

NH Geomythology Anthology
Hillsboro-Deering Middle School

Classroom Technology Mini-Grant Proposal

No Child Left Behind, Title II-D

Teachers:

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Hillsboro-Deering School District Mission Statement

The SAU aims to achieve educational excellence through communication, cooperation, and community involvement, while empowering leaders and always remaining student focused.

I. Introduction

Earth is a dynamic planet. Its natural elements and cycles have fascinated humankind since its earliest appearance. That fascination was underscored by the desire to survive. We marked our first attempts at understanding with carbon symbols on cave walls and painted images upon rocks. We told stories. We carved rock. Then, over time, we developed systems for collecting and analyzing data. Our marriage of science and technology helped us understand events that had previously been explained as the work of deities. However, even now, our survival depends on knowing more. We seek the details of the past to interpret the present and predict the future. Our survival depends on those details.

Based on this inherent need to understand our planet, my co-teachers and I want to help students understand that the questions their ancestors asked are not so unlike their own. We will study Native American societies to determine how geologic processes affected their cultures. We will begin by asking students to visualize themselves as Native Americans living in 1,200 BCE. They are engaged in ordinary tasks when the ground starts to tremble beneath their feet. What explanation will their leaders offer? How will they respond as a people?

In their studies, students will find connections among science concepts, Native American creation myths, Abenaki geomyths, social studies, and technology to create an anthology of works. Those original works, including scientific record-keeping, reflective journaling, creative writing, photography, and pictorial interpretations, will be inspired by local investigative geology field work, reading, storytelling, and software technology tools.

Students will be organized into three groups and conduct their work over the course of a full school year. All groups will engage in common readings and social studies, but the separate groups will investigate different geologic locales to broaden the final product. The digitally published anthologies will be presented to the NH Department of Resources and Economic Development as student-produced resources available to the public, particularly the people of New Hampshire.

The New Hampshire Geomythology Anthology project will require students to investigate, communicate, evaluate, and collaborate to publish a final work that synthesizes their knowledge of geology, literacy, social studies, and technology tools while offering a service to their community.

II. Technology Goals for Students

HDSB Technology Vision Statement

Our vision is to create a world-class learning system where students are empowered to develop their unique talents and interests and are prepared to function as responsible citizens in a global society. We will do this by using technology to strengthen every aspect of the system: administration, communications, and most of all, teaching and learning. Administrators, staff, and students will be proficient in technology and will model its appropriate use so that the community at large will continue to see it as a useful tool.

Forty percent of our students are eligible for free and reduced lunch, meaning they live in an economically disadvantaged community. Yet many of our students have access to entertainment technology, that is, cell phones and video games. They are comfortable with the technologies they possess but casual in their use. One of our goals is to broaden their appreciation of technology in general by recognizing its academic and productive potential. Implementing technology in their study of geomythology will assist them in developing the same level of proficiency they currently demonstrate with cellular phones to more sophisticated software tools. Producing a multimedia anthology will require more complex skills and innovative thinking.

Students will learn how to use iPad technology in the field and in the classroom. They will be required to use the following applications and an online tool to complete assigned tasks, such as note-taking, sketching, concept graphing, writing, and illustrating: Penultimate, Pages, Art Studio, Animoto. Using these tools will help students focus on two of the district's technology goals:

Goal 1 - To strengthen instruction and improve learning for all levels and abilities by providing all district employees and students with access to current and emerging technologies and operating software (*ongoing*).

Goal 3 – To integrate technology into the core curriculum and align with National Educational Technology Standards, New Hampshire Curriculum Frameworks, and 21st Century Skills.

III. Technology Goals for Teachers

The HDSB Technology Vision Statement applies as much to teachers as it does to students. To ensure that teachers conducting this project are confident in their abilities to use and teach students how to use the applications, teachers will engage in customized iPad training conducted by an Apple trainer. In addition to training in the applications students will use, teachers will also learn to use iMovie, so that they may assemble a polished video of their work

during the grant period. To facilitate video production, the District has purchased FlipCams for both teachers.

IV. Project Unit Plans (See Attachments)

V. Budgeting

CLASSROOM TECHNOLOGY MINI-GRANT 2011-2012 BUDGET

| Teacher Training and Tools | | | |
|---|--------------------------|------------------------|-------------------|
| Item | Cost per Item | Number of Items | Total |
| Professional Development iPad Training from Apple | \$2,900.00 for six hours | Limit 16 teachers | \$2,900.00 |
| Annual Mini-Grant Celebration | \$100 per Person | 2 | \$200 |
| Tools for Student Groups to Share | | | |
| iPad | \$479.00 | 10 Pack | \$4,790.00 |
| Apple Care | \$79.00 | 10 | \$790.00 |
| Pages for iPad | \$9.99 | 10 | \$99.90 |
| Art Studio for iPad | \$9.99 | 10 | \$99.90 |
| Penultimate | \$1.99 | 10 | \$19.90 |
| iMovie | \$14.99 | 2 | \$29.98 |
| Keyboard Dock | \$69.00 | 10 | \$690.00 |
| iPad Dock Connector to VGA Adapter | \$29.00 | 10 | \$290.00 |
| Total | | | \$9,909.68 |

