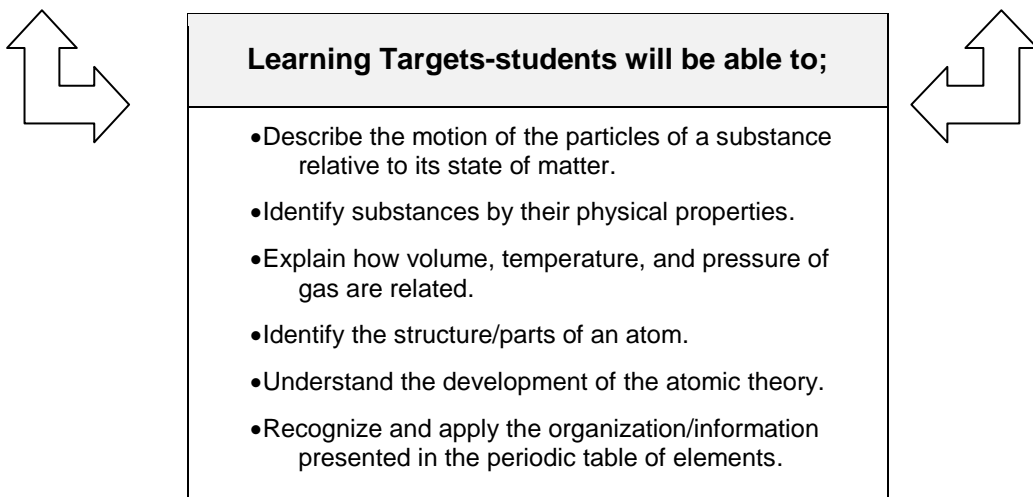
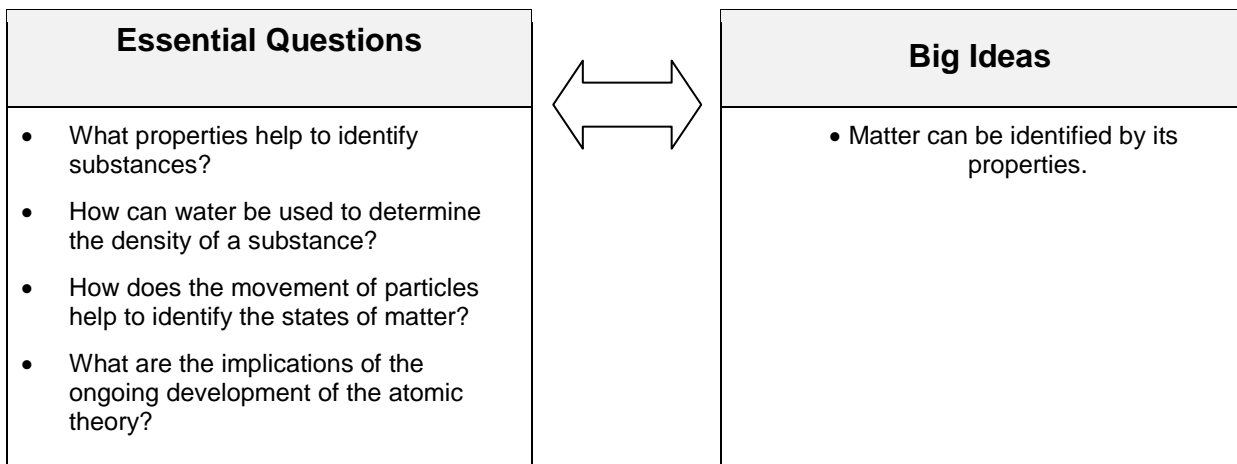


8th Grade Science

Unit Title	8.1 Properties of Matter
Time frame	6.5 weeks
21 st Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration Productivity and Accountability Leadership and Responsibility
Interdisciplinary focus and technology integration	Technology Math Social Studies



