

**Live, From McDonald Observatory  
Videoconference  
“Observing Venus: explore its changes”  
Grades 3-5 TEKS alignments**



**Grades 3 – 5 TEKS - Science:**

- 112.14. Grade 3(b) - 2 (A) plan and implement descriptive investigations, including asking and answering questions, making inferences, and selecting and using equipment or technology needed, to solve a specific problem in the natural world.
- 112.14. Grade 3(b) - 2 (D) analyze and interpret patterns in data to construct reasonable explanations based on evidence from investigations.
- 112.14. Grade 3(b) - 2 (F) communicate valid conclusions supported by data in writing, by drawing pictures, and through verbal discussion.
- 112.14. Grade 3(b) - 3 (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student.
- 112.14. Grade 3(b) - 3 (C) represent the natural world using models such as volcanoes or Sun, Earth, and Moon system and identify their limitations, including size, properties, and materials.
- 112.14. Grade 3(b) - 3 (D) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.
- 112.14. Grade 3(b) – 4 (A) collect, record, and analyze information using tools, including microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, wind vanes, rain gauges, pan balances, graduated cylinders, beakers, spring scales, hot plates, meter sticks, compasses, magnets, collecting nets, notebooks, sound recorders, and Sun, Earth, and Moon system models; timing devices, including clocks and stopwatches; and materials to support observation of habitats of organisms such as terrariums and aquariums.
- 112.14. Grade 3(b) - 5 (A) measure, test, and record physical properties of matter, including temperature, mass, magnetism, and the ability to sink or float.
- 112.14. Grade 3(b) - 5 (B) describe and classify samples of matter as solids, liquids, and gases and demonstrate that solids have a definite shape and that liquids and gases take the shape of their container.
- 112.14. Grade 3(b) - 6 (A) explore different forms of energy, including mechanical, light, sound, and heat/thermal in everyday life.
- 112.14. Grade 3(b) - 6 (C) observe forces such as magnetism and gravity acting on objects.
- 112.14. Grade 3 (b) – 8 (B) describe and illustrate the Sun as a star composed of gases that provides light and heat energy for the water cycle
- 112.14. Grade 3 (b) – 8 (C) construct models that demonstrate the relationship of the Sun, Earth, and Moon, including orbits and positions.
  
- 112.15. Grade 4 (b) - 2 (F) communicate valid, oral, and written results supported by data.
- 112.15. Grade 4(b) - 3 (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student.
- 112.15. Grade 4(b) - 3 (C) represent the natural world using models such as rivers, stream tables, or fossils and identify their limitations, including accuracy and size.
- 112.15. Grade 4(b) - 3 (D) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.
- 112.15. Grade 4 (b) – 4 (A) collect, record, and analyze information using tools, including microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, wind vanes, rain gauges, pan

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balances, graduated cylinders, beakers, spring scales, hot plates, meter sticks, compasses, magnets, collecting nets, notebooks, sound recorders, and Sun, Earth, and Moon system models; timing devices, including clocks and stopwatches; and materials to support observation of habitats of organisms such as terrariums and aquariums.

- 112.15. Grade 4(b) - 6 (A) differentiate among forms of energy, including mechanical, sound, electrical, light, and heat/thermal.
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- 112.16. Grade 5 (b) - 2 (B) ask well-defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology;
- 112.16. Grade 5 (b) - 2 (D) analyze and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred) evidence;
- 112.16. Grade 5 (b) - 2 (F) communicate valid conclusions in both written and verbal forms.
- 112.16. Grade 5 (b) - 3 (D) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.
- 112.16. Grade 5 (b) - 4 (A) collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, prisms, mirrors, pan balances, triple beam balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices, including clocks and stopwatches; and materials to support observations of habitats or organisms such as terrariums and aquariums; and;
- 112.16. Grade 5 (b) - 5 (A) classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy;
- 112.16. Grade 5 (b) - 6 (C) demonstrate that light travels in a straight line until it strikes an object or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water;
- 112.16. Grade 5 (b) - 8 (D) identify and compare the physical characteristics of the Sun, Earth, and Moon.;

**Grades K – 4 NSES & Grade 5 NSES:**

- Content Standard in K-4 & 5-8 Science and Technology – Students should develop abilities of technological design
- Content Standard in K-4 & 5-8 Science as Inquiry – Abilities necessary to do scientific inquiry, and Understanding about scientific inquiry.
- Content Standard in K-4 Earth and Space Science – Objects in the sky.