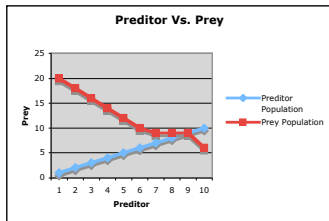


Strand I Thinking and Practice

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

Essential Question: How do scientist make discoveries?

Category	Seventh Grade	End Learning Mastery	Assessment(s)	Resources
Process of Investigation SCIENTIFIC METHOD Benchmark I: Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.	1. Use a variety of print and web resources to collect information, inform investigations, and answer a scientific question or hypothesis. 2. Use models to explain the relationships between variables being investigated.	Students will be able to write a hypothesis and conclusion in complete sentences. Students will be able to compare variables in a line graph using an "if then" statement.	Compare the variables in the graph below using a "If then" statement, and a complete sentence. 	S.E. Pgs. 6-13 <u>Unit(s)</u> Thinking Scientifically <u>Activity</u> Mystery Boxes worksheet L.Z. Keeping flowers fresh

Essential Question: How are scientist detectives?

Category	Seventh Grade	End Learning Mastery	Assessment(s)	Resources
Process of Investigation SCIENTIFIC THINKING Benchmark II: Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge	1. Describe how bias can affect scientific investigation and conclusions. 2. Critique procedures used to investigate a hypothesis. 3. Analyze and evaluate scientific explanations	Students will be able to list and describe the steps of Scientific Inquiry.	In which step of scientific inquiry do you share your results with the scientific community?	S.E. pgs. 14-18 <u>Unit(s)</u> Thinking Scientifically <u>Activity</u> Scientific Method hands-on project L.Z. Please pass the bread

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

Essential Question: Why is math the language of science and scientist?

Category	Seventh Grade	End Learning Mastery	Assessment(s)	Resources
<p>Process of Investigation MATH SKILLS</p> <p>Benchmark III: Use mathematical ideas, tools, and techniques to understand scientific knowledge</p>	<p>1. Understand that the number of data (sample size) influences the reliability of a prediction.</p> <p>2. Use mathematical expressions to represent data and observations collected in scientific investigations.</p> <p>3. Select and use an appropriate model to examine a phenomenon.</p>	<p>Students will be able to demonstrate how larger sample sizes provides better averages.</p>		<p><u>Unit(s)</u> Thinking Scientifically Genetics 4.2 Ecology 21.2, 23.1 Metric Olympics</p> <p><u>Activity</u> Metric measurements lab Making measurements T.E. pg 808 Creating data tables and graphs S.E. Pg 814 Math Skills T.E. pgs. 818-821 L.Z. What's the Chance? L.Z. Make the Right call!</p>

Stand II – Content of Science

Standard I): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Essential Question: What's the Matter?

Category	Seventh Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand II: Content of Science</p> <p>PHYSICAL SCIENCE Forms of Matter</p> <p>Benchmark I: Know the forms and properties of matter and how matter interacts</p>	<p>1. Explain how matter is transferred from one organism to another and between organisms and their environment (e.g., consumption, the water cycle, the carbon cycle, the nitrogen cycle).</p> <p>2. Know that the total amount of matter (mass) remains constant although its form, location, and properties may change (e.g., matter in the food web).</p> <p>3. Identify characteristics of radioactivity, including:</p> <ul style="list-style-type: none"> ✓ decay in time of some elements to others ✓ release of energy ✓ damage to cells. <p>4. Describe how substances react chemically in characteristic ways to form new substances (compounds) with different properties (e.g., carbon and oxygen combine to form carbon dioxide in respiration).</p> <p>5. Know that chemical reactions are essential to life processes.</p>	<p>Students will be able to describe how energy is transferred in a system and not destroyed, systems can include a food web, nitrogen cycle, water cycle, and carbon cycle.</p>	<p>Describe in complete sentences how energy from the sun is transferred through a food web.</p>	<p>S.E. pgs 740-751</p> <p><u>Units</u> Cells 3.3, 3.4 Ecology 21.1, 21.2, 22.1, 22.2</p>

CONTINUED

Stand II – Content of Science

Standard I): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Essential Question: Does energy disappear?

