









# 10 SUGGESTED ACTIVITIES

Use the activities below as discrete lessons or as the basis for an entire curriculum. The activities correspond to the Pennsylvania Dept. of Education *Academic Standards for the Arts and Humanities*, with opportunities for science, math, and history connections marked by a web symbol (🌐). Detailed directions for building a camera obscura or pinhole camera are readily available online (see referenced websites). Lessons requiring darkroom access are marked with a camera (📷). The activities were conceived by Jenna Webster and Tina Zavitsanos of The Print Center.

ACTIVITY	OBJECTIVES	STANDARDS	SUGGESTED SUPPLIES	RESOURCES
<p><b>1. CAMERA OBSCURA CLASSROOM:</b> Transform a room, closet, box, or other contained space into a camera obscura. Use lenses to brighten and focus the image. Discuss what kind of image is obtained and why and how it can be further manipulated. Challenge students to conceive of and implement ways to record the image.</p>	<p>1. Acquaint students with the camera obscura phenomenon. 2. Provide students with an understanding of the optical foundation for photography.</p>	<p><i>Production 9.1 - C, H, J</i></p> <p style="text-align: center;">🌐</p>	<ul style="list-style-type: none"> <li>• Black poster board or trash bags to cover light sources</li> <li>• Tape (duct, electrician, gaffer, etc.)</li> <li>• Scissors</li> <li>• Aperture materials, if desired</li> <li>• Lens to brighten the image, if desired (magnifying glass, old camera lens, overhead projector lens, etc.)</li> <li>• White paper for viewing image</li> </ul>	<ul style="list-style-type: none"> <li>• The Sky in a Room &lt;<a href="http://www.funsci.com/fun3_en/sky/sky.htm">www.funsci.com/fun3_en/sky/sky.htm</a>&gt;</li> </ul>
<p><b>2. CAMERA OBSCURA DRAWINGS:</b> Build a box-style camera obscura modeled on those used by artists such as Vermeer and Canaletto. Make a series of landscape or cityscape drawings, refining image sharpness and experimenting with light conditions and perspective. Discuss recent scholarly theories on how and why this tool was used. To extend the lesson, use the drawings as preparatory studies for finished paintings or prints. Room-sized camera obscura images could serve as a backdrop for dramatic productions.</p>	<p>1. Build and use a historic artist tool to produce a series of drawings. 2. Become familiar with contemporary debates about historic artistic uses of the camera obscura.</p>	<p><i>Production 9.1 - C, H, J</i> <i>Contexts 9.2 - B, C, D, E</i> <i>Critical Response 9.3 - G</i> <i>Aesthetic Response 9.4 - D</i></p> <p style="text-align: center;">🌐</p>	<ul style="list-style-type: none"> <li>• Container for camera obscura</li> <li>• Lens</li> <li>• Mirrors to reorient the camera obscura image</li> <li>• Frosted plexi or glass tracing surface</li> <li>• Drawing materials</li> </ul>	<ul style="list-style-type: none"> <li>• Camera Obscura: Aristotle to Zahn &lt;<a href="http://www.acmi.net.au/AIC/CAMERA_OBSCURA.html">www.acmi.net.au/AIC/CAMERA_OBSCURA.html</a>&gt;</li> <li>• David Hockney, <i>Secret Knowledge: Rediscovering the Secrets of the Old Masters</i> (Viking Studio, 2001)</li> </ul> <p>Also see online directions for building an artist's camera obscura.</p>
<p><b>3. CRITICAL RESPONSE ESSAYS:</b> Hold a group discussion exploring the formal, technical and conceptual aspects of the camera obscura photographs in <i>Taken with Time</i>. Students write response essays, citing evidence for their interpretations in their selected images.</p>	<p>1. Analyze contemporary visual art according to form, technique, and concept. 2. Develop a written critical response to <i>Taken with Time</i> photographs.</p>	<p><i>Critical Response 9.3- A, B, C</i></p>	<ul style="list-style-type: none"> <li>• <i>Taken with Time</i> CD of exhibition photographs</li> <li>• Pens, paper</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Taken with Time</i> web site &lt;<a href="http://www.printcenter.org/pc_exhibition_twt.html">www.printcenter.org/pc_exhibition_twt.html</a>&gt;</li> <li>• <i>Taken with Time</i> exhibition guide</li> </ul> <p>Also see p. 5 of this guide.</p>