Assessment	
Rubrics	Teacher-Created Assessment
Lab Reports	Classroom Participation
Homework	
Completion	Group Participation
Differentiation	
Hands-on Activities Diagnostic Assessment Kinaesthetic Re-teaching Enrichment Activities Cooperative Learning Peer Tutoring Tiered Instruction Alternative Assessment	
Content Standards	
5.1 5.2.6A.1-3 5.2.8.A.1-7	
Approaches to Learning	
<u>Observation skills</u> - observing and communicating data in a lab report <u>Analyzing skills</u> – recognizing relationships <u>Evaluation skills</u> - developing criteria for judging their own work <u>Scientific Inquiry Skills</u> – formulate questions, hypothesize and conduct experiments <u>Inquiry skills</u> – formulate questions, hypothesize and conduct experiments	
Learning Experiences	Teaching Strategies
“Messing With Mixtures” lab “States of Matter Cartoon”	<ul style="list-style-type: none"> •Evaluation of lab reports, rubrics to assess writing, written assessment. •Peer/group discussion, lecture, board work, evaluations, discussion of lab work, use of technology. •Utilization of key terms.
Resources	
Prentice Hall Science Explorer: Physical Science, 2009	

8th Grade Science

Unit Title	8. 2 Chemistry in Action
Time frame	6.5 weeks
21 st Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration Productivity and Accountability Leadership and Responsibility
Interdisciplinary focus and technology integration	Technology Math

Essential Questions	↔	Big Ideas
<ul style="list-style-type: none"> • How does conservation of mass apply to the interaction of materials? • What are the observable characteristics that a chemical reaction has occurred? • What two kinds of energy change can occur during a chemical reaction? • What does a chemical equation tell you? • What is the difference between an ionic bond and a covalent bond? 	↔	<ul style="list-style-type: none"> • Chemical reactions occur based on the structure of an atom. • The production of a new substance shows that a chemical reaction has occurred.

Learning Targets-students will be able to;

- Explain that the production of new substances having different properties shows that chemical reaction has occurred.
- Compare exothermic and endothermic reactions.
- Identify and describe three categories of chemical reactions.
- Apply the principle of conservation of mass to chemical reactions.
- Apply the learned knowledge about chemical reactions to write balanced equations.
- Compare and contrast physical properties of reactants with products after a chemical reaction.
- Determine the properties and relative strength of everyday acids and bases.
- Define and compare solutions, suspensions and colloids.

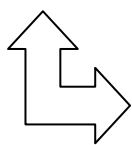
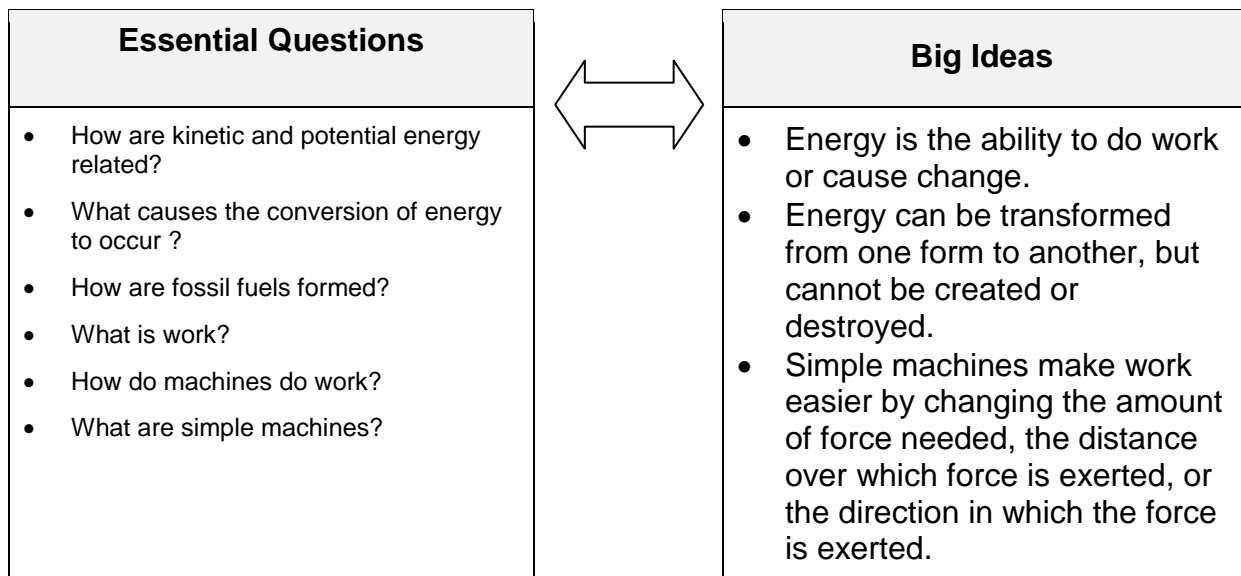
Assessment	
Rubrics	Teacher-created Assessment
Lab Reports	Classroom Participation
Homework Completion	Group Participation
Differentiation	
Hands-on Activities Diagnostic Assessment Kinaesthetic Re-teaching Enrichment Activities Cooperative Learning Peer Tutoring Tiered Instruction Alternative Assessment	
Content Standards	
5.1 5.2.6A.1 5.2.6A.2 5.2.6A.3 5.2.8.A.1 5.2.8.A.2 5.2.8.A.3 5.2.8.A.4 5.2.8.A.5 5.2.8.A.6 5.2.8.A.7	
Approaches to Learning	
<u>Observation skills</u> - observing and communicating data in a lab report <u>Analyzing skills</u> – recognizing relationships <u>Evaluation skills</u> - developing criteria for judging their own work <u>Scientific Inquiry Skills</u> – formulate questions, hypothesize and conduct experiments <u>Inquiry skills</u> – formulate questions, hypothesize and conduct experiments	
Learning Experiences	Teaching Strategies
To be added by teacher	<ul style="list-style-type: none"> Evaluation of lab reports, rubrics to assess writing, written assessment Peer/group discussion, lecture, board work, evaluations, discussion of lab work, use of technology Utilization of key terms

