

Science: Grade 8 Advanced

UNIT/Weeks	Timeline/Topics	Essential Questions
5	<p><u>Astronomy</u></p> <ul style="list-style-type: none"> • The Universe and its Stars • Earth and the Solar System • Earth's History 	<ul style="list-style-type: none"> • What is the role of gravity in the motions within galaxies and the solar system? • What are the scale properties of objects in the solar system?
5	<p><u>Earth Systems</u></p> <ul style="list-style-type: none"> • Geologic Time Scale • Geoscience Processes • Tectonic Processes 	<ul style="list-style-type: none"> • If no one was there, how do we know the Earth's history? • What provides the forces that drive Earth's systems?
4	<p><u>Stability and Change</u></p> <ul style="list-style-type: none"> • Natural Resources • Natural Hazards • Human Impact 	<ul style="list-style-type: none"> • How do we monitor the health of the environment (our life support system)? • Is it possible to predict and protect ourselves from natural hazards?
4	<p><u>Body Systems</u></p> <ul style="list-style-type: none"> • Body Systems • Sense Receptors • Neurotransmitters 	<ul style="list-style-type: none"> • What are humans made of? • What is the evidence that a body is actually a system of interacting subsystems composed of groups of interacting cells? • How do organisms receive and respond to information from their environment?
4	<p><u>Relationships Among Forms of Energy</u></p> <ul style="list-style-type: none"> • Kinetic Energy • Potential Energy • Energy Transfer 	<ul style="list-style-type: none"> • How can physics explain sports?
4	<p><u>Thermal Energy</u></p> <ul style="list-style-type: none"> • Temperature • Total Energy of a System 	<ul style="list-style-type: none"> • How can a standard thermometer be used to tell you how particles are behaving?

4	<p><u>Electromagnetic Spectrum</u></p> <ul style="list-style-type: none"> • Simple Waves • Light and Sound Waves • Wave-Related Technologies 	<ul style="list-style-type: none"> • How do cell phones work?
1	<p><u>Green Education: Water Quality</u></p> <ul style="list-style-type: none"> • Water Quality and the Effects on the Environment 	<ul style="list-style-type: none"> • What determines water quality? • Are there environmental factors that change the quality of water?
1	<p><u>Green Education: Bike Psych</u></p> <ul style="list-style-type: none"> • Bikes as Transportation 	<ul style="list-style-type: none"> • How do our choices in transportation effect our communities and world?
1	<p><u>Green Education: Green Sleuth</u></p> <ul style="list-style-type: none"> • Investigative Audit 	<ul style="list-style-type: none"> • What is the "eco-footprint" of your school? • What can your school do to reduce waste, recycle more and save energy?
2	<p><u>Nature of Science: Scientific Explanations</u></p> <ul style="list-style-type: none"> • Understanding Science • Measurement and Scientific Tools • Case Study 	<ul style="list-style-type: none"> • How do scientists determine decisions regarding our environment?