Category	Seventh Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand II: Content of Science</p> <p>PHYSICAL SCIENCE Properties of Matter</p> <p>Benchmark II: Explain the physical processes involved in the transfer, change, and conservation of energy</p>	<p>1. Know how various forms of energy are transformed through organisms and ecosystems, including:</p> <ul style="list-style-type: none"> ✓ sunlight and photosynthesis ✓ energy transformation in living systems (e.g., cellular processes changing chemical energy to heat and motion) ✓ effect of mankind's use of energy and other activities on living systems (e.g., global warming, water quality). 	<p>Students will be able to fill in missing portions of basic energy transfers such as photosynthesis and respiration.</p>	<p>In complete sentences describe how the energy of the sun is converted, in a plant, into energy that we can use.</p>	<p>S.E. pgs. 80-90</p> <p><u>Units</u> Ecology 22.1, 23.2, 23.2</p>

Standard I): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Essential Question: How do things move?

Category	Seventh Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand II: Content of Science</p> <p>PHYSICAL SCIENCE Forces of Matter</p> <p>Benchmark III: Describe and explain forces that produce motion in objects.</p>	<p>1. Know that forces cause motion in living systems, including:</p> <ul style="list-style-type: none"> ✓ the principle of a lever and how it gives mechanical advantage to a muscular/skeletal system to lift objects ✓ forces in specific systems in the human body (e.g., how the heart generates blood pressure, how muscles contract and expand to produce motion). 	<p>Students will be able to explain why having a skeletal system allows them to move faster.</p>	<p>Describe how a snake with a skeletal structure can move quicker than a worm that has no skeletal structures.</p>	<p>S.E. pgs 476-479</p> <p><u>Units</u> Classification 2.2</p> <p><u>Activity</u> T.E. Pg 807 Classifying</p>

Strand II Content of Science – LIFE SCIENCE

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Essential Question: Can life exist everywhere?

Category	Seventh Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand II: Content of Science</p> <p>LIFE SCIENCE Forms & Structure</p> <p>Benchmark I: Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.</p>	<p>Populations and Ecosystems</p> <ol style="list-style-type: none"> 1. Identify the living and nonliving parts of an ecosystem and describe the relationships among these components. 2. Explain biomes (i.e., aquatic, desert, rainforest, grasslands, tundra) and describe the New Mexico biome. 3. Explain how individuals of species that exist together interact with their environment to create an ecosystem (e.g., populations, communities, niches, habitats, food webs). 4. Explain the conditions and resources needed to sustain life in specific ecosystems. 5. Describe how the availability of resources and physical factors limit growth (e.g., quantity of light and water, range of temperature, composition of soil) and how the water, carbon, and nitrogen cycles contribute to the availability of those resources to support living systems. <p>Biodiversity</p> <ol style="list-style-type: none"> 1. Understand how diverse species fill all niches in an ecosystem. 2. Know how to classify organisms: domain, kingdom, phylum, class, order, family, genus, species. 	<p>Students will be able to describe a variety of biomes, and which biomes are prevalent in Northern New Mexico.</p> <p>Students will be able to identify the living and non-living components of an ecosystem.</p> <p>Students will be able to describe how living organisms fill all parts of an ecosystem.</p>	<p>Los Alamos has a unique ecosystem, what are some of the parameters that make up Los Alamos' ecosystem, and are there other cities that have a similar ecosystem?</p> <p>When Grey wolves were returned back to Yellowstone National Park in 1995, how did this make the parks ecosystem complete (focus on the niche that the wolf fills)?</p>	<p>S.E. Chapters 2,3,8,9,10,11,12</p> <p><u>Activities</u></p> <p>LAMS Zoo</p> <p>Edible Cells</p> <p>L.Z. What's living in the soil?</p> <p>L.Z. Home sweet home</p> <p>L.Z. One for all</p> <p><u>Units</u></p> <p>Ecology</p> <p>Classification</p>

CONTINUED

Strand II Content of Science – LIFE SCIENCE

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Essential Question: What are genes and the means?