Resources

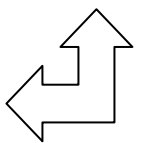
Prentice Hall Science Explorer: Physical Science, 2009

8th Grade Science

Unit Title	8.3 Energy
Time frame	6 weeks
21 st Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration Productivity and Accountability Leadership and Responsibility
Interdisciplinary focus and technology integration	Technology Math



Learning Targets-students will be able to;
<ul style="list-style-type: none"> • Give an operational definition for force and motion and summarize their relationship. • Apply the formulas used to calculate acceleration and momentum. • Identify and describe Newton's Laws of Motion. • Describe the motion of an object from various vantage points. • Demonstrate and explain the frictional force acting on an object with the use of a physical model. • Calculate speed of an object when given distance and time. • Compare the motion of an object acted on by balanced forces with the motion of an object acted on by an unbalanced force in a given specific scenario.



Assessment	
Rubrics Lab Reports Homework Completion	Teacher-created Assessment Classroom Participation Group Participation
Differentiation	
Hands-on Activities Diagnostic Assessment Kinaesthetic Re-teaching Enrichment Activities Cooperative Learning Peer Tutoring Tiered Instruction Alternative Assessment	
Content Standards	
5.2.6.C.1 5.2.6.C.2 5.2.6.C.3 5.2.8.C.1 5.2.8.C.2 5.1	
Approaches to Learning	
<u>Observation skills</u> - observing and communicating data in a lab report <u>Analyzing skills</u> – recognizing relationships <u>Evaluation skills</u> - developing criteria for judging their own work <u>Scientific Inquiry Skills</u> – formulate questions, hypothesize and conduct experiments <u>Inquiry skills</u> – formulate questions, hypothesize and conduct experiments	
Learning Experiences	Teaching Strategies
<ul style="list-style-type: none"> •“Bubble Gum Physics Lab” •Investigate each law of motion by completing a series of tasks <ul style="list-style-type: none"> • Inclined to Roll Lab • Stopping on a Dime Lab • Motion Graph Activity • Cup, Paper, and Coin Activity • Sticky Sneakers Lab • Aluminum Foil Boats • Paper Airplane Contest 	<ul style="list-style-type: none"> •Evaluation of lab reports, rubrics to assess writing, written assessment •Peer/group discussion, lecture, board work, evaluations, discussion of lab work, use of technology •Utilization of key terms

