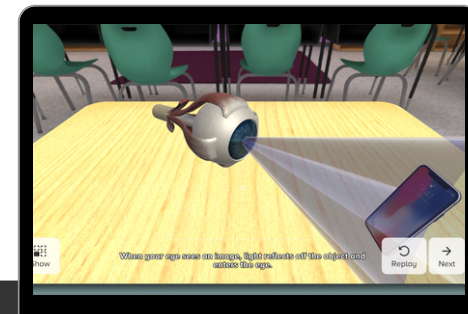
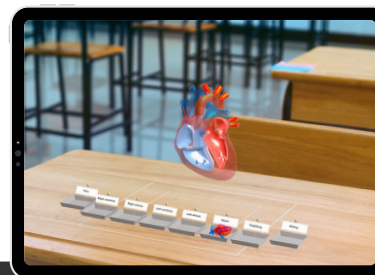


MCGRAW HILL AR ALIGNMENT TO TEXAS ESSENTIAL KNOWLEDGE AND SKILLS (TEKS) FOR SCIENCE



ACTIVITY	TEKS SCIENCE
Simple Machines	S.3.7.A: Demonstrate and describe forces acting on an object in contact or at a distance, including magnetism, gravity, and pushes and pulls S.3.7.B: Plan and conduct a descriptive investigation to demonstrate and explain how position and motion can be changed by pushing and pulling objects such as swings, balls & wagons. S.5.7.A: Investigate and explain how equal and unequal forces acting on an object cause patterns of motion and transfer of energy
Human Eye	S.3.8A Identify everyday examples of energy, including light, sound, thermal, and mechanical. S.5.8C Demonstrate and explain how light travels in a straight line and can be reflected, refracted, or absorbed. S.7.13A Identify and model the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, urinary, reproductive, integumentary, nervous, immune, and endocrine systems. BIO.12A Analyze the interactions that occur among systems that perform the function of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals. PHYS.8D Investigate behaviors of waves, including reflection, refraction, diffraction, interference, standing wave, the Doppler effect and polarization and superposition. PHYS.8G Describe and predict image formation as a consequence of reflection from a plane mirror and refraction through a thin convex lens. IPC.6F Construct and communicate an evidence-based explanation for how wave interference, reflection, and refraction are used in technology such as medicine, communication, and scientific research.
Photosynthesis	S.4.12A Investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter. S.4.13A Explore and explain how structures and functions of plants such as waxy leaves and deep roots enable them to survive in their environment. S.6.12A Investigate how organisms and populations in an ecosystem depend on and may compete for biotic factors such as food and abiotic factors such as availability of light and water, range of temperatures, or soil composition. S.7.12B Describe how ecosystems are sustained by the continuous flow of energy and the recycling of matter and nutrients within the biosphere. BIO.11A Explain how matter is conserved and energy is transferred during photosynthesis and cellular respiration using models, including the chemical equations for these processes. BIO.12B Explain how the interactions that occur among systems that perform functions of transport, reproduction, and response in plants are facilitated by their structures.
Glacier	S.4.10B Model and describe slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice. S.5.10C Model and identify how changes to Earth's surface by wind, water, or ice result in the formation of landforms, including deltas, canyons, and sand dunes. AQUA.11D Describe how erosion and deposition in river systems lead to formation of geologic features.
Big Dig	S.4.B.12.D: Identify fossils as evidence of past living organisms and environments, including common Texas fossils S.7.B.10.A: Describe the evidence that supports that Earth has changed over time, including fossil evidence, plate tectonics, and superposition
Bird Beak Bonanza	S.5.B.13.A: Analyze the structures and functions of different species to identify how organisms survive in the same environment S.4.B.13.A: Explore and explain how external structures and functions of animals such as the neck of a giraffe or webbed feet on a duck enable them to survive in their environment
Sonic Shapes	S.6.8.C: Explain how energy is transferred through transverse and longitudinal waves S.8.8.A: Compare the characteristics of amplitude, frequency and wavelength in transverse waves, including the electromagnetic spectrum

