

Before and After Stories

Language Arts

Grade Levels 4 and up

Objectives: In order to understand the essential question of, “How can we read a photograph to find clues about what happened before and after the photograph was taken?” students describe photographs with “active” themes and hypothesize about what happened before and after, then sketch a visual storyboard that solidifies their ideas about the past and future. Storyboards build narratives around single photos and display easily. *Time Needed: 2-3 hours*

Vermont’s Framework of Standards and Learning Opportunities:

1.9 Narratives (organize and relate a series of events, fictional or actual, in a coherent whole)

2.11 Elaboration (students represent their ideas in detailed form)

Grade Level Expectations:

Narratives W5:11 and W5:12 (relate a story line plot/series of events and demonstrate use of narrative strategies)

Interdisciplinary Connections: Predicting and Hypothesizing skills (S5-6:2) used in science.

Materials & Resources:

Landscape Change Program Archive, www.uvm.edu/perkins/landscape

Images: LS11355, LS06939, LS07022, LS10713, and LS10212 (or others)

Cat and Spaghetti Photograph (from “Life Smiles Back: More than 200 Classic Photos from the

Famous Back Page of America’s Favorite Magazine” by Philip B. Kunhardt, Jr., 1988)

“Reading a Photo” Worksheet (attached)

Sample Storyboards (found on-line)

Storyboard Template sheet (attached)

Activities:

<p>1. Hook Your Students</p> <p>Students view “Cat and Spaghetti” photo and write one sentence about what they think happened before and after. Highlight different responses in group discussion.</p>	<p>4. Culminating Activity</p> <p>Students display their storyboards for a peer “Museum Walk” and discuss each other’s work.</p>
<p>2. Introduce Concepts</p> <p>A photograph is one parcel of time. The class uses visual clues and prior knowledge to “read” photographs from the <i>Landscape Change Program</i> using a worksheet (below).</p>	<p>5. Assessment</p> <p>Storyboard (or narrative) evaluated on elements of organization, relevance to photograph, and creativity.</p>
<p>3. Apply Skills</p> <p>Students independently “read” 1 of 4 photographs, fill out worksheets and discuss with peers. <i>Homework:</i> Use template (below) to sketch a narrative storyboard with “read” photo as one of the frames.</p>	<p>6. Extensions</p> <p>Create written narratives around photographs, using storyboards as a starting point.</p>

Author: Alison Novak, Lawrence Barnes Elementary School. **Specialty:** Language Arts.

I See Dead People (and So Much More)

Digital Stories

Grade Levels 5-8

Objectives: In order to understand the essential question of, “How has our community changed over time?” students study the physical, cultural, and ecological landscape. Students predict, use text and media resources, reflect on initial predictions, make hypotheses, and find evidence to support their hypotheses. Students create digital stories with integrated images and recorded narration, and share their learning about community.

Time Needed: 7 hours

Vermont’s Framework of Standards and Learning Opportunities:

5.13: Responding to Text (Analysis and Interpretation of Informational Text/Citing Evidence)

1.19: Research (Use organizational skills to obtain information from various sources)

Grade Level Expectations:

W8: 8 In reports, students organize information/concepts by...

- Drawing a conclusion by synthesizing information
- Obtaining information from multiple locations or sources when appropriate

H&SS7-8:2 Students develop a hypothesis, thesis or research statement by ...

- Predicting results, or exploring relationships

IT1-2:4 Students demonstrate the use of a variety of media and formats to communicate information and ideas effectively to multiple audiences

Materials & Resources:

Landscape Change Program Archive, www.uvm.edu/landscape

Anticipation Guide (below)

“Your Task” checklist (below)

Microsoft Photo Story software or similar, such as *iMovie* or *Microsoft Movie Maker* (see example digital story link below)

Activities:

1. Hook Your Students Students view a digital story that poses and answers one question from the <i>Anticipation Guide</i> (below). The story serves as a model and a hook.	4. Culminating Activity Students share digital stories with classmates. <i>Option:</i> Students write essays to reflect upon their learning.
2. Introduce Concepts Students complete an <i>Anticipation Guide</i> designed to elicit prior knowledge and inspire further inquiry (below).	5. Assessment Digital Story Rubric (below) and all students return to their <i>Anticipation Guides</i> to revise their answers to reflect new learning from the work of classmates.
3. Apply Skills Students explore assigned readings and PowerPoints, make informed predictions, select one strand for further study, explore the <i>Landscape Change Program</i> archive for 3 to 5 images and create a 2-minute digital story with narration.	6. Extensions Class selects most effective digital stories to be shared out to the community. This could include posting on the <i>Landscape Change Program</i> website.

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Rocks, Redox, and Remediation

Mining in Vermont

Grade Levels 9-12

Objectives: In order to understand the essential question of, “How do human activities affect the environment?” students study historic images of copper mining in Vermont. Students learn about the process of copper extraction, copper smelting (laboratory), and the environmental impacts. Students study the EPA and its Superfund program, and learn about the management of the environmental impacts of the Ely Mine Superfund site.

Time Needed: 4 hours

Vermont’s Framework of Standards and Learning Opportunities:

7.16 Natural Resources (resource extraction, distribution, processing, and disposal)

7.15 Theories, Systems, and Forces (interactions of humans, resources, and the environment)

7.12 Matter, Motion, Forces, and Energy (observe/measure chemical properties & reactions)

Grade Level Expectations:

Chemical Change S9-12:15 (balance chemical equations and predict reactants and products)

Materials & Resources:

Landscape Change Program Archive, www.uvm.edu/landscape, Image LS11771_000 “Ely Mining House,” for example.

EPA’s Superfund website, <http://www.epa.gov/superfund/index.htm> and other web and print resources (below)

Computer Projector for displaying images from the archive for the whole class

Environmental Impact Discussion Prompt List (below)

Superfund Question List (below)

Activities:

<p>1. Hook Your Students</p> <p>Students examine a dramatic image of a Vermont mine, develop questions about it, and search the <i>Landscape Change Archive</i> for answers.</p>	<p>4. Culminating Activity</p> <p>Students prepare and submit comments to the <i>Landscape Change</i> website, explaining the chemistry of roasting and smelting, and the environmental impacts of mining.</p>
<p>2. Introduce Concepts</p> <p>Students discover how they use copper in their own lives and how copper is produced (chemistry laboratory smelting reaction).</p>	<p>5. Assessment</p> <p><i>Formative:</i> Discussions and homework assignments provide opportunities for adaptation of lessons. <i>Summative:</i> Rubric (below) for culminating activity.</p>
<p>3. Apply Skills</p> <p>Students write and then balance a formula for the smelting reaction they have witnessed. Students examine photographs and chemical formulas for evidence of environmental impacts, and discuss local versus global environmental impacts.</p>	<p>6. Extensions</p> <ul style="list-style-type: none">• Explore acid-base reactions (sulfides increase metal contamination). Include lab activity and compare with previous redox reactions.• Research bioremediation of toxicity at mine sites. Follow up by creating a living machine in the classroom.

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