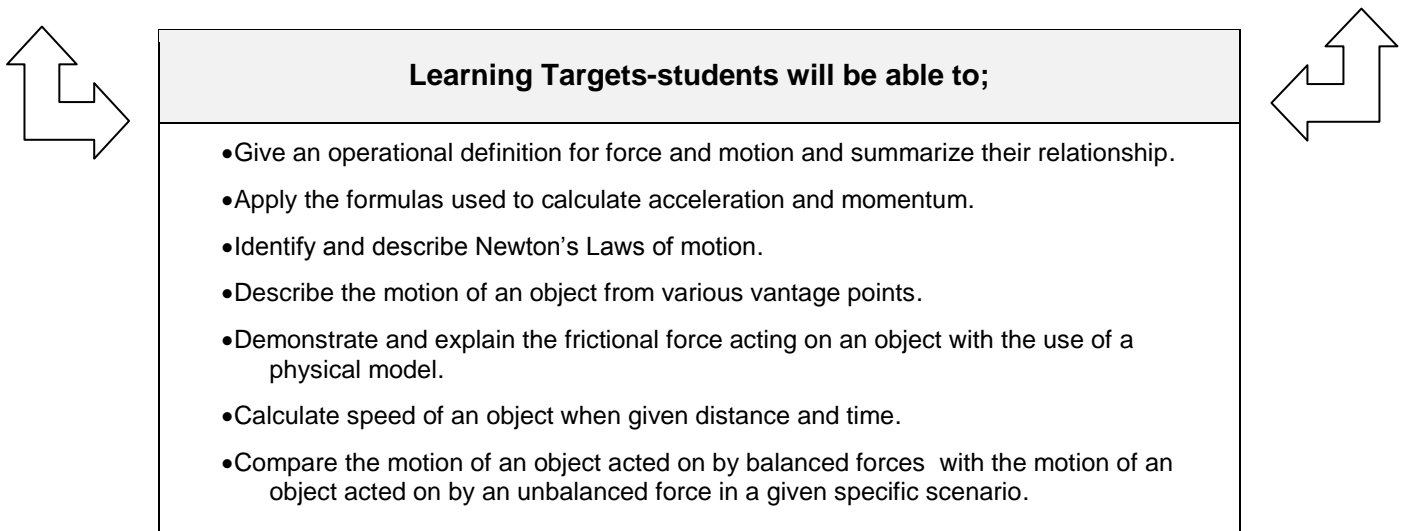
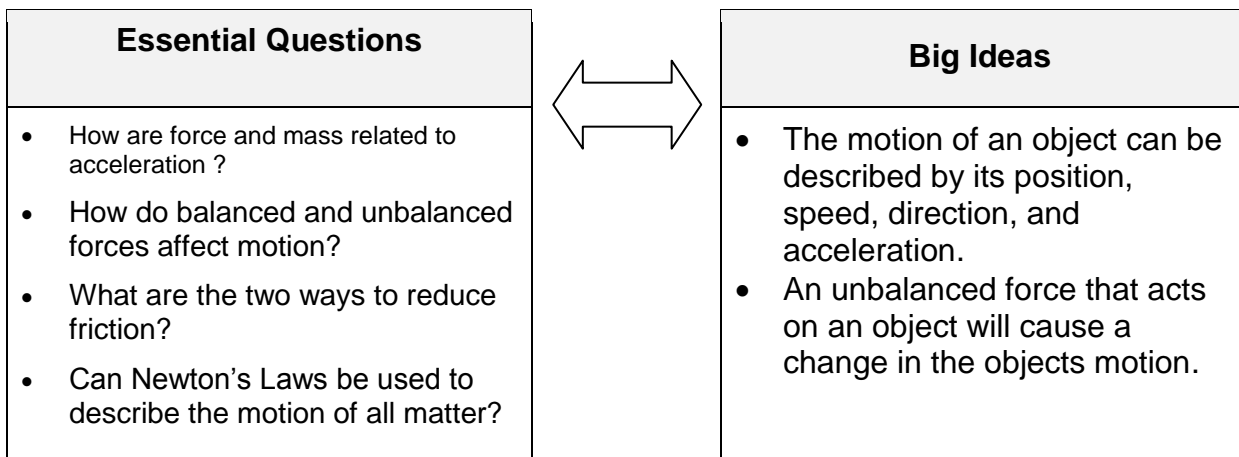
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| <ul style="list-style-type: none">• Egg Drop• Marshmallow Catapult | |
|-------------------------------------------------------------------------------------------|--|

Resources

Prentice Hall Science Explorer: Physical Science

8th Grade Science

Unit Title	8.4 Force and Motion
Time frame	6 weeks
21 st Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration Productivity and Accountability Leadership and Responsibility
Interdisciplinary focus and technology integration	Technology Math



Assessment

Rubrics	Teacher-created Assessment
Lab Reports	Classroom Participation
Homework completion	Group Participation

Differentiation

Hands-on Activities
Diagnostic Assessment
Kinaesthetic
Re-teaching
Enrichment Activities
Cooperative Learning
Peer Tutoring
Tiered Instruction
Alternative Assessment

Content Standards

What state content standards are to be addressed?

