
Conclusion: Compare findings with prediction and classmates' results. Write a conclusion and/or inference statement. Relate your conclusion to the movement of the moon, earth and sun.

6. Investigate and explain how to locate the following celestial bodies:

   - one or more planet
   - a constellation
   - a satellite.

   Write instructions in your own words on how to locate these celestial bodies. Include diagrams and other graphics.

7. Investigate how the moon affects the tides of the ocean. Research on the Internet or by using other resources, summarize the information in the space below and draw a diagram.



Use Tool Preparing for an Internet Search.