

**Astronomy Day with McDonald Observatory IYA 2009**  
**Afternoon sessions Science TEKS Grades 6 – 8**

**Grade 6**

6.2: The student uses scientific inquiry methods during field and laboratory investigations.

\*B. collect information by observing and measuring.

\*C. analyze and interpret information to construct reasonable explanations.

\*D. communicate valid conclusions.

*Students participate in a guided inquiry videoconferencing session about the characteristics of the Moon and craters and make real-time observations of the Moon. They may communicate their results in reports following the videoconference.*

6.3: The student uses critical thinking, and scientific problem solving to make informed decisions.

A. analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;

C. represent the natural world using models and identify their limitations.

D. evaluate the impact of research on scientific thought, society, and the environment.

E. connect Grade 6 science concepts with the history of science and contributions of scientists.

*Students observe the Moon 400 years after historic observations made by Galileo Galilei in 1609. Students explore telescopic observations of the Moon, historic images, and explore features of impact craters.*

6.4: The student knows how to use a variety of tools and methods to conduct science inquiry.

A. collect and analyze information using tools: cameras and computers.

*Students are collecting and analyzing data (digital images) from McDonald Observatory telescopes via videoconference. In a sense, this is remote observing.*

6.13: The student knows components of our Solar System.

A. identify characteristics of objects in our solar system including the Sun, planets, meteorites, comets, asteroids, and moons.

*Students may identify changes in the appearance and location of the Sun, Moon or Venus over several days/weeks.*

AFTERNOON SESSIONS ONLY

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## **Grade 7**

7.2: The student uses scientific inquiry methods during field and laboratory investigations.

\*B. collect data by observing and measuring.

\*C. organize, analyze, make inferences, and predict trends from direct and indirect evidence.

\*D. communicate valid conclusions.

*Students participate in a guided inquiry videoconferencing session about the characteristics of the Moon and craters and make real-time observations of the Moon. They may communicate their results in reports following the videoconference.*

7.3: The student uses critical thinking, and scientific problem solving to make informed decisions.

A. analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;

C. represent the natural world using models and identify their limitations.

D. evaluate the impact of research on scientific thought, society, and the environment.

F. connect Grade 7 science concepts with the history of science and contributions of scientists.

*Students observe the Moon 400 years after historic observations made by Galileo Galilei in 1609. Students make telescopic observations of lunar craters, and create models of craters to discover crater features and understand why craters look the way they do.*

7.4: The student knows how to use a variety of tools and methods to conduct science inquiry.

A. collect and analyze information using tools: cameras and computers.

*Students are collecting and analyzing data (digital images) from McDonald Observatory telescopes via videoconference. In a sense, this is remote observing.*

## **Grade 8**

8.2: The student uses scientific inquiry methods during field and laboratory investigations.

\*B. collect data by observing and measuring.

\*C. organize, analyze, make inferences, and predict trends from direct and indirect evidence.

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\*D. communicate valid conclusions.

*Students participate in a guided inquiry videoconferencing session about the characteristics of the Moon and craters and make real-time observations of the Moon. They may communicate their results in reports following the videoconference.*

8.3: The student uses critical thinking, and scientific problem solving to make informed decisions.

- A. analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;
- C. represent the natural world using models and identify their limitations.
- D. evaluate the impact of research on scientific thought, society, and the environment.
- E. connect Grade 8 science concepts with the history of science and contributions of scientists.

*Students observe the Moon 400 years after historic observations made by Galileo Galilei in 1609. Students make telescopic observations of lunar craters, and create models of craters to discover crater features and understand why craters look the way they do.*

8.4: The student knows how to use a variety of tools and methods to conduct science inquiry.

- A. collect and analyze information using tools: cameras and computers.

*Students are collecting and analyzing data (digital images) from McDonald Observatory telescopes via videoconference. In a sense, this is remote observing.*

8.13: The student knows characteristics of the Universe.

- A. describe characteristics of the universe such as stars and galaxies.
- B. Explain the use of light years to describe distances in the universe.
- C. research and describe historical scientific theories of the origin of the universe.

*Students will visit with astronomer Rachel Fuechsl who will answer questions about our planetary system, our galaxy and scientific theories as to the origin of our universe. Students may also communicate their results in reports following the videoconference.*

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