

Astronomy Day with McDonald Observatory IYA 2009
Afternoon sessions Science TEKS Grades 4 – 5

Grade 4

4.2: 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.

4.3: 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 4 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.

4.4. 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.

4.6: The student knows that change can create recognizable patterns.

*A. identify patterns of change **such as** weather, metamorphosis, and objects in the sky.

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

Grade 5

5.2: 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

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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.

5.3: 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 5 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.

5.4: 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.

5.6: The student knows that some change occurs in cycles.

*A. identify events and describe changes that occur on a regular bases **such as** in daily, weekly, lunar, and seasonal cycles.

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

5.12: The student knows the natural world includes Earth materials and objects in the sky.

C. identify the physical characteristics of the Earth and compare them to the physical characteristics of the moon.

D. identify gravity as the force that keeps planets in orbit around the Sun and the Moon in orbit around the Earth.

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

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