5.2.6.C.1
5.2.6.C.2
5.2.6.C.3
5.2.8.C.1
5.2.8.C.2
5.1

Approaches to Learning

Observation skills- observing and communicating data in a lab report

Analyzing skills – recognizing relationships

Evaluation skills- developing criteria for judging their own work

Scientific Inquiry Skills – formulate questions, hypothesize and conduct experiments

Inquiry skills – formulate questions, hypothesize and conduct experiments

Learning Experiences

- “Bubble Gum Physics Lab”
- Investigate each law of motion by completing a series of tasks
- Inclined to Roll Lab
- Stopping on a Dime Lab
- Motion Graph Activity
- Cup, Paper, and Coin Activity

Teaching Strategies

- Evaluation of lab reports, rubrics to assess writing, written assessment
- Peer/group discussion, lecture, board work, evaluations, discussion of lab work, use of technology
- Utilization of key terms

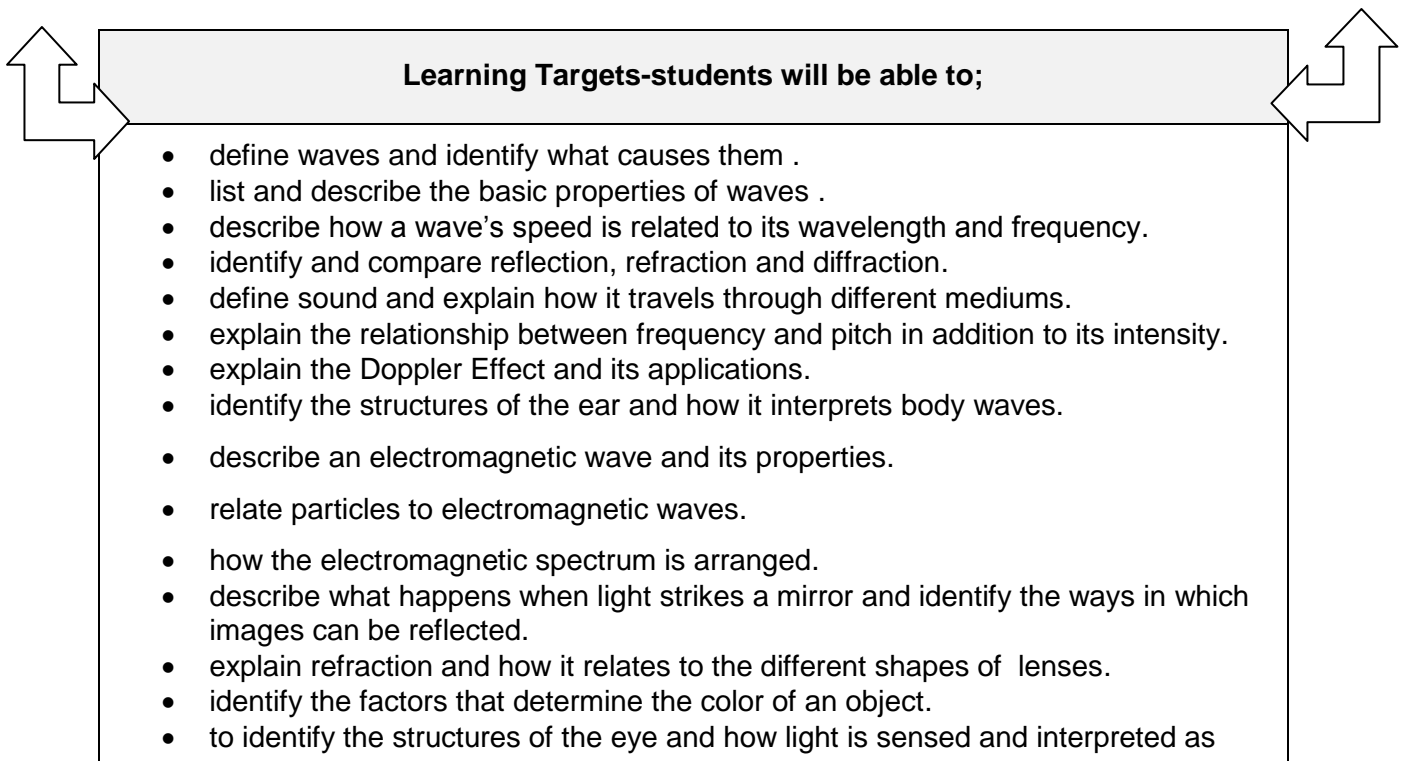
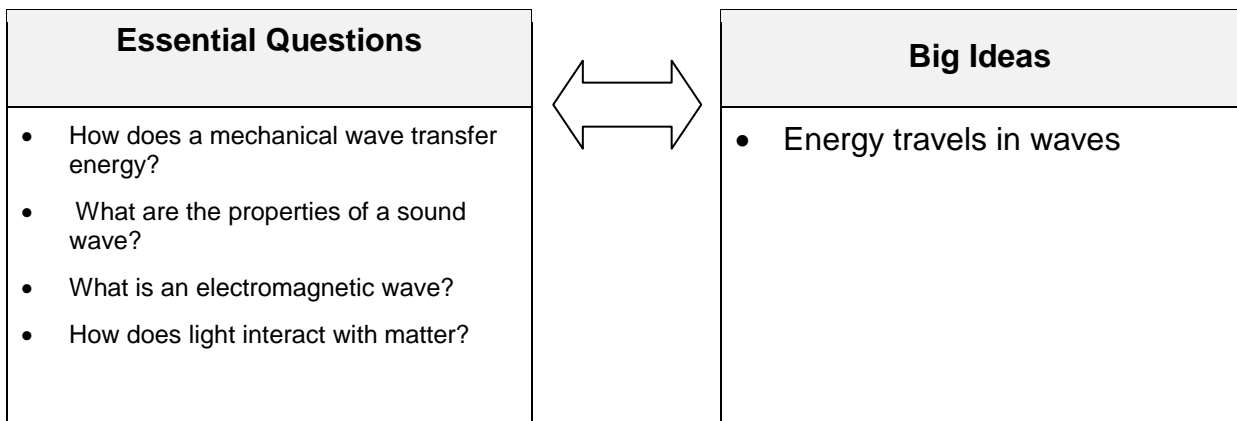
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| <ul style="list-style-type: none">• Sticky Sneakers Lab• Aluminum Foil Boats• Paper Airplane Contest• Egg Drop• Marshmallow Catapult | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

