

MARLBORO CENTRAL SCHOOL DISTRICT-CURRICULUM MAP

Subject: Physical Setting

Grade 4

Title or Topics (Unit organizing idea)	Science Concepts (Inquiry Question)	Skills (What students actually do)	Content (nouns and noun phrases)	Science Skills	Literacy Connections	Major Assessments (Tests, projects, etc.)	Time Frame (Number of weeks)
<p>Forces and Motion/ Simple Machines</p>	<ol style="list-style-type: none"> How do forces affect motion? How does energy affect motion? How are work and motion related? 	<ol style="list-style-type: none"> Use graphic aids such as charts & diagrams Identify & apply the definition of new words Explore changes in motion Explore & compare weights of different objects Determine what makes things move Discover how friction affects motion Develop an understanding of how gravity affects motion Investigate how air can be used to reduce friction Develop an understanding of what potential & kinetic energy are Explore other forms of energy that affect motion Investigate how energy can change from kinetic to potential & back again Develop an understanding of work Identify parts & functions of simple machines Explore how simple machines affect motion Discover what compound & complex machines are Construct & experiment with simple machines Textbook writing options: 	<ol style="list-style-type: none"> What students need to know: <ul style="list-style-type: none"> - force (push & pull) (5.1b) - Gravity (5.1c) - Inertia (5.1b) - Friction (5.1d) Work Energy <ul style="list-style-type: none"> - *Potential - *Kinetic - *Mechanical (5.1f) - *Electrical Simple Machines (5.1a-5.1c) <ul style="list-style-type: none"> - *Inclined Planes - *Pulley - *Lever - *Screw - *Wedge Compound Machine (5.1f) Complex Machine 	<ol style="list-style-type: none"> Identify and apply the definition of new unit words. Conduct experiments to determine what makes things move (force). Observe how mass as an affect on the gravitational pull of an object and relates to amount of work needed to move the object. Explore the change in motion (Inertia). Experiment with objects to discover how friction affects motion. Describe how friction and force affects the motion of an object. Experiment and determine how things move. Collect data and record observations from experiments accurately and concisely to determine relationships (see inquiry questions). Explore the how different forms of energy affect motion. Explore how simple machines affect motion State how and why 	<p>For media materials:</p> <ol style="list-style-type: none"> www.marlboroschools.org Select your school Go to “Library” tab Select “Search Library Catalog” icon Follow the direction <p>For videos:</p> <ol style="list-style-type: none"> www.marlboroschools.org Select “Tools” tab Select “United Streaming Video Connection Username & Password are the same as your school email Put keyword in the Search bar 	<p>Test, quizzes (identify parts and functions of simple machine, match forms of energy their effects on motion)</p> <p>Labs to test simple machines, functions, and test hypothesis and process skills (B55)</p> <p>Build a simple machine using the Connects Kit</p> <p>Student to demonstrate how to use a ramp(inclined plane) and measure distance changes with relation to friction, force, velocity and motion</p> <p>Keep a Forces and Motion Journal to address inquiry questions and skills 1-11.</p> <p>Utilize unit</p>	<p>4 weeks</p>

		narrative (B38, B43, B49) Expository (B53) 18. Complete various lab experiments		simple machines affect the amount of work needed to move an object. 12. Explore how mechanical energy may cause change in motion through the use of simple machines such as pulleys, levers, and inclines planes. 13. Conduct experiments using simple machines to gather data to explore the relationships between unit concepts. 14 Classify simple, compound, or complex machines by providing an explanation in writing or orally to show their understandings of unit concepts.		questions and vocabulary in the response journal.	
Electricity & Magnetism	<ol style="list-style-type: none"> 1. What is an electric current? 2. How do electric circuits work? 3. What is magnetism? 4. How do electricity & magnetism work together? 	<ol style="list-style-type: none"> 1. Explore the effects of electrical charges on matter 2. Use graphic aids such as charts & diagrams 3. discover how objects get an electrical charge 4. Develop an understanding of how electric current flows 5. Develop an understanding of different types of circuits 6. Construct series & parallel circuits 7. Predict outcomes of circuits 8. Construct & observe effects of short circuits 9. Investigate the path of electricity in a series, parallel, & short circuit 10. Develop an understanding of how to use electricity safely 11. Investigate how magnets act 	<ol style="list-style-type: none"> 1. Electric current/electric charge (4.1) 2. Circuits (open/closed) (4.1) 3. Parallel, series, & resistance (4.1) 4. Safety (4.1) 5. Terminals (side/base) insulators, filament 6. Batteries, bulbs, wires, switch, bulb holder, fahnstock clip (4.1) 7. Positive & negative terminal (4.1) 8. Symbols 9. Conductors & insulators 10.magnetism (5.1) 11.magnets (repel/attract) (5.1) 12.magnetic field (5.1) 13.Poles (north & south) 	<ol style="list-style-type: none"> 1. Observe & describe electric charges on matter 2. Construct different types of circuits. 3. -- 4. Identify paths of electric current. 5. Discuss ways to be safe. List safety procedures and practices. 6. Locate and identify parts of the bulb. 7. Use materials to construct circuits 8. Identify symbols of electrical circuits 9. Predict and record examples 			

		<p>12. Develop an understanding that the earth is like a magnet</p> <p>13. investigate how to make an electromagnet & how electricity is related to magnetism</p> <p>14. Discover how a magnet can make electricity</p> <p>15. Explore how electricity can make a magnet</p> <p>16. Explore uses of electromagnets</p> <p>17. Identify & apply the definition of new words</p> <p>18. Textbook writing options – expository (B65, B69) narrative (B76, B81)</p>	<p>(5.1)</p> <p>14. Electromagnet (5.2b)</p> <p>15. Magnets → electricity (5.1)</p>	<p>of conductors/non-conductors</p> <p>10. Observe magnetism and how it acts</p> <p>11. Explore and investigate how and what magnets repel and attract and why?</p> <p>12.--</p> <p>13.--</p> <p>14. Create an electromagnet</p> <p>15. Articulate how magnets & electricity work together</p>			
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