Geology Lesson Plans

2011-2012

Hillsboro-Deering Middle School

60 days/100 7th & 8th students

| | Monday | Tuesday | Wednesday | Thursday | Friday |
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| <p>Week 1 Topics</p> <p>Layers of the Earth</p> <ul style="list-style-type: none"> Core Mantle Lithosphere Hydrosphere <p><u>S:ESS1:8:2.2</u> <u>S:ESS1:8:5.2</u> <u>S:ESS1:8:5.3</u> <u>S:ESS1:8:6.4</u></p> | <p style="text-align: right;">1</p> <p>Objective(s): Students will</p> <ul style="list-style-type: none"> explain the processes that led to Earth's present form. use a timeline scale to understand major geologic events. complete a pretest to determine student content knowledge. <p>Materials:</p> <ul style="list-style-type: none"> Course Syllabus Geologic history highlight cards URL clip Pretest <p>Procedure:</p> <ol style="list-style-type: none"> Distribute and discuss the class syllabus. Journey Back in Geologic Time. Simulate geologic events. Go outdoors assign 1 major event to each student. Major geologic events will be labeled and discussed. | <p style="text-align: right;">2</p> <p>Objective(s): Students will</p> <ul style="list-style-type: none"> identify the weathering relationship between the hydrosphere and lithosphere. use data to draw conclusions. use a lab outline to write a lab report. <p>Materials:</p> <ul style="list-style-type: none"> Field notebook information sheet Sample field notebooks Download field notebook rubric Outdoor Lab: Exploring the Hydrosphere & Lithosphere-collection buckets, digital cameras Download lab report template Lab report rubric <p>Procedure:</p> <ol style="list-style-type: none"> Identify the inquiry questions for today's lab How does the lithosphere | <p style="text-align: right;">3</p> <p>Objective(s): Students will</p> <ul style="list-style-type: none"> create digital models of Earth's layers. use the words crust, mantle outer core, and inner core to identify Earth's layers. use online resources to collect information about Earth's layers. <p>Materials:</p> <ul style="list-style-type: none"> http://www.learner.org/interactives/dynami cearth/structure.html http://www.solarviews.com/eng/earthint.htm iPads <p>Procedure:</p> <ol style="list-style-type: none"> Write the words mantle, outer core and inner core on the boards. Point out the words to students and | <p style="text-align: right;">4</p> <p>Objective(s): Students will</p> <ul style="list-style-type: none"> create a digital model of Earth's layers. use a digital application, Art Studio, to diagram Earth's layers. use a rubric to guide and evaluate their diagrams. <p>Materials:</p> <ul style="list-style-type: none"> iPads Pages A rubric for evaluating a model or Earth's layers <p>Procedure:</p> <ol style="list-style-type: none"> Review the rubric for producing a digital diagram of a geologic concept. Have students work collaboratively. They will use the research they collected yesterday and the application Art Studio to draw and label Earth's layers. Remind students | <p style="text-align: right;">5</p> <p>Objective(s): Students will</p> <ul style="list-style-type: none"> present and explain a diagram of Earth's layers. Use a rubric to evaluate diagrams. <p>Materials:</p> <ul style="list-style-type: none"> Multiple copies of the evaluation rubric <p>Procedure:</p> <ol style="list-style-type: none"> Draw group names out of a hat to determine the order of student presentation. Have students use copies of the rubric to evaluate each presentation. <p>Assessment:</p> <ul style="list-style-type: none"> Ask students to assess each other's finished work. |

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| | <p>http://www.cotf.edu/ete/modules/mese/earthsysflr/geo_activity.html</p> <p>3. Video clips of earth's formation- to engage student interest. http://www.youtube.com/watch?v=-x8-KMRonx8</p> <p>4. Administer pretest.</p> <p>Pre-Test Assessment:</p> <ul style="list-style-type: none"> • Pre-test | <p>affect the hydrosphere?</p> <ul style="list-style-type: none"> • How does the hydrosphere affect the lithosphere? 2. Students will observe meandering river beds, sediments and weathered rock formations and develop cause related hypotheses. 3. Have students collect and record evidence related to the inquiry questions in their field. <p>Assessment:</p> <ul style="list-style-type: none"> • Have students write short responses to the inquiry questions. Require that they include evidence they collected during the lab to substantiate their answers. • Assign the lab report for Friday. Distribute copies of the Lab Report Template and the Rubric. Review both as a class. | <p>ask them to use them in a discussion of a diagram of Earth's layers.</p> <ul style="list-style-type: none"> 2. Discuss student's responses to yesterday's short-answer questions. 3. Explain the assessment to students. Have them use internet resources to collect research for their assessment. <p>Assessment:</p> <ul style="list-style-type: none"> • Students will share their responses to yesterday's short-answer questions. • Quiz- Label the diagram. | <p>to review the rubric before beginning work.</p> <p>Assessment:</p> <ul style="list-style-type: none"> • Observe students as they work. Offer assistance when requested or appears necessary. | <ul style="list-style-type: none"> • Collect students' lab reports. <p>Student presentation are continued</p> |
| <p>Week 2 Topics</p> <p>Plate Tectonics</p> <ul style="list-style-type: none"> • Convection • Volcanoes • Earthquakes <p><u>S:ESS1:8:2.2</u> <u>S:ESS1:8:5.2</u> <u>S:ESS1:8:5.3</u> <u>S:ESS1:8:6.4</u></p> | <p>6</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> • explain how convection currents are a force of change. • define a convection current. • discover the processes that recycles materials within Earth. <p>Materials:</p> <ul style="list-style-type: none"> • Clear glass beaker that can be placed on a hot plate • Hot plate • Water • Paper dots or confetti • Safety goggles • Student Worksheet: "Convection Current" <p>Procedure: Students will</p> | <p>7</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> • use candy bars to simulate tension compression and shearing. • illustrate each simulation using e-field notebook. <p>Materials:</p> <ul style="list-style-type: none"> • Snickers bars • Worksheet "Candy Bar Tectonics" <p>Procedure: Students will</p> <ul style="list-style-type: none"> • conduct Candy Bar Tectonics lab- see lab attachment <p>Assessment:</p> <ul style="list-style-type: none"> • Lab reflection questions • Illustrations • Small group discussion | <p>8</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> • view plate tectonic animations. • list dates of earthquake activity in NH in the past decade. <p>Materials:</p> <ul style="list-style-type: none"> • plate tectonic animation <p>http://www.learner.org/interactives/dynamicearth/slip2.html</p> <ul style="list-style-type: none"> • NH earthquake data http://quake.bc.edu:8000/cgi-bin/NESN/recent_events.pl • iPads | <p>9</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> • relate plate movement to earthquakes and volcanoes • model S and P waves with a Slinky™ • consolidate and graph/diagram NH seismic data on the iPads <p>Materials:</p> <ul style="list-style-type: none"> • 4-5 Slinky™ toys • iPads <p>Procedure: Students will:</p> <ol style="list-style-type: none"> 1) finish data displays. 2) do an earthquake simulation-Students will link arms in two groups to simulate the various fault movements. 3) demonstrate the S & P | <p>10</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> • explore the remnants of ancient volcanoes called the Bronson Hill Terrane Rte 9 between Keene & Brattleboro. • determine if the volcano is active, dormant, or extinct. <p>Materials:</p> <ul style="list-style-type: none"> • digital camera • e-field notebook • lab handout & reflection questions • Lab Report Rubric <p>Procedure:</p> <ol style="list-style-type: none"> 1) Distribute lab handouts. Have students: |