Category	Seventh Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand II: Content of Science</p> <p>LIFE SCIENCE Life Forms in the Environment</p> <p>Benchmark II; Understand how traits are passed from one generation to the next and how species evolve</p>	<p>). Reproduction</p> <ol style="list-style-type: none"> 1. Know that reproduction is a characteristic of all living things and is essential to the continuation of a species. 2. Identify the differences between sexual and asexual reproduction. 3. Know that, in sexual reproduction, an egg and sperm unite to begin the development of a new individual. 4. Know that organisms that sexually reproduce fertile offspring are members of the same species. <p>Heredity</p> <ol style="list-style-type: none"> 1. Understand that some characteristics are passed from parent to offspring as inherited traits and others are acquired from interactions with the environment. 2. Know that hereditary information is contained in genes that are located in chromosomes, including: <ul style="list-style-type: none"> • determination of traits by genes • traits determined by one or many genes • more than one trait sometimes influenced by a single gene. 	<p>Students will be able to explain in complete sentences the difference between sexual and asexual reproduction.</p> <p>Students will be able to explain adaptation over time in reference to camouflage.</p>	<p>Describe how sexual reproduction allows species to adapt(change over time) faster than asexual reproducing species.</p> <p>Is the size of an individual's muscle be a inherited trait or a environmentally affected trait?</p>	<p>S.E. Chapter 4, 21 Pgs. 170-187</p> <p><u>Units</u></p> <p>Viruses 7 Genetics Evolution Viruses, bacteria, protist, and fungi Plants Sponges, cnidarians, and worms Mollusk, arthropods, and echinoderms Fish, Reptiles and amphibians Birds and mammals</p> <p><u>Activities</u></p> <p>L.Z. Modeling DNA molecules L.Z. Multiplying by dividing L.Z. Inferring the parent generation</p>

	<p>Biological Evolution</p> <ol style="list-style-type: none"> 1. Describe how typical traits may change from generation to generation due to environmental influences (e.g., color of skin, shape of eyes, camouflage, shape of beak). 2. Explain that diversity within a species is developed by gradual changes over many generations. 3. Know that organisms can acquire unique characteristics through naturally occurring genetic variations. 4. Identify adaptations that favor the survival of organisms in their environments (e.g., camouflage, shape of beak). 5. Understand the process of natural selection. 6. Explain how species adapt to changes in the environment or become extinct and that extinction of species is common in the history of living things. 7. Know that the fossil record documents the appearance, diversification, and extinction of many life forms. 			<p>parent generation</p> <p>L.Z. Modeling chromosomes during meiosis</p> <p>L.Z. Masses of Mosses</p> <p>L.Z. A close look at flowers</p> <p>L.Z. Soak it Up!</p> <p>L.Z. Keeping warm</p>
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Strand II Content of Science – LIFE SCIENCE

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Essential Question: Does a cell make an organism?

Category	Seventh Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand II: Content of Science</p> <p>LIFE SCIENCE Life Forms in the Environment</p> <p>Benchmark III: Understand the structure of organisms and the function of cells in living systems.</p>	<p>Structure of Organisms 1. Understand that organisms are composed of cells and identify unicellular and multicellular organisms. 2. Explain how organs are composed of tissues of different types of cells (e.g., skin, bone, muscle, heart, intestines).</p> <p>Function of Cells 1. Understand that many basic functions of organisms are carried out in cells, including: ✓ growth and division to produce more cells (mitosis) ✓ specialized functions of cells (e.g., reproduction, nerve-signal transmission, digestion, excretion, movement, transport of oxygen). 2. Compare the structure and processes of plant cells and animal cells. 3. Describe how some cells respond to stimuli (e.g., light, heat, pressure, gravity). Describe how factors (radiation, UV light, drugs) can damage cellular structure or function.</p>	<p>Students will be able to compare and contrast animal and plant cells.</p> <p>Students will be able to explain cell theory, and how it improves function in complex animals..</p>	<p>If cells were not able to specialize would we be able to perform all of the functions that we do? Why or Why not?</p>	<p>S.E. Pgs. 50-67</p> <p><u>Units</u> Cell 2.4, 3.5</p> <p><u>Activity</u> Diagramming cell division L.Z. Which foods are fat-free? L.Z. Looking at pigments L.Z. earthworm responses L.Z. Will it bend and move? L.Z. Sun Safety</p>

