Science Planned Course: Grade 6

Unit: **The Nature of Science and Technology**

Content Standard: **Utilize the scientific method to solve problems.**

State Curriculum Standard: **(3.2.4 C) Utilize the elements of scientific inquiry to solve problems.**
(3.2.7 B) Apply process knowledge to make and interpret observations.

Course Content	Student Performance	Resources	Assessments
A. Identify skills scientists use to learn about the world.	A. Discover Activity, p.6 • Build Inquiry, p.10 • At-Home Activity, p. 12	A. Textbook: The Nature of Science and Technology, (Prentice Hall copyright 2005) • Review and Reinforcement Guide (R/R) p. 52 • Lab zone Easy Planner	• Homework check • Quiz
B. Explain what scientific inquiry involves.	B. Discover Activity, p. 13 • Skills Activity, p.14	B. Lab zone Easy Planner	• Homework
C. Describe how to develop a hypothesis and design an experiment.	C. Video Field Trip • Writing: write 3 scientific questions about weather and then develop a hypothesis. • Skills Activity, p.16 • Try This Activity, p.19	C. Discovery Channel School • Lab zone Easy Planner • Transparency P2	• Oral presentation • Lab report
D. Differentiate between a scientific theory and a scientific law.	D. Cooperative group discussion on definition on scientific lay and how it differs from the common meaning.	D. Review and Reinforcement Guide (R/R) p. 77	• Oral responses • worksheet

Science Planned Course: Grade 6

Unit: **The Nature of Science and Technology**

Content Standard: **Utilize the elements of scientific inquiry to solve problems.**

State Curriculum Standard: **(3.2.4 A) Identify the nature of scientific and technological knowledge.**

Course Content	Student Performance	Resources	Assessments
E. Explain why people need to understand scientific principles.	E. Discover Activity, p.24 • Writing: write a short story that demonstrates that knowing how something works could be beneficial • Skills Activity, p.26	E. Lab zone Easy Planner	• portfolio • Homework
F. Explain what scientific literacy is and why it's important	F. Build Inquiry, p.28 • Writing in Science, p.29	F. Lab zone Easy Planner • R/R, p.70	• Oral presentation
G. List the three main branches of science	G. Research the careers associated with each branch • Make a brochure for each Branch • Discover Activity, p.30	G. Library research • R/R, p. 77	• portfolio • research report • quiz • chapter test

Science Planned Course: Grade 6

Unit: **The Nature of Science and Technology**

Content Standard: **Identify and use units of metric measurement to solve problems**

State Curriculum Standard: **(3.7.4 B) Select appropriate instruments to study materials.**

Course Content	Student Performance	Resources	Assessments
A. Explain why scientists use a standard measurement system.	A. Discover Activity, p. 44 • Video Field Trip: The Work of Scientists	A. Lab zone Easy Planner • Discovery Channel School • Transparency, p.8	• Homework check • Quiz
B. Identify the SI units of measure for length, mass, volume, density, time, and temperature.	B. Build Inquiry, p.46 • Writing in Science, p. 47 • Skills Activity, p. 49 • Build Inquiry, p.51 • Math Practice, p. 52	B. Library Research • Lab zone Easy Planner • Transparency, p.9-12 • R/R, p. 119	• Research report
C. Describe what math skills scientists use in collecting data and making measurements.	C. Discover Activity, p.60 • Math Skills, p.61	C. Lab zone Easy Planner	• Oral response • Worksheet

Science Planned Course: Grade 6

Unit: **The Nature of Science and Technology**

Content Standard: **Apply appropriate apparatus to examine a variety of objects and processes.**

State Curriculum Standard: **(3.74 A) Explore the use of basic tools, simple materials and techniques to safely solve problems**

Course Content	Student Performance	Resources	Assessments
D. Identify the math skills scientists use to analyze their data.	D. Math: Sample Problem, p.65 • Math: Practice, p. 65 • Try This Activity, p.64	D. Lab zone Easy Planner • R/R, p. 132	• Worksheet • quiz
E. Explain what type of data line graphs can display	E. Discover Activity, p. 68 • Math: Analyzing Data, p. 73	E. Lab zone Easy Planner • R/R, p. 140	• Oral response • Worksheet
F. Describe what you should do if an accident occurs	F. Cooperative group discussion on emergency situations. • Make a Safety poster • Discover Activity, p.77	F. Lab zone Easy Planner • R/R, p. 151	• Poster presentation • Chapter test

Science Planned Course: Grade 6

Unit: **The Nature of Science and Technology**

Content Standard: **Explain how people create and use science and technology.**

State Curriculum Standard: **(3.8.4 A) Describe how scientific discoveries & technological advancements are related**

