

## Astronomy, Oceanography and Meteorology

### INQUIRY

#### Process Skills

- \_\_\_\_\_ Conduct experiments, collect, organize and analyze data. *EarthA-01*

### CONTENT

#### Instruments of Astronomy

- \_\_\_\_\_ Create a timeline of the history of people and the instruments they used to study space. *EarthA-02*
- \_\_\_\_\_ Explain the various types of instruments and their applications to space exploration. *EarthA-03*

#### Solar System

- \_\_\_\_\_ Explain the formation and evolution of the solar system. *EarthA-04*
- \_\_\_\_\_ Describe planetary motion based on Kepler's and Newton's laws. *EarthA-05*
- \_\_\_\_\_ Analyze the relationship between the sun, moon and Earth (e.g. phases, eclipses, tides). *EarthA-06*

#### Cosmology

- \_\_\_\_\_ Identify different methods for determining intergalactic distances. *EarthA-07*
- \_\_\_\_\_ Differentiate between different types of galaxies. *EarthA-08*
- \_\_\_\_\_ Discuss stellar evolution. *EarthA-09*
- \_\_\_\_\_ Explain how the process of spectral analysis is used to study stars. *EarthA-10*
- \_\_\_\_\_ Categorize stars on the Hertzsprung Russell diagram. *EarthA-11*

#### Oceanography

- \_\_\_\_\_ Describe topographic features of the ocean floor. *EarthA-12*
- \_\_\_\_\_ Describe the composition of sea water with regards to salinity and density. *EarthA-13*
- \_\_\_\_\_ Compare and contrast surface and sub-surface currents. *EarthA-14*

#### Climatology

- \_\_\_\_\_ Summarize the factors that determine climate. *EarthA-15*
- \_\_\_\_\_ Explain how climate zones are characterized. *EarthA-16*

#### Meteorology

- \_\_\_\_\_ Describe the composition and temperature structure of the atmosphere. *EarthA-17*
- \_\_\_\_\_ Summarize the main types of clouds and their associated weather. *EarthA-18*
- \_\_\_\_\_ Explain the relationship among air pressure, heat and winds. *EarthA-19*
- \_\_\_\_\_ Describe the Coriolis effect and its influence on global winds. *EarthA-20*
- \_\_\_\_\_ Interpret station model data, weather maps and satellite images. *EarthA-21*

### CONNECTIONS

#### Science Practices

- \_\_\_\_\_ Assess the validity of scientific data by analyzing the results, similar previous experimentation, possible misrepresentation of data presented and potential sources of error. *EarthA-22*
- \_\_\_\_\_ Describe how scientific knowledge and explanations may change with new information over time (e.g., discovery of new planets and stars). *EarthA-23*

#### S/T/S (Science, Technology, Society)

- \_\_\_\_\_ Identify careers that require a knowledge of astronomy, oceanography and meteorology. *EarthA-24*
- \_\_\_\_\_ Analyze ways that humans affect the Earth and its resources. *EarthA-25*