ACTIVITY	TEKS SCIENCE
Fibonacci Forest Quest	S.6.5.A/S.7.5.A: Identify and apply patterns to understand and connect scientific phenomena or to design solutions S.6.5.F/S.7.5.F: Analyze and explain the complementary relationship between the structure and function of objects, organisms, and systems; S.6.12.A: Investigate how organisms and populations in an ecosystem depend on and may compete for biotic factors such as food and abiotic factors such as availability of light and water, range of temperatures, or soil composition Math: M.A.12.C: Identify terms of arithmetic and geometric sequences when the sequences are given in function form using recursive processes M.A.12.C: Write a formula for the n term of arithmetic and geometric sequences, given the value of several of their terms
Circulatory System	S.7.13A Identify and model the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, urinary, reproductive, integumentary, nervous, immune, and endocrine systems. BIO.12A Analyze the interactions that occur among systems that perform the function of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals.
Respiratory System	S.7.13A Identify and model the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, urinary, reproductive, integumentary, nervous, immune, and endocrine systems. BIO.12A Analyze the interactions that occur among systems that perform the function of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals.
Seismic Shake	S.7.B.5.A: Identify and apply patterns to understand and connect scientific phenomena or to design solutions S.7.B.10.B: Describe how plate tectonics causes ocean basin formation, earthquakes, mountain building, and volcanic eruptions, including supervolcanoes and hot spots S.6.B.1.G: Develop and use models to represent phenomena, systems, processes, or solutions to engineering problems S.6.B.5.G: Analyze and explain how factors or conditions impact stability and change in objects, organisms, and systems
Tornado Factory	S.8.10.A: Describe how energy from the Sun, hydrosphere, and atmosphere interact and influence weather and climate.
Animal Cell Lab	S.8.B.13.A: Identify the function of the cell membrane, cell wall, nucleus, ribosomes, cytoplasm, mitochondria, chloroplasts, and vacuoles in plant or animal cells. S.6.B.13: Identify and compare the basic characteristics of organisms, including prokaryotic and eukaryotic, unicellular and multicellular, and autotrophic and heterotrophic
v8 Engine	S.7.8A Investigate methods of thermal energy transfer into and out of systems, including conduction, convection, and radiation. IPC.6C Plan and conduct an investigation to provide evidence that energy is conserved within a closed system. IPC.6D Investigate and demonstrate the movement of thermal energy through solids, liquids, and gases by convection, conduction, and radiation such as weather, living, and mechanical systems. PHYS.7C Apply the concept of conservation of energy using the work-energy theorem, energy diagrams, and energy transformation equations, including transformations between kinetic, potential, and thermal energy. CHEM.13A Explain everyday examples that illustrate the four laws of thermodynamics.
Periodic Table	CHEM.5.A: Explain the development of the Periodic Table over time using evidence such as chemical and physical properties. CHEM.5.B: Predict the properties of elements in chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals, based on valence electron patterns using the Periodic Table. CHEM.5.C: Analyze and interpret elemental data, including atomic radius, atomic mass, electronegativity, ionization energy, and reactivity to identify periodic trends. CHEM.6.A Construct models using Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, Bohr's nuclear atom, and Heisenberg's Uncertainty Principle to show the development of modern atomic theory over time. CHEM.6.B: Describe the structure of atoms and ions, including the masses, electrical charges, and locations of protons and neutrons in the nucleus and electrons in the electron cloud.

ACTIVITY	TEKS SCIENCE
Law of Reflection	IPC.6F Construct and communicate an evidence-based explanation for how wave interference, reflection, and refraction are used in technology such as medicine, communication, and scientific research. PHYS.8.D Investigate behaviors of waves, including reflection, refraction, diffraction, interference, standing wave, the Doppler effect and polarization and superposition.
Fireworks Factory	CHEM.5.B: Predict the properties of elements in chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals, based on valence electrons patterns using the Periodic Table CHEM.6.E: Construct models to express the arrangement of electrons in atoms of representative elements using electron configurations and Lewis dot structures.
Electric Escape	PHYS.6.B: Identify and describe examples of electric and magnetic forces and fields in everyday life such as generators, motors, and transformers. PHYS.6.D: Analyze, design, and construct series and parallel circuits using schematics and materials such as switches, wires, resistors, lightbulbs, batteries, voltmeters, and ammeters. PHYS.7.B: Investigate and calculate mechanical, kinetic, and potential energy of a system.