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| | <ul style="list-style-type: none"> conduct Convection Current lab- see lab attachment <p>Assessment:</p> <ul style="list-style-type: none"> Discussion will conclude lab to check student understanding. | | <p>Procedure:</p> <ol style="list-style-type: none"> Use iPads to access the interactive link on plate boundaries. http://www.learner.org/interactives/dynamicearth/slip.html <ul style="list-style-type: none"> Have students use their iPads to record definitions of major tectonic concepts: strike-slip faults; normal and reverse faults. Access the USGS data on NH seismic activity for the past 10 years. Introduce the concept of a moment magnitude scale. Students will conclude what areas in NH have the most activity. Students will display their conclusion in a digital art data display of their choice. <ul style="list-style-type: none"> Use Pages on iPad to begin creating data display of earthquake activity in NH. <p>Assessment:</p> <ul style="list-style-type: none"> Observe students as they work. Offer assistance when requested or appears necessary. | <p>waves with the Slinky™ toys</p> <ol style="list-style-type: none"> Students will summarize their simulation in the notebooks. <ol style="list-style-type: none"> complete their digital data display of NH's seismic activity. <p>For Homework (HW)</p> <ol style="list-style-type: none"> Record what evidence must be present to determine if a volcano is active, dormant, or extinct. Students can start background info search here: http://scienceblogs.com/highlyallochthonous/2008/05/active_dormant_and_extinct_vol.php <p>Assessment:</p> <ul style="list-style-type: none"> Students will submit their data displays. Some will be selected for admission to the anthology. | <ol style="list-style-type: none"> begin the lab while riding to the field site. explore the site for 5-10 minutes. gather evidence to support original hypotheses, deciding if the mountain is extinct, dormant or active. photograph evidence to support their hypotheses. write conclusions about their findings. <p>Assessment:</p> <ul style="list-style-type: none"> Distribute evaluation rubrics. Have students use the rubric to evaluate/jury exemplary student work. Collect the conclusions students recorded in their e-field notebooks. |
| <p>Week 3 Topics Oceans</p> | <p style="text-align: right;">11</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> infer that heavier sedimentary particles sink faster than finer particles. <p>Materials:</p> | <p style="text-align: right;">12</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> collect sediment cores at Fox State Forest <p>Materials:</p> | <p style="text-align: right;">13</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> answer the question, "How does a mountain form in the ocean?" build a bathymetric | <p style="text-align: right;">14</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> model a deep-sea vent. <p>Materials:</p> <ul style="list-style-type: none"> iPads One <i>Make Your Own</i> | <p style="text-align: right;">15</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> review the requirements for the E-Book Anthology. complete a tutorial in |

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| <ul style="list-style-type: none"> • Trenches & Canyons • Ridges • Hydro Thermal vents • Sediments • Subduction <p><u>S:ESS1:8:2.2</u></p> <p><u>S:ESS1:8:5.2</u></p> <p><u>S:ESS1:8:5.3</u></p> <p><u>S:ESS1:8:6.4</u></p> | <ul style="list-style-type: none"> • iPads • <i>Part II:</i> for each group of 4 • 3 pint jars with lids, e.g., Snapple bottles, mayonnaise, or canning jars • 1/4 cup of each of the 3 sizes of sediments • small gravel, sand, and silt • water to fill the 3 jars • <i>Sediment Analysis Worksheets</i> for each student • stopwatch • magnifying glass • plastic spoon • <i>Part III:</i> Teacher Demonstration • 10 gallon aquarium • 1/2 cup of each of the 3 sediments used above • enough water to fill the aquarium • hair dryer or aquarium filter <p>Procedure: Students will</p> <ul style="list-style-type: none"> • conduct <i>Let's Bet on Sediments</i> Lab-see lab attachment <p>Assessment:</p> <ul style="list-style-type: none"> • Review student's Sediments Analysis Worksheets • Students will write a paragraph summarizing what they learned about turbidity, currents, and sedimentation. | <ul style="list-style-type: none"> • 5-8 core samplers • iPads • e-field notebooks • Lab & Lab Reflection sheets <p>Procedure: Students will</p> <ol style="list-style-type: none"> 1) demonstrate the proper way to extract a core sample 2) extract core sample from the wetland along Mud Bog Trail at Fox State Forest. 3) describe the material contained in the core samples, theorize how the materials arrived at that location, and predict what will happen to the materials in the future. <p>Assessment:</p> <ul style="list-style-type: none"> • Discussion • Lab reflection questions | <p>model.</p> <p>Materials:</p> <ul style="list-style-type: none"> • Underwater ocean clip: http://www.youtube.com/watch?v=JkeglSqQMMyQ • A square quart plastic food storage container at least 7 cm deep • 500-700 ml of water in measuring cup or bottle • 10 cm plastic ruler (can be made by photocopying a ruler repeatedly on acetate) • overhead projector acetate cut to fit a food container top • felt tip waterproof marker • 12 inches of masking tape • scissors • two sticks of modeling clay – two colors • student handouts <p>Procedure: Students will</p> <ol style="list-style-type: none"> 1) conduct Bathymetric Model Lab-see lab attachment. 2) film student explanations of the lab for the anthology. <p>Assessment:</p> <ul style="list-style-type: none"> • Student will use their models to explain how mountains form. • Review student handouts. | <p><i>Deep-sea Vent!</i> instruction page</p> <ul style="list-style-type: none"> • Large clear plastic or glass container, about 1 gallon • Small bottle, 8 oz or less • 5 drops of red food coloring • 1m piece of cotton string • Cold tap or ice water to fill large container • Hot water about 80 degrees C to fill the small bottle. <p>Part II—For each group:</p> <ul style="list-style-type: none"> • 50 ml water • 5 ml calcium chloride (Damp Rid, used to remove moisture from closets is widely available or salt used to melt ice from walks in winter) • 5 ml baking soda • 8 oz clear plastic cup <p>Procedure: Students will</p> <ol style="list-style-type: none"> 1) View images of thermal vents http://www.pbs.org/wgbh/nova/abyss/frontier/vents.html 2) Conduct <i>AdVENTturous Findings on the Deep-Sea Floor</i> Lab-see lab attachment <p>Assessment:</p> <ul style="list-style-type: none"> • Written responses in science e-field notebooks will be evaluated for elaboration of ideas regarding how precipitates and vent chimneys form. | <p>Pages.</p> <ul style="list-style-type: none"> • apply for anthology jobs. <p>Materials:</p> <ul style="list-style-type: none"> • iPads • Pages • Index cards • Job application template • Anthology Rubric <p>Procedure: Students will</p> <ol style="list-style-type: none"> 1) review anthology e-book expectations and rubrics. 2) view a teacher guided Pages demonstration. 3) create a decorative cover for e-field books using Art Studio software. 4) discuss job opportunities on an anthology staff: <ul style="list-style-type: none"> • Editors: proofread for structure and adherence to language conventions. • Graphic Designer: choose a layout for the anthology and begin laying out designed pages. • Art Director: Gather artwork, obtains photos, scan documents, and solve creative problems. • Copyeditors: vet all content for accuracy. 5) complete job applications, indicating their first, second, and third choice for anthology role. <p>Assessment:</p> <ul style="list-style-type: none"> • Successful completion of cover for e-field notebooks. |
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Week 4 Topics