Course Content	Student Performance	Resources	Assessments
A. Describe the goal of technology.	A. Discover Activity, p. 88 • Guided Reading and Study • Skills Activity, p. 9	A. Lab zone Easy Planner • Guided Reading booklet	• Worksheet • Oral response
B. Explain how technology differs from science	B. Make a chart of science related ideas and technology related ideas	B. Textbook p. 91	• Portfolio
C. Identify factors that cause technology to progress	C. Build Inquiry, p.92 • Try This Activity, p.93 • Classify kind of clothes as obsolete, current, emerging, or coexisting technologies	C. Lab zone Easy Planner • R/R, p. 188	• Oral response • Oral presentation • Worksheet

Science Planned Course: Grade 6

Unit: **The Nature of Science and Technology**

Content Standard: **Know the pros and cons of possible solutions to technological problems in society.**

State Curriculum Standard: **(3.8.4C) Identify examples of technological change that have both positive and negative impacts**

Course Content	Student Performance	Resources	Assessments
D. Describe what is involved in each step of the technology design process	D. Discover Activity, p. 97 • Writing: Write a paragraph that describes how they would research a problem with designing a computer mouse • Try This Activity, p. 101 • Build Inquiry, p. 101 • Video Field Trip: Technology and Engineering	D. Lab zone Easy Planner • Transparency P35 • Discovery Channel School	• Portfolio • Oral presentation • Worksheet
E. Explain how technology affects people in both positive and negative ways	E. Cooperative group discussion about the effects of technology • Math Analyzing Data, p. 111	E. Textbook, p. 110-112 • R/R, p. 210	• Oral presentation • worksheet

Place Title and Grade Level Here

Unit: Electricity and magnetism

Content Standard: Explain the structure of a magnet.

State Curriculum Standard: (3.4.10A) Explain concepts about the structure and properties of matter.

Course Content	Student Performance	Resources	Assessments
A. Define magnetism and describe its properties.	A. Explore the "magic" of magnetism using the Discover Activity p. 6 • Test materials for magnetism using Skills Lab pp. 12-13	A. Magnets of various sizes, iron filings, metal and non-metal materials • Text (Electricity and Magnetism)	A. Lab report • Vocabulary quiz
B. Locate and explain magnetic domains in permanent and temporary magnets.	B. Draw and view atomic structure of magnetic domain. • Make temporary magnet from permanent magnet.	B. Transparency (N13-N16) • Magnets, nails, paperclips	B. Check drawings • Inspect magnets
C. Explain Earth's magnetic properties and describe its magnetic field.	C. Find magnetic poles using compass • Video Field Trip	C. Compasses • Discovery School video	C. Review and Reinforcement worksheet (R&R) p.74 • Chapter Test

Place Title and Grade Level Here

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Unit: Electricity and Magnetism

Content Standard: Know basic energy types.
Relate energy sources to heat and temperature.

State Curriculum Standard: (3.4.4B) Know basic energy types, sources and conversions.
(3.4.7B) Relate energy sources and transfers to heat and temperature.

Course Content	Student Performance	Resources	Assessments
A. Explain how electric charges interact.	A. Draw charge interaction • Guided reading p. 34-36 • Answer review questions	A. Drawing paper • Text	• Inspect drawings
B. Describe how static electricity builds and transfers.	B. Use static electricity to move objects.	B. Text – Discover Activity p.34 • Balloon, soda can	• Follow-up questions
C. Explain how electric current is produced.	C. Video Field Trip. • Analyze an electrical circuit. • Make a circuit	C. Discovery Channel video on Electricty • Batteries, wires, bulbs	• Quiz
D. Identify, compare, and contrast conductors and insulators.	D. Define conductor and insulator. • Build a circuit. • Use a circuit to test for conductors and insulators.	D. Batteries, wire, bulbs • Various metals and non-metals	• Check circuits
E. Describe what causes electric charges to flow in a circuit.	E. Use water to model voltage. Activity p.45. • Check for resistance in a circuit. Discovery Activity p. 44	E. Hose, sink, water • Battery, wires bulbs • Compasses	• Lab report • Oral responses

Place Title and Grade Level Here

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Unit: Electricity and Magnetism

Content Standard: Know basic energy types.
Relate energy sources to heat and temperature.

State Curriculum Standard: (3.4.4B) Know basic energy types, sources and conversions.
(3.4.7B) Relate energy sources and transfers to heat and temperature.

Course Content	Student Performance	Resources	Assessments
F. Describe what batteries are made of and how they produce electricity.	F. Draw, color,, and label a wet cell and a dry cell using a computer. • "Build: a battery (TM p. 56)	F. Computer lab • Text – p. 57 • Copper, zinc bar, wire, galvanometer	• Inspect drawings for accuracy • Lab report
G. Draw, build, and describe the basic features of an electric circuit.	• G. Draw and label a series. circuit and a parallel circuit • Build electrical circuits.	G. Transparencies N19, 20 • Drawing paper • Wires, batteries, bulbs	• Quiz
H. Identify how many paths current takes in a series circuit and a parallel circuit.	H. Build electrical circuits. • Complete related worksheets	H. Wires, batteries, bulbs • R&R p. 132 Enrichment p. 133	• Student responses