Strand II Content of Science – EARTH AND SPACE SCIENCE

Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Essential Question: How is the earth unique and similar to other planets in the galaxy?

Category	Seventh Grade	End Learning Mastery	Assessment(s)	Resources
Strand II: Content of Science EARTH & SPACE SCIENCE Universe/Solar System Benchmark I: Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures.	1. Explain why Earth is unique in our solar system in its ability to support life. 2. Explain how energy from the sun supports life on Earth.	Students will be able to explain how having water on our planet makes it possible for life.		S.E. pgs. 740 – 755 <u>Units</u> Chemistry of life <u>Activity</u> L.Z. What's for lunch?

Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Essential Question: How do we know present day biomes are different from pre-historic biomes?

Category	Seventh Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand II: Content of Science</p> <p>EARTH & SPACE SCIENCE Earth</p> <p>Benchmark II: Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth's systems.</p>	<p>1. Understand how the remains of living things give us information about the history of Earth, including: ✓ layers of sedimentary rock, the fossil record, and radioactive dating showing that life has been present on Earth for more than 3.5 billion years.</p> <p>2. Understand how living organisms have played many roles in changes of Earth's systems through time (e.g., atmospheric composition, creation of soil, impact on Earth's surface).</p> <p>3. Know that changes to ecosystems sometimes decrease the capacity of the environment to support some life forms and are difficult and/or costly to remediate.</p>	<p>Students will be able to explain how living organisms have been responsible for our current atmosphere.</p>		<p>S.E. pgs. 704 – 801</p> <p><u>Units</u> Ecology 21.4</p> <p><u>Activity</u> L.Z. Modeling fossil formation</p>

Strand III Science & Society – DISCOVER / INVENT Scientific Influence

Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

Essential Question: What scientific discoveries make you a healthier person today?

Category	Seventh Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand III: Science and Society</p> <p>Discover / Invent Scientific Influence</p> <p>Benchmark I: Explain how scientific discoveries and inventions have changed individuals and societies</p>	<p>1. Analyze the contributions of science to health as they relate to personal decisions about smoking, drugs, alcohol, and sexual activity.</p> <p>2. Analyze how technologies have been responsible for advances in medicine (e.g., vaccines, antibiotics, microscopes, DNA technologies).</p> <p>3. Describe how scientific information can help individuals and communities respond to health emergencies (e.g., CPR, epidemics, HIV, bio-terrorism).</p>	<p>Students will be able to explain how advances in technology have a direct impact on their life.</p>		<p>S.E. Chapter 5, 18</p> <p><u>Units</u> Ecology 21.2, 23.1 Genetics 5.3</p> <p><u>Activity</u> Disease report rubric L.Z. How many viruses fit on a pin? L.Z. How quickly can bacteria multiply? T.E. Parts of a Microscope, using a microscope, making a wet-mount slide pgs. 828-829</p>

Units	Corresponding standards covered
Thinking Scientifically Chapter 1,	Standard 1 Strand 1 benchmark 1 and 2
Chemistry of Life Chapter 3.1	Standard 1 Strand 2 benchmark 1 Standard 2 Strand 3 benchmark 2 Standard 3 Strand 2 benchmark 1
What makes something living Chapter 2.1	Standard 2 Strand 2 benchmark 1
Cells Chapters 2.3, 2.4, 3.2, 3.3, 3.4	Standard 2 Strand 2 benchmark 3
Genetics Chapters 3.5, 4.1, 4.2, 4.3, 4.4, 5.1, 5.2, 5.3	Standard 2 Strand 2 benchmark 2
Evolution Chapters 6.1, 6.2, 6.3	Standard 2 Strand 2 benchmark 2
Ecology Chapters 21, 22, 23	Standard 1 Strand 2 benchmark 2 Standard 2 Strand 2 benchmark 1 Standard 3 Strand 2 benchmark 2
Classification Chapter 2.2	Standard 2 Strand 2 benchmark 1
Viruses, Bacteria, Protists, Fungi Chapter 7	Standard 2 Strand 2 benchmark 1
Plants Chapters 3.3, 8	Standard 2 Strand 2 benchmark 1 and 3