Rock Cycle

- Metamorphic
- Igneous
- Sedimentary
 - Fossils
- Rock ID – studying rock features to understand where they came from

S:ESS1:8:2.2

S:ESS1:8:5.2

S:ESS1:8:5.3

S:ESS1:8:6.4

16

Objective(s) Students will

- edit, compile, and organize anthology content.

Materials:

- Student original works
- Lab Reports
- Rubrics
- iPads
- Digital Cameras
- Pages

Procedure: Students will

- 1) elect an editor-in-chief for their groups. Have editors-in-chief make assignments for the week.

Assessment:

- Observe students as they work. Offer assistance when requested or appears necessary.

17

Objective(s) Students will

- create a rock history for a “new” rock

Materials:

- iPads
- Cosmetics
- Baby powder
- Vitamins
- Pavement etc.
- Vocabulary sheet
- Model magic
- Modeling clay
- pebbles

Procedure: Students will

- 1) discuss the rocks and minerals that are part of every-day materials, e.g., Cosmetics
Baby powder
Vitamins
Pavement
- 2) define the three basic types of rock:
 - a. Metamorphic
 - b. Igneous
 - c. Sedimentary
- 3) present a video clip on how the different types of rock are formed.
<http://www.youtube.com/watch?v=d4XAOY-VEEI&feature=related>
- 4) conduct a *Create a Rock* Lab.
 - create an entirely new metamorphic, igneous, or sedimentary rock.
 - name the rock
 - explain the rock’s history
 - predict the rock’s future

Assessment:

18

Objective(s) Students will

- explore the fossils at Montcalm, Grafton, New Hampshire. (The mountain contains shells of marine animals that have been replaced with metamorphic minerals.)

Materials:

Outdoor Lab

Procedure: Students will

- 1) explain how oceanic fossils became part of a mountain
- 2) explore the mountainside for 5-10 minutes, collecting photographic evidence to include in their e-field notebook reports, while finding evidence to support their hypotheses.
- 3) Summarize student findings in notebook & upload photos to Pages

For HW: Formal report due Friday

Assessment:

- Distribute evaluation rubrics. Have students use the rubric to evaluate/jury exemplary student work.

19

Trip to the Kearsage Native American Museum

Objective(s) Students will

- select one artifact from the exhibit to research further
- photograph the artifact
- explain the purpose of the artifact
- share their explanations with the class

Materials:

- iPads
- digital cameras
- Museum Guide worksheet

Procedure: Students will

- 1) explore the Woodland Indians exhibit.
- 2) choose an artifact to research
- 3) write an explanation of the purpose and history of their chosen artifact

Assessment:

- Students will prepare their artifact presentation for tomorrow

20

Objective(s) Students will

- present their artifact reports
- edit, compile, and organize anthology content.

Materials:

- Student original works
- Lab Reports
- Rubrics
- iPads
- Digital Cameras
- Pages

Procedure:

- 1) Have editors-in-chief work with team members to conduct a progress check on anthology work to determine where needs exist.

Assessment:

- Observe students as they work. Offer assistance when requested or appears necessary.

Week 5 Topics

- Glacial Activity

[S:ESS1:8:2.2](#)

[S:ESS1:8:5.2](#)

[S:ESS1:8:5.3](#)

[S:ESS1:8:6.4](#)

- Have students introduce their rock creations.

