

Curriculum Map

	Content and Essential Questions	Skills: Students will...	Assessment	Materials/Technology Resources
	<p>Electricity (PS 6, 7)</p> <ul style="list-style-type: none"> • How is electricity a form of energy? • What is electricity? • How are the electrons part of an atom? • Can electricity be transferred into other forms of energy? • What is a conductor, insulator, and a circuit? • How are series circuits different from parallel circuits? 	<ul style="list-style-type: none"> • define energy as the ability to do work or cause change • learn that electricity is a flow of electrons • understand that electrons are part of the atom that move from atom to atom as electricity • explore how electricity can be transferred into light, heat, and sound energy • investigate that conductors carry electricity and insulators don't carry electricity • discover that a circuit is a complete path or loop that electricity follows in order to do work • learn how series circuits and parallel circuits are built and tested 	<ul style="list-style-type: none"> • give examples of ways that electric energy does work • diagram a basic atom to show electrons • describe ways that electrical energy is transferred to light, heat and sound energy • demonstrate and explain the difference between conductor and insulators • build a circuit to verify that a complete path is needed for electricity to do work • build series and parallel and series circuits and demonstrate how each provides a different path of electrons • pose questions based on the topic • show and communicate in both verbal and written form results of their work 	<ul style="list-style-type: none"> • a variety of known insulators and conductors • batteries, bulbs, wires, switches for building circuits • model of the atom

	Content and Essential Questions	Skills: Students will...	Assessment	Materials/Technology Resources
	<p>What is an electromagnet? PS 8</p> <ul style="list-style-type: none"> • What is magnetism? • How is an electromagnet built from a steel bolt, insulated wire and a battery? • Does the way you build the electromagnet vary its force of attraction? • What are electromagnets used for? 	<ul style="list-style-type: none"> • magnetism is the force of attraction of one object to another which are made of iron, nickel or cobalt • review how a complete circuit is needed for electric energy to do work • learn that an electric current produces a magnetic field • explore how electromagnets have an iron core (bolt) with insulated wire wrapped around it many times.\ and attached to a battery • investigate how battery power and number of wrappings of wire change the force of attraction of the EM • explore uses for electromagnet 	<ul style="list-style-type: none"> • demonstrate that magnetism is the force of attraction between materials made of iron, nickel or cobalt • draw and build an electromagnet and demonstrate its force of attraction • show how the number of wrappings of the wire and battery power changes the force of attraction of the EM • explain different uses for electromagnets. 	<ul style="list-style-type: none"> • wire, bolts, batteries and objects to pick up •
	<p>Magnetism PS 9, 10</p> <ul style="list-style-type: none"> • What is a permanent magnet? • Are any earth materials magnets? • What is a domain? • What kinds of materials will permanent magnets attract? • What is attraction and repulsion of magnets? • How do you measure the strength of a magnet? • What are some uses of permanent magnets? <p>http://www.ndt-ed.org/EducationResources/HighSchool/Magnetism/magnetismintro.htm</p>	<ul style="list-style-type: none"> • learn that a permanent magnet is magnetic on its own • learn about magnetite as a naturally occurring magnetic mineral and probably the first material for compasses • learn that a domain is the area of magnetic force around a magnet due to the alignment of the atoms within the magnet • experiment with different materials to test if they are magnetic or not and record your findings • explore how magnets attract and repel other magnets based on their position • experiment to find the strength of a magnet • research uses for permanent magnets 	<ul style="list-style-type: none"> • explain the difference between permanent and electromagnets • explain how the mineral magnetite was the first magnetic material discovered • draw a diagram to explain domains in a magnet • show results of testing materials as to being magnetic or not • demonstrate attraction and repulsion of magnets due to their position • explain and communicate the procedure for determining the strength of a magnet • describe uses of permanent magnets in everyday use 	<ul style="list-style-type: none"> • magnets • magnetic and not magnetic materials • drawing paper for diagrams