Sponges, Cnidarians, and worms Chapter 9	Standard 2 Strand 2 benchmark 1
Mollusks, Arthropods, Echinoderms Chapter 10	Standard 2 Strand 2 benchmark 1
Fishes, Amphibians, And Reptiles Chapter 11	Standard 2 Strand 2 benchmark 1
Birds and Mammals Chapter 12	Standard 2 Strand 2 benchmark 1
Human Diseases Chapter 18	Standard 3 Strand 3 benchmark 1 Standard 2 Strand 2 benchmark 3 Standard 1 Strand 2 benchmark 3 Standard 1 Strand 1 benchmark 1 and 3
Metric Olympics	Standard 1 Strand 1 benchmark 3

Assessments question for New Mexico standards

Strand 1 Standard 1 Benchmark 1

Which of the following is a hypothesis?

- A) Why is the Mexican gray wolf population in New Mexico So small?
- B) The Mexican gray wolf is the smallest kind of wolf.
- C) Mexican gray wolves do not breed often enough to increase in number.
- D) Did Mexican gray wolves become rare because they were poisoned?

Strand 1 Standard 1 Benchmark 2

A scientist wants to learn why pine trees in a particular area are dying. Which of the following sources would the scientist most likely find useful?

- A) popular environmentalist magazines that have been published recently.
- B) Television programs or documents about trees and forest
- C) Sites on the Internet that discuss tree diseases
- D) Data gathered by other scientist and published in a journal

Strand 1 Standard 1 Benchmark 3

Which is the best example of a model?

- A) a hypothesis about the cauase of a disease
- B) a chart that predicts the genetic traits of bean plants
- C) the equipment you use to carry out an experiment
- D) the measurements you make during an experiment

Strand 2 Standard 1 Benchmark 1

After you eat, your body breaks down food into new substances that your body can use. Which of the following best describes these new substances?

- A) exactly like the original food
- B) made of atoms that were not in the original food
- C) weighing more than the original food
- D) having properties that are different from the original food

Strand 2 Standard 1 Benchmark 2

What substances do most organisms require to release energy from food?

- A) Oxygen
- B) Carbon dioxide
- C) Starch
- D) Sunlight

Strand 2 Standard 1 Benchmark 3

When a skeletal muscle contracts, which structure pulls directly on the bone?

- A) another bone
- B) a tendon
- C) smooth muscle
- D) marrow

Strand 2 Standard 2 Benchmark 1

What is the role of a producer in an ecosystem?

- A) become food for predators
- B) breaking down dead organisms into simple compounds
- C) bringing energy into an ecosystem by making food
- D) killing other animals for food

Strand 2 Standard 2 Benchmark 2

Where does the genetic material in sexual reproduction come from?

- A) one individual
- B) two individuals of the same species
- C) two individuals of different species
- D) more than two individuals

What is the disappearance of the dinosaurs 65 million years ago an example of?

- A) gradualism
- B) punctuated equilibrium
- C) mass extinction
- D) natural selection

Strand 2 Standard 2 Benchmark 3

What is a group of muscle cells an example of?

- A) an organism
- B) a system
- C) a tissue
- D) an organ

Strand 2 Standard 3 Benchmark 1

Which of the following factors is least likely to determine whether life can exist on earth?

- A) oxygen in the atmosphere
- B) temperatures above 0°C
- C) a plentiful supply of water
- D) a hot core of molten iron

Strand 2 Standard 3 Benchmark 2

What process is directly responsible for the oxygen in Earth's atmosphere?

