

Middle School Science	Boardworks Middle School Presentations
<b>A. Know and apply concepts that explain how living things function, adapt and change.</b>	
12.A.3a Explain how cells function as “building blocks” of organisms and describe the requirements for cells to live.	Animal and Plant Cells Cells to Organisms
12.A.3b Compare characteristics of organisms produced from a single parent with those of organisms produced by two parents.	Types of Reproduction Causes of Variation
12.A.3c Compare and contrast how different forms and structures reflect different functions (e.g., similarities and differences among animals that fly, walk or swim; structures of plant cells and animal cells).	Adaptations Animal and Plant Cells Cells to Organisms Leaves and Glucose
<b>B. Know and apply concepts that describe how living things interact with each other and with their environment.</b>	
12.B.3a Identify and classify biotic and abiotic factors in an environment that affect population density, habitat and placement of organisms in an energy pyramid.	Competition Habitats Feeding Types Pyramid of Numbers and Biomass
12.B.3b Compare and assess features of organisms for their adaptive, competitive and survival potential (e.g., appendages, reproductive rates, camouflage, defensive structures).	Adaptations Competition
<b>C. Know and apply concepts that describe properties of matter and energy and the interactions between them.</b>	
12.C.3a Explain interactions of energy with matter including changes of state and conservation of mass and energy.	Changes of Matter Changing State Conservation of Mass What is Energy?
12.C.3b Model and describe the chemical and physical characteristics of matter (e.g., atoms, molecules, elements, compounds, mixtures).	What are Atoms? Atomic Structure Elements and Compounds What is a Mixture? Solutions

<b>D. Know and apply concepts that describe force and motion and the principles that explain them.</b>	
12.D.3a Explain and demonstrate how forces affect motion (e.g., action/reaction, equilibrium conditions, free-falling objects).	What are Forces? Calculating Resultant Force
12.D.3b Explain the factors that affect the gravitational forces on objects (e.g., changes in mass, distance).	Gravity
<b>E. Know and apply concepts that describe the features and processes of the Earth and its resources.</b>	
12.E.3a Analyze and explain large-scale dynamic forces, events and processes that affect the Earth's land, water and atmospheric systems (e.g., jetstream, hurricanes, plate tectonics).	What is Plate Tectonics? Wind and Ocean Currents Hurricanes
12.E.3b Describe interactions between solid earth, oceans, atmosphere and organisms that have resulted in ongoing changes of Earth (e.g., erosion, El Nino).	Erosion, Transportation and Deposition Sedimentary Rocks The Rock Cycle Biological Weathering Chemical Weathering Physical Weathering Plate Boundaries What is Plate Tectonics?
12.E.3c Evaluate the biodegradability of renewable and nonrenewable natural resources.	Renewable Energy Nonrenewable Energy Resources
<b>F. Know and apply concepts that explain the composition and structure of the universe and Earth's place in it.</b>	
12.F.3a Simulate, analyze and explain the effects of gravitational force in the solar system (e.g., orbital shape and speed, tides, spherical shape of the planets and moons).	Gravity The Solar System
12.F.3b Describe the organization and physical characteristics of the solar system (e.g., sun, planets, satellites, asteroids, comets).	The Solar System
12.F.3c Compare and contrast the sun as a star with other objects in the Milky Way Galaxy (e.g., nebulae, dust clouds, stars, black holes).	–