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| | <p style="text-align: right;">21</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> • define glaciers. • explain how glaciers are formed. • view a video on the fastest moving glacier in the world. <p>Materials: iPads http://www.fs.fed.us/r1o/tongass/forest_facts/resources/geology/ice-fields.htm#glacier http://www.nps.gov/glac/forteachers/upload/Glacier%20vocabulary.pdf http://www.teachersdomain.org/resource/ipyo7.sci.ess.watcyc.fastglacier/</p> <p>Procedure: Students will</p> <ol style="list-style-type: none"> 1) research & define what a glacier is. http://www.fs.fed.us/r1o/tongass/forest_facts/resources/geology/ice-fields.htm#glacier 2) issue one vocabulary word to each group of students. Have students research the term and diagram it. Glacier vocabulary: moraine, terminus, glacial | <p style="text-align: right;">22</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> • travel to Fox State Forest to view glacial erratic, scouring, and sediment deposition. <p>Materials: • iPads • digital cameras • Glacial Scavenger Hunt Point Sheet</p> <p>Procedure: Students will</p> <ol style="list-style-type: none"> 1) Participate in a glacier scavenger hunt looking for evidence of glacial activity. 2) photograph glacial-related phenomena listed on the Scavenger Hunt Point Sheet and tally their points. 3) Insert and label images into their e-field notebooks. <p>Assessment:</p> <ul style="list-style-type: none"> • Summarize student findings in notebook & discussion. • Formal report due Friday • Distribute evaluation rubrics. Have students use the rubric to evaluate/jury exemplary student work. | <p style="text-align: right;">23</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> • edit, compile, and organize anthology content. <p>Materials:</p> <ul style="list-style-type: none"> • Student original works • Lab Reports • Rubrics • iPads • Digital Cameras • Pages <p>Procedure:</p> <ol style="list-style-type: none"> 1) Have editors-in-chief work with team members to conduct a progress check on anthology work to determine where needs exist. <p>Assessment:</p> <ul style="list-style-type: none"> • Observe students as they work. Offer assistance when requested or appears necessary. | <p style="text-align: right;">24</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> • apply understanding of the forces of glacial movement to the explanation of the current features of Franconia Notch. <p>Materials:</p> <ul style="list-style-type: none"> • iPads • http://www.nytimes.com/1994/05/08/travel/notches-rock-carved-by-glaciers.html <p>Procedure: Students will</p> <ol style="list-style-type: none"> 1) research and then use words and pictures to illustrate the glacial history of Franconia Notch in their e-field notebooks. Have students cite their sources using www.easybib.com. <p>Assessment:</p> <ul style="list-style-type: none"> • e-field notebook summary | <p style="text-align: right;">25</p> <p>Trip to Franconia Notch</p> <p>Objective(s) Students will</p> <ul style="list-style-type: none"> • find evidence of glacial activity <ul style="list-style-type: none"> ○ till ○ erosion ○ scouring <p>Materials:</p> <ul style="list-style-type: none"> • Lab & reflection questions • iPads • Digital cameras • Warm clothing <p>Procedure: Students will</p> <ol style="list-style-type: none"> 1) travel to Franconia Notch 2) find evidence of erosion, till, scoring. 3) answer reflection questions. 4) use Art Studio to draw/paint before-and-after pictures of the region known now as Franconia State Park. Before pictures will show what students imagine the landscape might be if there had been no glacial activity. After pictures show the current appearance of Franconia State Park. <p>Assessment:</p> <ul style="list-style-type: none"> • e-field notebook |
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| | <p>erratic, scouring, and sediment deposition.</p> <p>http://www.nps.gov/glac/forteachers/upload/Glacier%20vocabulary.pdf</p> <p>3) view and then discuss video of the fastest moving glacier.</p> <p>http://www.teachersdomain.org/resource/ipy07.sci.ess.watcyc.fastglacier/</p> <p>4) summarize new content in e-field notebook.</p> <p>Assessment:</p> <ul style="list-style-type: none"> • Have students share and explain their vocabulary diagrams. • Have students record definitions of all of the vocabulary they used today in their e-field notebooks. | | | | <p>summaries</p> <ul style="list-style-type: none"> • before and after pictures • lab question reflections |
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Week 6 Completion of anthology and posttest.

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|--|---|--|---|--|---|
| <p>Week 4 (supporting Week 4 of the Geology unit)</p> <p>Learning Standards: R-7-4.1 R-7-4.2 R-7-4.3 R-7-4.4 R-7-4.5 R-7-5 R-7-7.2 R-7-16.1 R-7-16.2 R-7-13</p> | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Identify the geographical location of the Iroquoian people on a map Define a creation myth Use terms associated with creation myths to create a vocabulary concept map <p>Materials:</p> <ul style="list-style-type: none"> iPads <p>Procedure:</p> <ol style="list-style-type: none"> Go to the following site http://www.mrsbogucki.com/aemes/resource/woodland/index.htm Ask a student to use the legend to locate the Eastern Woodland people. Explain that these people included the Iroquois. Introduce students to part 1 of the following YouTube movie: http://www.youtube.com/watch?v=P3XoYZgvEH8, a student-created explanation of an Iroquois creation myth. Invite volunteers to retell the myth. Go to the following URL to introduce the following student-written explanation of creation myths. http://www.cs.williams.edu/~lindsey/myths/myths.html Next, | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Compare creation myths Explain the value of animals in the creation myths <p>Materials:</p> <ul style="list-style-type: none"> iPads <i>The Big Myth</i> CD <i>Penultimate</i> for the iPad <p>Procedure:</p> <ol style="list-style-type: none"> Ask groups to project and explain their concept maps describing the attributes of a creation myth. Explain to students that they're going to hear another version of the Iroquois creation myth they heard yesterday. Ask them to take notes of how what they hear today is similar to and different from the myth they heard yesterday. Play the Iroquois creation myth from the CD <i>The Big Myth</i>. Invite volunteers to summarize the story they heard. <p>Assessment:</p> <ol style="list-style-type: none"> Organize students into groups. Assign each group to use <i>Penultimate</i> on their iPads to draw a Compare and Contrast chart. Have students compare and contrast the two Iroquois creation myths. | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Identify the geographical location of the Seminole and Cherokee people on a map Compare creation myths Explain the value of animals in the creation myths <p>Materials:</p> <ul style="list-style-type: none"> iPads <i>Penultimate</i> for the iPad <p>Procedure:</p> <ol style="list-style-type: none"> Ask groups to project and explain their compare/contrast charts. Revisit the map http://www.mrsbogucki.com/aemes/resource/woodland/index.htm. Explain that the Seminole were people of the Southern Woodlands and the Cherokee were people of the Eastern Woodlands. Show the remaining parts of the YouTube movie: http://www.youtube.com/watch?v=P3XoYZgvEH8, student-created retellings of Seminole and Cherokee creation myths. <p>Assessment:</p> <ol style="list-style-type: none"> Organize students into groups. Assign each group to | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Define the following terms: <i>divine, monstrous, portion, fierce, terrifying, enormous, outlandish, weapon, duel, maize</i> <p>Materials:</p> <ul style="list-style-type: none"> iPads The online tool <i>Animoto</i> <p>Procedure:</p> <ol style="list-style-type: none"> Organize students into 10 groups. Write the following words on chart paper: <i>divine, monstrous, portion, fierce, terrifying, enormous, outlandish, weapon, duel, maize</i>. Assign one word to each group. Assign each group to research the meaning of their assigned word and use <i>Animoto</i> to define their word in no more than 30 seconds, using music and images. For Homework: List the following animal names on the board: loon, snapping turtle, beaver, muskrat, toad, wolf, bear, panther, dove, mockingbird, partridge. Explain that these animals are part of a Huron creation myth they will read tomorrow. Randomly select students' names and assign each name a different animal. | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Present a list of attributes for a specific animal. Read a Huron creation myth. Compare/contrast the Huron myth to the Iroquois myth. Retell the Huron story from their assigned animal's point of view. <p>Materials:</p> <ul style="list-style-type: none"> Chart of vocabulary terms <i>In the Beginning</i> by Virginia Hamilton iPads <i>Animoto</i> <p>Procedure:</p> <ol style="list-style-type: none"> Have students share their <i>Animoto</i> creations. Discuss as a class the meanings of the words and how the pictures, words, and music support those meanings. Write the following questions on the board: How is the Huron diving myth similar to the Iroquois diving myth? How are the two myths different? Organize students into pairs. Direct students to read |