<p>Resources</p>

<p>Prentice Hall Science Explorer: Physical Science, 2009</p>

8th Grade Science

Unit Title	8.5 Sound and Light
Time frame	6.5 weeks
21 st Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration Productivity and Accountability Leadership and Responsibility
Interdisciplinary focus and technology integration	Technology History Math Language Arts Art



- images.
- Identify different instruments using lenses and fiber optics.

Assessment

Rubrics	Teacher-created Assessment
Lab Reports	Classroom Participation
Homework Completion	Group Participation
Diagramming and identifying different wave patterns	

Differentiation

Hands-on Activities
 Diagnostic Assessment
 Kinaesthetic
 Re-teaching
 Enrichment Activities
 Cooperative Learning
 Peer Tutoring
 Tiered Instruction
 Alternative Assessment

Content Standards

5.2.6.C.1
 5.2.6.C.2
 5.2.6.C.3
 5.2.8.C.1
 5.2.8.C.2
 5.1

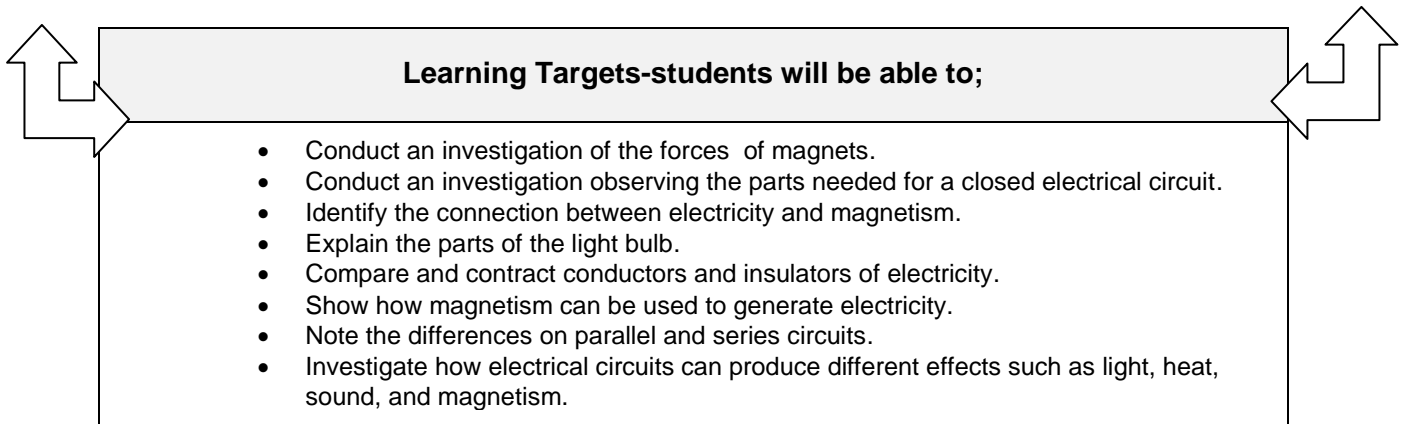
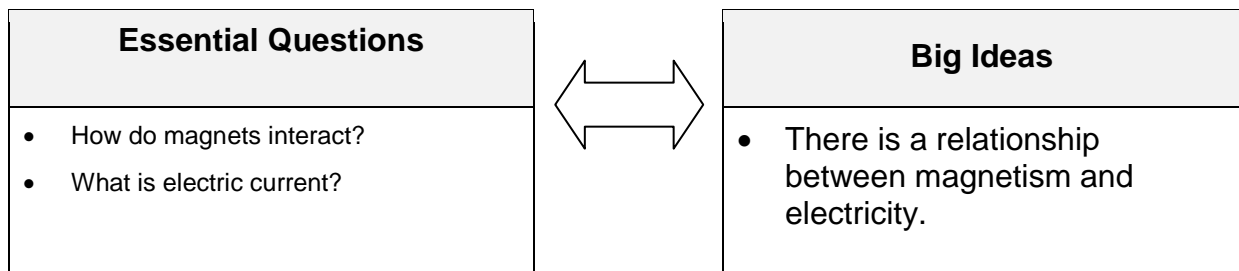
Approaches to Learning

Observation skills- observing and communicating data in a lab report
Analyzing skills – recognizing relationships
Evaluation skills- developing criteria for judging their own work
Scientific Inquiry Skills – formulate questions, hypothesize and conduct experiments
Inquiry skills – formulate questions, hypothesize and conduct experiments

Learning Experiences	Teaching Strategies
<p>“Wavy Motions” “How do waves travel” “Changing Colors” “ In the Heat of the Light” “Can you see everything with one eye?” “Working with lenses and refraction”</p>	<ul style="list-style-type: none"> •Evaluation of lab reports, rubrics to assess writing, written assessment •Peer/group discussion, lecture, board work, evaluations, discussion of lab work, use of technology •Utilization of key terms
<p>Resources Prentice Hall Science Explorer: Physical Science</p>	