I. Explain how to calculate electric power.	I. Project: Read Your Electrical Meter • Predict bulb brightness p.65 • Build circuits using different numbers of resistors	I. Pass out at home meter reading project directions • Skills activity p.65 • Wires, batteries, bulbs	Grade project • Inspect circuits
J. Describe measures to help ensure electrical safety.	• Make an electrical safety poster • Make a fuse • Make flow charts to organize information	• Poster making art supplies • Batteries, wire, steel wool • Discover Acticity p. 71 • Charting Activity p. 75	• R&R Electrical Safety • Chapter Test

Place Title and Grade Level Here

Unit: Motion,Force,and Energy

Content Standard: Identify and Explain the principles of force and motion

State Curriculum Standard: (3.4.7 C) Describe the motion of an object

Course Content	Student Performance	Resources	Assessments
A. Calculate an object's speed and velocity.	• Skill activity p.10	• Textbook: Motion, Forces, and Energy (Prentice Hall copyright 2005) • PHSchool.com go online active art	• Section 1 assessment p.15
B.Describe the theory of plate tectonics	• Discover activity p.18	• Transparecy M4	• Lab write up

Place Title and Grade Level Here

Unit: Motion,Force,and Energy

Content Standard: Identify and Explain the principles of force and motion

State Curriculum Standard: (3.4.7 C) Describe the motion of an object

Course Content	Student Performance	Resources	Assessments
A. Explain how balanced and unbalanced forces relate to motion	• Discover activity p.22 • Section 3 ch. 1	• Textbook: Motion, Forces, and Energy (Prentice Hall copyright 2005) • www.SciLinks.org	• review and reinforcement worksheet acceleration
B Graph and analyze the motion of an accelerating object	• Discover activity p.18 • Video : motion	• Stopping on a dime skills lab p.28	• Lab write up

Place Title and Grade Level Here

Unit: Motion,Force,and Energy

Content Standard: Identify and Explain the principles of force and motion

State Curriculum Standard: (3.4.7 C) Describe the motion of an object

Course Content	Student Performance	Resources	Assessments
A. Explain how balanced and unbalanced forces relate to motion	• Sticky sneakers lab p.40 • Section 1 ch. 2	• Textbook: Motion, Forces, and Energy (Prentice Hall copyright 2005) • www.SciLinks.org	• review and reinforcement worksheet acceleration • quiz • homework
B Graph and analyze the motion of an accelerating object	• Try this activity p.44 • Video : force	• DiscoveryChannelSchool	• Lab write up

Place Title and Grade Level Here

Unit: Motion,Force,and Energy

Content Standard: Identify and Explain energy

State Curriculum Standard: (3.4.7 C) Describe energy

Course Content	Student Performance	Resources	Assessments
A. Explain how energy,work, and power are related	• How high does a ball bounce • Section 1 ch 5	• Textbook: Motion, Forces, and Energy (Prentice Hall copyright 2005) • www.SciLinks.org	• review and reinforcement worksheet : acceleration • quiz • homework
B Analyze the potential, kinetic, and mechanical energy C. How is enegy transformed when fossil fuels are used	• Try this activity p.146 • Video : energy Discover activity : what is a fuel	• DiscoveryChannelSchool	• Lab write up

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Unit: WEATHER and CLIMATE

Content Standard: The students will discern the basic elements of meteorology.

State Curriculum Standard:(3.4.7C)

Chapter 1 Course Content	Student Performance	Resources	Assessments
A. Describe the factors that interact to cause weather.	A. What factors interact to cause our weather • Set up a weather station. • Define air pressure, winds, humidity, and temperature	A. Review and reinforcement section1-1 • -Thermometer	Homework check • Quiz
B. List the factors that affect air pressure.	B. Compare and contrast temperature, water vapor, and elevation.	B. Review and reinforcement section 1-2 • barometer	B. Homework check • cooperative response
C. Describe the layers of the atmosphere	C. Group discussion: function of each of the layers.	C. Review and reinforcement section 1-3	C. Homework check • atmosphere chart
D. Describe local and global winds	D. Group discussion: origin of winds.	D. Review and reinforcement section 3-1 • anemometer, wind vane	D. homework check • cooperative response • quiz
E. Analyze air masses and fronts	E. Write a lab report • Fog in a bottle (pg. 32)	E. Create a chart of the air masses and fronts.	E. Homework check • -lab report
F. Describe severe weather (storms)	F. Create a storm poster	F. Review and reinforcement section 3-2 • Multimedia (internet research) • video- “Natures’s Fury” (National Geographic)	F. poster presentation • homework check • -quiz
G. Analyze weather data and make predictions	G. Read a weather map and hypothesize • predict the weather • chart weather data	G. Review and reinforcement section 3-3 • newspaper weather maps • daily weather log	G. homework check • weather graphs (spreadsheet) • quiz

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