click on the link Iroquois Creation Myth. Have students read the myth.

6) Write the following words on the board: supreme being, birth, passive creator, active creator, diver myth.

Assessment:

1) Have students work in small groups and use the application *Penultimate* on their iPads to complete a concept map. Help students begin by modeling a map, writing the term *creation myth* in the center. Then show students how to draw links to the central concept, filling in and explaining the remaining terms introduced in Step 6 of the procedure.

recall and explain the importance of animals in each myth, explaining how the roles are similar and how they are different.

For homework, tell students to research and list important attributes of their animal.

Assessment:

1) Offer assistance as necessary as students build their 30-second animated definitions.

“The Woman Who Fell from the Sky” (pages 58–63) in *In the Beginning* to find and record the answers to the questions. *Before students begin to read*, ask them to think about the diving myths they have learned about to predict details they expect to find in the myth. Also have them pay special attention to the role of their assigned animals in the myth.

Assessment:

1) Have students use *Penultimate* to record and then share their answers to the questions.
2) Have students brainstorm similarities and differences in their thinking. Record student responses on the board or on chart paper.
3) As homework, assign students to rewrite the story from the point of view of their assigned animals. Tell them to be prepared to use *Art Studio* to illustrate their retellings.

| | Monday | Tuesday | Wednesday | Thursday | Friday |
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| <p>Week 5 (supporting Week 5 of the Geology unit)</p> <p>Learning Standards: R-7-4.1 R-7-4.2 R-7-4.3 R-7-4.4 R-7-4.5 R-7-5 R-7-7.2 R-7-16.1 R-7-16.2 R-7-7.4 R-7-7.5</p> <p>R-7-8.1 R-7-8.2 R-7-12.1 R-7-13 R-7-17.2 R-7-15.1 R-7-15.2 R-7-15.3 R-7-15.4</p> | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Retell a diving myth from a different point of view <p>Materials:</p> <ul style="list-style-type: none"> iPads <i>Art Studio</i> for the iPad <p>Procedure:</p> <p>1) Have students create an illustration in <i>Art Studio</i> to support their retelling of "The Woman Who Fell from the Sky."</p> <p>Assessment:</p> <p>1) Draw names at random to have students show their illustrations and explain the relationship between their art and the retelling of the myth.</p> | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Record notes about the Abenaki people of New Hampshire <p>Materials:</p> <ul style="list-style-type: none"> NHNPR video "The People of the Dawn" (18 minutes) http://video.nhptv.org/video/1633511253/ iPads <i>Penultimate</i> for the iPad <p>Procedure:</p> <p>1) Write the following words on the board or chart paper: <i>quahog, dugout, wampum, kinnikinnik, Penacook, birchbark, sinew, mortar and pestle, artifact, ancestor, wigwam, shellfish</i></p> <p>2) Organize students into 12 groups. Assign a different word to each group. Have each group look up the meaning of their word and write its definition on the board or chart. Ask student groups to explain their words to the class.</p> <p>3) Write the labels Crops, Diet, Habitat, Trade, Relationships with Animals, Social Customs, and Spiritual Beliefs on the board. Organize students into 7 groups. Explain that after watching the movie, each group will be assigned one of the topics listed on the board to research further and write about.</p> <p>4) Have students watch the NHNPR video "The People of the Dawn" and record notes of important details.</p> <p>5) Assign each student group a different topic from the list on the board. Tell students that they will collaborate to find more information on their topic and</p> | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Use a digital application to create a brochure about the Abenaki people <p>Materials:</p> <ul style="list-style-type: none"> iPads <i>Pages</i> for the iPad Development rubric <p>Procedure:</p> <p>1) Explain that each group will contribute one part of the brochure. They will import the other groups' work to create an original brochure.</p> <p>2) Distribute copies of the Development Rubric. Review the rubric as a class.</p> <p>3) Have the collaborative groups use <i>Pages</i> to begin developing their brochures.</p> <p>Assessment:</p> <p>1) Offer assistance with writing, as necessary.</p> | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Assemble imported data into a finished brochure Use a rubric to guide the development of a brochure <p>Materials:</p> <ul style="list-style-type: none"> iPads <i>Pages</i> for the iPad Development rubric <p>Procedure:</p> <p>1) Have students import the work of other groups to create a finished brochure. Each group may design/illustrate the brochure as they choose.</p> <p>Assessment:</p> <p>1) Offer assistance, as necessary.</p> | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Use a rubric to self-evaluate a finished product <p>Materials:</p> <ul style="list-style-type: none"> iPads <i>Pages</i> for the iPad Finished brochures Development rubric <p>Procedure:</p> <p>1) Review the Development Rubric as a class.</p> <p>2) Assign a number to each group of students. Draw numbers at random to determine the presentation order.</p> <p>3) Have students use the rubric to evaluate each other's brochures.</p> <p>Assessment:</p> <p>1) Collect the rubric scores to determine each group's final score.</p> <p>2) Ask students to summarize what they learned about the Abenaki by completing the brochures.</p> |

tomorrow, when they return to class, they will use their notes to write about their topic. Their work will be compiled with the written work from other groups to create a brochure about the Abenaki people.