- A) photosynthesis
- B) weathering
- C) volcanic eruptions
- D) sedimentary rock formation

Explain how most fossils form.

Strand 3 Standard 1 Benchmark 1

What is acquired immunodeficiency syndrome (AIDS) caused by?

- A) the influenza virus
- B) a type of bacteria
- C) HIV
- D) A genetic error

Bibliography

Science Explorer, New Mexico Grade 7
S.E.

Science Explorer Teacher Edition
T.E.

Science Explorer Lab Zone CD-Rom
L.Z.

3-D Cell Model

In this project you will make and then demonstrate a model of a plant or animal cell. Your model must be three dimensional, and made out of materials which will not melt, mold or fall apart, and is edible. Three dimensional models are **NOT** drawings, computer images or paintings.

You may choose from a wide variety of edible materials for the construction of your cell (jelly beans, jello, cake, etc) all materials must not be a food substance which will spoil.

Think about color, size, shape, and texture as you select various materials to represent the different parts of your cell based on the characteristics and functions of those parts.

Your cell must include the following:

-your name , date, and class period in an obvious location 8 points

-centrioles (animal cells only) 4 points -golgi bodies 4 points

-chromosomes or chromatin 4 points -endoplasmic reticulum 4 points

-cell membrane 4 points -vacuoles 4 points

-cell wall (plant cell only) 4 points -ribosomes 4 points

-cytoplasm 4 points -lysosomes 4 points

-nuclear membrane 4 points -mitochondria 4 points

-nucleus 4 points -chloroplasts (plant cell) 4 points

Totaling 64 points

Items listed above are worth **4 points each** and must be clearly labeled and spelled correctly

I will interview you about your science project. During this interview you will be asked to explain the functions and parts of your cell.

You will earn **6 points for each** of the areas listed below

- Creativity
- Completeness
- Effective labeling
- 3-D configuration
- Neatness
- Spelling

Totaling 36 Points

THE TOTAL POINTS POSSIBLE FOR THIS PROJECT WILL BE 100 POINTS

Diagramming Cell Division/Mitosis

Divide your large construction paper as shown below:

<div>Put your title here</div>	
Interphase	Prophase
Metaphase	Anaphase
Telophase	Interphase

Draw an animal cell in each of the phases above. The original cell has 4 chromosomes. The last interphase should show **two** cells. Show the following cell structures where appropriate:

1. cell membrane
2. nuclear membrane
3. chromatin/chromosomes
4. centrioles

5. spindle fibers

After drawing the cell in pencil, glue yarn on top of your pencil drawings. Each structure should be the same color of yarn for all the phases and should be a different color from the other structures.

In each box, write about what is happening in that cell.

INFECTIOUS DISEASE REPORT RUBRIC

During your research you will become an expert on an infectious disease that is caused by a bacterium or virus. You will prepare a three to five minute oral report that you will present to your classmates. During your research in the media center you will be taking notes and bibliographical information on 3 x 5 cards. You may use these cards to give your speech to the class. At the end of your presentation you will hand your cards in to your teacher. The note cards and a cover card must be secured with a rubber band when it is turned in. I encourage you to use visual aids during your presentation in the form of posters, pictures, short films, video clips or sound recordings. Your classmates will be taking notes on your presentation, asking questions, and offering you constructive feedback.