8th Grade Science

Unit Title	8.6 Electricity and Magnetism
Time frame	6 weeks
21 st Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration Productivity and Accountability Leadership and Responsibility
Interdisciplinary focus and technology integration	Technology History Math Language Arts Art



Assessment	
Rubrics	Teacher-created Assessment
Lab Reports	Classroom Participation
Homework Completion	Group Participation
Differentiation	
Hands-on Activities Diagnostic Assessment	

Kinaesthetic
 Re-teaching
 Enrichment Activities
 Cooperative Learning
 Peer Tutoring
 Tiered Instruction
 Alternative Assessment

Content Standards

5.2.6.D.1
 5.2.8.D.1
 5.2.8.D.2
 5.1

Approaches to Learning

Observation skills- observing and communicating data in a lab report
Analyzing skills – recognizing relationships
Evaluation skills- developing criteria for judging their own work
Scientific Inquiry Skills – formulate questions, hypothesize and conduct experiments
Inquiry skills – formulate questions, hypothesize, and conduct experiments

Learning Experiences

- Compare/Contrast graphic organizers for conductors and insulators
- Compare/Contrast graphic organizers for bar magnets and electromagnets
- Step by step instructions about how to
- construct an electric circuit
- Students will illustrate a series and parallel circuit
- Skills Lab: “Detecting Fake Coins” p 660
- Technology: “Design and Build a Magnetic Paper Clip Holder” pg 668
- Make electricity using a penny
- Skills Lab: “Building an Electric Motor” p 734

Teaching Strategies

- Evaluation of lab reports, rubrics to assess writing, written assessment
- Peer/group discussion, lecture, board work, evaluations, discussion of lab work, use of technology
- Utilization of key terms

Resources

Prentice Hall Science Explorer: Physical Science