Assessment:

- 1) Offer assistance with the research and note-taking processes.

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|--|---|---|--|--|---|
| <p>Week 6 (supporting Week 6 of the Geology unit)</p> <p>Learning Standards: R-7-8.1 R-7-8.2 R-7-12.1 R-7-13 R-7-17.2 R-7-15.1 R-7-15.2 R-7-15.3 R-7-15.4</p> | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Write and illustrate an original creation myth Use a rubric to guide their writing <p>Materials:</p> <ul style="list-style-type: none"> iPads <i>Penultimate</i> for iPads Writing a Creation Myth Rubric <p>Procedure:</p> <ol style="list-style-type: none"> Assign students to work in teams. Give each team a copy of the Writing Rubric. Review the rubric as a class. Have students use <i>Penultimate</i> to storyboard their writing ideas. <p>Assessment: Assist students, as necessary.</p> | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Write and illustrate an original creation myth Use a rubric to guide their writing <p>Materials:</p> <ul style="list-style-type: none"> iPads <i>Penultimate</i> for iPads <i>Art Studio</i> for iPads Writing a Creation Myth Rubric <p>Procedure:</p> <ol style="list-style-type: none"> Have students continue working on their myths. Remind them to refer to the Writing Rubric. Ask students to write art specifications for their myth and begin illustrating. <p>Assessment: Assist students, as necessary.</p> | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Write and illustrate an original creation myth <p>Materials:</p> <ul style="list-style-type: none"> iPads <i>Pages</i> for iPads <i>Art Studio</i> for iPads Writing a Creation Myth Rubric <p>Procedure:</p> <ol style="list-style-type: none"> Have students complete writing and illustrating their myths. Students should begin putting their final stories into <i>Pages</i>. <p>Assessment: Assist students, as necessary.</p> | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Present their creation myths. Use a rubric to evaluate the work of others. <p>Materials:</p> <ul style="list-style-type: none"> iPads Writing a Creation Myth Rubric <p>Procedure:</p> <ol style="list-style-type: none"> Assign each pair a number. Draw numbers at random to determine the order of presentations. Have students use the Writing a Creation Myth Rubric to evaluate each other's work. <p>Assessment:</p> <ol style="list-style-type: none"> Use the Writing a Creation Myth Rubric to evaluate each presentation. Collect all rubrics to determine final evaluation for the unit. | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Present their creation myths. Use a rubric to evaluate the work of others. <p>Materials:</p> <ul style="list-style-type: none"> iPads Anthology Rubric <p>Procedure:</p> <ol style="list-style-type: none"> Continue to draw numbers at random to determine the order of presentations. Have students use the Writing a Creation Myth Rubric to evaluate each other's work. <p>Assessment:</p> <ol style="list-style-type: none"> Use the Writing a Creation Myth Rubric to evaluate each presentation. Collect all rubrics to determine final evaluation for the unit. |

Hillsboro-Deering Middle School

5 days, beginning at Week 3 of the Geomythology Unit, repeated 3 times for 100 7th & 8th students

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|--|---|--|--|---|---|
| <p>Week 3 (supporting Week 3 of the Geology unit)</p> <p>Learning Standards:</p> <ul style="list-style-type: none"> Curriculum Standard 1 : Apply appropriate media, techniques, and processes. Curriculum Standard 2 : Identify and apply the elements of visual art and principles of design. Curriculum Standard 5 : Analyze, interpret and evaluate their own and others' artwork. Curriculum Standard 7 : Understand the range of careers in the field of visual arts and identify | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Define geomythology Define a creation myth Define geology Explain the relationship between mythology and geology Identify an artifact <p>Materials:</p> <ul style="list-style-type: none"> PowerPoint presentation Project Rubric iPads <p>Procedure:</p> <ol style="list-style-type: none"> Share the presentation "An Introduction to Geomythology." Discuss the project: An Artifact Expert." Explain that they will produce an advertising document designed to persuade visitors to the Museum of Native American History in Washington, D.C., to seek and observe their chosen artifacts. Distribute copies of the Project rubric to discuss as a class. Have students visit http://americanindian.si.edu/searchcollections/results.aspx?&culid=481&page=0 to see examples of artifacts from the Abenaki people. Have students work in pairs. Tell pairs to choose an artifact to | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Conduct research Record notes Use a Project Rubric as a guide in developing an original advertising document <p>Materials:</p> <ul style="list-style-type: none"> Project Rubric iPads <p>Procedure:</p> <ol style="list-style-type: none"> Give students class time to research their artifact and record notes about the artifact and its cultural importance. Remind students to refer to their Project Rubric frequently while they work. <p>Assessment:</p> <ol style="list-style-type: none"> Assist students in the research process, as necessary. | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Use a digital application to create an advertising document Import a digital image into a document <p>Materials:</p> <ul style="list-style-type: none"> Project Rubric iPads Pages for iPad <p>Procedure:</p> <ol style="list-style-type: none"> Have student pairs begin a Pages document for their project. Have students capture and import a digital image of their artifact into the Pages document. Assist students in creating a design layout that includes the imported image, text, and creative elements of the students' choosing. <p>Assessment:</p> <ol style="list-style-type: none"> Assist students, as necessary. | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Present an original digital project Use a rubric to evaluate the work of others <p>Materials:</p> <ul style="list-style-type: none"> Project Rubric iPads <p>Procedure:</p> <ol style="list-style-type: none"> Review the Project Rubric as a class. Assign each pair of students a number. Draw numbers at random to determine the project presentation order. Have students present their projects and evaluate the work of other students. <p>Assessment:</p> <ol style="list-style-type: none"> Use the Project Rubric to evaluate the presentations. | <p>Objective(s): Students will</p> <ul style="list-style-type: none"> Present an original digital project <p>Materials:</p> <ul style="list-style-type: none"> Project Rubric iPads <p>Procedure:</p> <ol style="list-style-type: none"> Continue drawing students' names at random to determine the project presentation order. Have students present their projects and evaluate the work of other students. <p>Assessment:</p> <ol style="list-style-type: none"> Collect all project evaluations to determine students' final scores. |

careers
associated
with this field.

study further for their project.
Students may begin researching
their chosen artifact.