The following areas must be addressed during your presentation:

- Signs and symptoms of the disease
- How the disease is spread
- The incubation period of the disease
 - What are the preventative treatments or cures for this disease? Be sure to include any unusual or interesting facts and examples of the disease which will make your presentation interesting

Your research and presentation will be graded using the following rubric:

Area	Requirement	Points Possible	Points Earned	Description
Research				
	Cover card	0 – 5		Student name, Disease name, Class period
	Bibliography cards	0 – 15		At least three different types of sources (before the internet is used), bibliographies in the proper format
	Card Quality	0 – 20		Notes clear, legible, informative and organized
	Cross Referencing	0 - 10		Each card has bibliographical cross reference
Presentation				
	Introduction & Attention Step	0 - 5		Identifies disease as bacterial or viral, why you studied it, short history, attracts audience interest
	Information Flow	0 - 10		Information clearly explained, logically presented and easy to understand
	Told, not Read	0 - 5		Familiar enough with information to explain it not just read notes to the class
	Posture and Eye Contact	0 - 5		Appropriate and effective gestures, body movements and eye contact with the audience
	Perspective	0 - 10		A balance of clinical facts and human perspective on your disease and its effects
	Conclusion	0 - 5		A summary of key points, why you chose this disease and

				what interested you most
	Time Requirement	0 - 10		That your presentation is not less than three minutes and not more than five minutes
	TOTAL POINTS POSSIBLE	150		
IMC behavior		50		
Extra Credit		0 - 10		You used visual aids and your presentation shows a higher level of preparedness and delivery

TOTAL _____ ***GRADE*** _____

Comments:

EXAMPLES OF HOW BIBLIOGRAPHY CARDS AND NOTE CARDS SHOULD LOOK

1-1

1-2

1-3

1-4

1-5

-This is where you take your notes

- Group your notes by subject so you can organize them by subject later

-Put the subject name centered at the top of each card-maybe even all capitals and underlined

1

Authors last name, first name. Title. Place of publication: Name of publisher, copyright date.

2-1

2-2

2-3

2

Authors last name, First name. "Title of Article." Name of Magazine, Volume Number (Date of Publication), Page numbers of article

Your goal for this project is to create a 3-D zoo exhibit. To complete this project you will research a biome, and create your exhibit around that biome. You will need to include at least one animal from your biome, proper vegetation, and a realistic depiction of the landscape. Your zoo exhibit should be constructed in a shoebox or something of similar size and shape. You may use any materials you would like. You must include a written description of your biome and zoo exhibit. The nine biomes you may choose from are:

Tropical Rainforest

Temperate Rainforest

Temperate Deciduous Forest

Grassland

Taiga

Tundra

Freshwater

Marine (saltwater)

Desert

Label (Name, Period, Biome)	10	
Correct Animal	20	
Correct Vegetation	20	
Realistic Landscape	10	
Creativity	10	
Written Description	20	
3-D	10	
Total	100	

METRIC LAB MEASUREMENTS

In this laboratory exercise you will be using the metric system to measure various household items. In the table below look at the items to be measured and what measurement is to be taken (ie volume, mass or linear). **Before you begin your actual measurement be sure you estimate** what you think the measurement will be.

MEASUREMENT	OBJECT	ESTIMATE	ACTUAL	DIFFERENCE
Volume				
Milliliters (ml)	Plastic Vial			
	Juice Box			
	Water Bottle			
Mass				
Grams (g)	Large Paperclip			
	Pack of Gum			
	Video Tape			
Linear				
Centimeters	Plastic Straw			
Centimeters squared (cm)^{2**}	Sheet of Paper			
Centimeters cubed (cm)^{3##}	Box of Tissue			

**Remember that area is calculated by multiplying the length times the width of an object and is written

##..... Volume is calculated by multiplying length times width times height

From you experience measuring common items, what do you think is the metric equivalent of each of these measurements:

1 liquid ounce equals approximately _____ milliliters.

1 ounce by weight equals approximately _____ grams (note that the weight of the video tape is approximately 8 ounces dry weight)

1 sheet of paper which is 8.5 inches x 11 inches has 93.5 square inches. How many square millimeters are in one square inch? _____

SHOW YOUR CALCULATIONS IN THE SPACE BELOW.

MYSTERY BLUES

or
Solving A Problem with a Scientific Method

A method by which scientists solve problems is called scientific method. This method usually includes observation, stating the problem, hypothesis, experimentation, interpretation of data and drawing conclusions. Scientific method has often been compared to the procedure a detective uses in solving a crime or problem. The following investigation creates a scientific problem for you and asks you to solve it. The method that you use in attempting to solve it will follow a scientific method.

