Advanced Science: Grade 4

UNIT/Weeks	Timeline/Topics	Essential Questions
1	**Structures and Functions of Living Things** • Structures and Functions of Plants • Structures and Functions of Animals • Information Processing in Animals • The Role of Animals' Eyes	• How do plant structures help them survive and reproduce? • How do animal structures help them survive? • How do animals sense and respond to information? • How do animals see?
2	**Energy and Motion** • Energy and Speed • Energy Change in Collisions	• How are energy and speed related? • What happens when objects collide?
3	**Transfer of Energy** • Types of Energy Transfer • Transfer of Energy by Electricity • Transfer of Energy by Light • Design Energy Solutions	• How is energy transferred? • How do the electric currents transfer energy? • How does light transfer energy? • What kinds of problems can be solved by understanding energy transfer?
4	**Wave Patterns and Information Transfer** • How Waves Move • How Waves Transmit Information	• How do waves travel? • How do we use patterns and waves to transmit information?
5	**Energy from Natural Resources** • Energy from Nonrenewable Resources • Energy from Renewable Resources	• What are the benefits and drawbacks of renewable and nonrenewable resources? • How are renewable resources used as energy?

		• How do variations in traits provide advantages for survival?
6	**Patterns of Earth's Changing Features** • Earth's Landforms and Features • Effects of Erosion • History of Earth's Surface	• What are Earth's features? • How do living and nonliving things change Earth's surface? • What can rock formations tell us about Earth's history?
7	**Natural Hazards** • Earthquakes and Volcanoes • Tsunamis and Floods	• How are people affected by earthquakes and volcanoes? • How can people prepare for floods?
	GEF Energy Conservation and Efficiency • Energy Conservation • Energy Efficiency • Changing Waste to Energy	• What is energy conservation? • What are some ways we can conserve energy? • How we can be energy efficient? • How can we turn waste into energy?