Assessment:

1) Assist students in the research
process, as necessary.

Geology Field Notebook

Teacher Name: **Mrs. Sychterz**

Student Name: _____

| CATEGORY | 4 | 3 | 2 |
|-------------------------|---|--|---|
| Materials | All materials and setup used in the experiment are clearly and accurately described. | Almost all materials and the setup used in the experiment are clearly and accurately described. | Most of the materials and the setup used in the experiment are accurately described. |
| Procedures | Procedures are listed in clear steps. Each step is numbered and is a complete sentence. | Procedures are listed in a logical order, but steps are not numbered and/or are not in complete sentences. | Procedures are listed but are not in a logical order or are difficult to follow. |
| Experimental Hypothesis | Hypothesized relationship between the variables and the predicted results is clear and reasonable based on what has been studied. | Hypothesized relationship between the variables and the predicted results is reasonable based on general knowledge and observations. | Hypothesized relationship between the variables and the predicted results has been stated, but appears to be based on flawed logic. |

| | | | |
|-------------------------|---|---|--|
| Analysis | The relationship between the variables is discussed and trends/patterns logically analyzed. Predictions are made about what might happen if part of the lab were changed or how the experimental design could be changed. | The relationship between the variables is discussed and trends/patterns logically analyzed. | The relationship between the variables is discussed but no patterns, trends or predictions are made based on the data. |
| Data | Professional looking and accurate representation of the data in tables and/or graphs. Graphs and tables are labeled and titled. | Accurate representation of the data in tables and/or graphs. Graphs and tables are labeled and titled. | Accurate representation of the data in written form, but no graphs or tables are presented. |
| Drawings/Diagrams | Clear, accurate diagrams are included and make the experiment easier to understand. Diagrams are labeled neatly and accurately. | Diagrams are included and are labeled neatly and accurately. | Diagrams are included and are labeled. |
| Conclusion | Conclusion includes whether the findings supported the hypothesis, possible sources of error, and what was learned from the experiment. | Conclusion includes whether the findings supported the hypothesis and what was learned from the experiment. | Conclusion includes what was learned from the experiment. |
| Appearance/Organization | Lab report is typed and uses headings and subheadings to visually organize the material. | Lab report is neatly handwritten and uses headings and subheadings to visually organize the material. | Lab report is neatly written or typed, but formatting does not help visually organize the material. |

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| 1 |
| Many materials are described inaccurately OR are not described at all. |
| Procedures do not accurately list the steps of the experiment. |
| No hypothesis has been stated. |

The relationship between the variables is not discussed.

Data are not shown OR are inaccurate.

Needed diagrams are missing OR are missing important labels.

No conclusion was included in the report OR shows little effort and reflection.

Lab report is handwritten and looks sloppy with cross-outs, multiple erasures and/or tears and creases.

Geology Field Notebook

Teacher Name: **Mrs. Sychterz**

Student Name: _____

| CATEGORY | 4 | 3 | 2 | 1 |
|-------------------------|---|--|---|---|
| Materials | All materials and setup used in the experiment are clearly and accurately described. | Almost all materials and the setup used in the experiment are clearly and accurately described. | Most of the materials and the setup used in the experiment are accurately described. | Many materials are described inaccurately OR are not described at all. |
| Procedures | Procedures are listed in clear steps. Each step is numbered and is a complete sentence. | Procedures are listed in a logical order, but steps are not numbered and/or are not in complete sentences. | Procedures are listed but are not in a logical order or are difficult to follow. | Procedures do not accurately list the steps of the experiment. |
| Experimental Hypothesis | Hypothesized relationship between the variables and the predicted results is clear and reasonable based on what has been studied. | Hypothesized relationship between the variables and the predicted results is reasonable based on general knowledge and observations. | Hypothesized relationship between the variables and the predicted results has been stated, but appears to be based on flawed logic. | No hypothesis has been stated. |
| Analysis | The relationship between the variables is discussed and trends/patterns logically analyzed. Predictions are made about what might happen if part of the lab were changed or how the experimental design could be changed. | The relationship between the variables is discussed and trends/patterns logically analyzed. | The relationship between the variables is discussed but no patterns, trends or predictions are made based on the data. | The relationship between the variables is not discussed. |
| Data | Professional looking and accurate representation of the data in tables and/or graphs. Graphs and tables are labeled and titled. | Accurate representation of the data in tables and/or graphs. Graphs and tables are labeled and titled. | Accurate representation of the data in written form, but no graphs or tables are presented. | Data are not shown OR are inaccurate. |
| Drawings/Diagrams | Clear, accurate diagrams are included and make the experiment easier to understand. Diagrams are labeled neatly and accurately. | Diagrams are included and are labeled neatly and accurately. | Diagrams are included and are labeled. | Needed diagrams are missing OR are missing important labels. |
| Conclusion | Conclusion includes whether the findings supported the hypothesis, possible sources of error, and what was learned from the experiment. | Conclusion includes whether the findings supported the hypothesis and what was learned from the experiment. | Conclusion includes what was learned from the experiment. | No conclusion was included in the report OR shows little effort and reflection. |
| Appearance/Organization | Lab report is typed and uses headings and subheadings to visually organize the material. | Lab report is neatly handwritten and uses headings and subheadings to visually organize the material. | Lab report is neatly written or typed, but formatting does not help visually organize the material. | Lab report is handwritten and looks sloppy with cross-outs, multiple erasures and/or tears and creases. |