In this investigation, it is expected that you:

- make accurate observations of experimental results*
- form a hypothesis about what you expect will happen*
- record information (data) based on observations of performed experiments*
- use experimental data to interpret results*
- form a conclusion explaining what your results mean*

OBSERVATION

- 1) Carefully observe the two flasks which are labeled “A” and “B”
- 2) Record as many similarities and/or differences between the flasks as you can

Similarities	Differences



PROBLEM

- 3) Do both flasks appear to contain the same liquid? _____

HYPOTHESIS

- 4) Explain why you think so.

- 5) What gas may be in the upper half of flask “A” that is not in flask “B”? _____
- 6) Is it possible with the observations you are making now to be certain? _____

EXPERIMENT

To try and determine if the two liquids are the same a scientist would carry out some experiments. Thus experimentation is another part of the scientific method.

Experiment 1—What happens if you shake the liquids?

- Shake each flask once with an up and down motion
- Observe each flask carefully
- Record your observations below

Similarities	Differences

- 7) As a result of the shaking, might flasks “A” and “B” contain different liquids? _____
- 8) Is it possible that the liquids in both flasks are the same and that the space above the liquid in flask “A” is responsible for any change that might have occurred? _____

Experiment 2—What happens if you empty some of the liquid in flask “B” so that it appears like flask “A”?

- Remove the stopper from flask “B” and pour out half of the contents into a beaker. Replace the stopper
- Shake both flasks once
- Observe each flask carefully
- Record your observations below

Similarities	Differences

- 9) Do both flasks now appear to contain the same liquid? _____
- 10) What may have been added to flask “B” that was not present before? _____

Experiment 3—What happens if you shake the flasks more than once?

- Shake each flask one time
- Note the exact time in seconds after shaking that it takes each liquid to return to its original condition. Record your data in the table below
- Shake each flask twice and record your data below
- Shake each flask three times and record your data below

DATA

Time (in seconds) to return to original condition

			Shaken three times

11) After just one shake, are the two liquids behaving similarly? _____

12) After two and then three shakes, are they behaving similarly? _____

CONCLUSION- write your answers on a separate sheet of paper and staple it to this lab sheet

This is the last step in the scientific method. In this step, scientists join all the facts, reconsider the hypothesis and try to explain what has been observed. In writing your conclusion consider the following:

- why the liquid in flask “B” did not change when the flask was completely full
- why the liquid in flask “B” changed when the flask was only half full
- why the liquids in both flasks changed similarly when shaken only once
 - why the liquids in flasks “A” and “B” would take longer to change back to their original color with additional shakes

HANDS ON REVIEW

SCIENTIFIC METHOD

The purpose of this homework assignment is to help you review the six steps that are part of the scientific method of investigation. You must pick one of the projects below to illustrate these steps. As you are constructing and illustrating your project you should be going over each of the scientific method steps in your mind to reinforce what each means. Along with labels for each step, please explain what each step means and provide pictures or illustrations to support each idea. A grading rubric is printed on the back side of this sheet to help you organize your thoughts and presentation ideas.

OPTION 1--An Accordion Book

Take two full size sheets of paper and tape them together along one of the short sides. Fold the paper into six equal panels. Use the front of the first panel for the following: 1) the title of your book, 2) your name and class student number. Use one panel for each step in the scientific method. Each panel must include the name of the step and a brief discussion of what that step means as well as pictures and or drawings to illustrate your point. Strive to make a book that is colorful, clear, and written to help you remember the steps in the scientific method.

OPTION 2--A Writing Cube

A cube template will be provided for this project. Each face of the cube should illustrate a different step in the scientific method with descriptions and illustrations as described above. Strive to be colorful, clear and concise.

OPTION 3--A Flap Book

I will show you how to create a flap book in class. You will need four sheets of (colored) paper for this project. Use the top page for your title, name and class number and then one page each for the steps in the scientific method. Rules for describing and

illustrating each of the steps are the same as the other two projects