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<p><b>4. CAMERA OBSCURA BOOTH:</b> Design and build a camera obscura for use by the whole school. Consider issues of entertainment, pedagogy, and surveillance. Students can serve as guides and monitors of the booth. Arrange times when photographs or hand-drawn images are made. Exhibit images. Document the installation. Create an online component.</p>	<p>1. Design and build a publicly viewable camera obscura. 2. Familiarize students with the history of the camera obscura as a form of entertainment. 2. Produce a series of drawings or photographs (if desired)</p>	<p><i>Production 9.1 - A, B, J, K</i> <i>Contexts 9.2 - F</i></p> 	<p>See Activity 1.</p>	<ul style="list-style-type: none"> <li>• <i>Platrix</i> project on <i>Taken with Time</i> CD</li> <li>• The Magic Mirror of Life &lt;brightbytes.com&gt;</li> <li>• Jonathan Crary, <i>Techniques of the Observer: On Vision and Modernity in the Nineteenth Century</i> (MIT Press, 1999)</li> </ul>
<p><b>5. CAMERA OBSCURA &amp; PLATO'S CAVE:</b> Discuss Plato's "Allegory of the Cave" and the camera obscura phenomenon. Draw and defend parallels. To extend the activity, use the discussion to generate camera obscura images to illustrate Plato's text or a contemporary version, with text written and conceived by students.</p>	<p>1. Draw connections between the camera obscura phenomenon and a classic philosophical text. 2. Illustrate and expand upon a classic philosophical text (if desired).</p>	<p><i>Production 9.1 - C, E</i> <i>Contexts 9.2 - I</i></p> 	<ul style="list-style-type: none"> <li>• Plato's "Allegory of the Cave" (excerpts available online)</li> </ul> <p>If making images, see Activity 1 or 7.</p>	<ul style="list-style-type: none"> <li>• Plato, "Allegory of the Cave," <i>The Republic</i> (Book VII)</li> <li>• <i>Platrix</i> project on <i>Taken with Time</i> CD</li> <li>• Paleo-Camera Theory &lt;www.paleo-camera.com&gt;</li> </ul>
<p><b>6. CAMERA OBSCURA TIMELINE:</b> Create a timeline charting artistic, scientific, and cultural uses of the camera obscura. Note thematic and technical connections to <i>Taken with Time</i> photographs.</p>	<p>1. Visualize the historical context of the camera obscura. 2. Provide a broad framework with which to understand photographs in <i>Taken with Time</i>.</p>	<p><i>Contexts 9.2 - B, E, G, J</i></p> 	<p>Consider using multiple media or interactive components. Possible formats could include a mural, a book, a website, or even a performance.</p>	<ul style="list-style-type: none"> <li>• Camera Obscura: Aristotle to Zahn &lt;www.acmi.net.au/AIC/CAMERA_OBSCURA.html&gt;</li> <li>• David Hockney, <i>Secret Knowledge: Rediscovering the Secrets of the Old Masters</i> (Viking Studio, 2001)</li> </ul>
<p><b>7. PINHOLE CAMERAS:</b> Make pinhole cameras (a light-tight camera obscura without a lens) using household materials. Experiment with camera body materials, aperture size, and exposure time. Challenge students to create an exposure chart for given light conditions.</p> 	<p>1. Learn the basics of photography using household materials to make an operable camera.</p>	<p><i>Production 9.1 A, B, H</i></p> 	<ul style="list-style-type: none"> <li>• Container made light tight (oatmeal box, film canister, cookie tin, etc.)</li> <li>• Tape, glue, scissors, x-acto knife</li> <li>• Materials to make apertures &amp; shutters</li> <li>• Photographic paper &amp; developing &amp; printing materials</li> </ul>	<ul style="list-style-type: none"> <li>• Oatmeal Box Pinhole Cameras &lt;users.rcn.com/stewwoody/makecam.htm&gt;</li> <li>• How to Make a Pinhole Camera &lt;www.wandascott.com&gt;</li> <li>• Pinholes &lt;www.tufts.edu/as/wright_center&gt;</li> </ul>
<p><b>8. PINHOLE SELF-PORTRAITS:</b> Produce a series of self-portraits using pinhole cameras. Ask students to convey personal themes such as pride or fear. As a group, analyze formal, thematic, and conceptual elements of the images. Extend the activity by having students make portraits of their communities.</p> 	<p>1. Learn the basics of photography. 2. Produce a series of themed self-portraits. 3. Discuss formal and thematic elements.</p>	<p><i>Production 9.1 - A, B, E, H</i> <i>Critical Response 9.3 - A, B, E</i></p>	<p>See Activity 7.</p>	<p>See Activity 7.</p>

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<p><b>9. IMAGE SEQUENCING EXERCISE</b> As a class, use a camera obscura or pinhole camera to make a series of photographs. Provide each student with copies of the images. Students work independently to assemble the images into an order of their choosing. Encourage students to consider narrative and image juxtapositions. Ask students to articulate their sequencing choices. If desired, students can incorporate text and assemble into books.</p> 	<p>1. Learn the basics of photography. 2. Create and be able to articulate formal, thematic, and conceptual relationships between a set of images.</p>	<p><i>Production 9.1 - A, B, E, H</i></p>	<p>See Activity 7.</p>	<p>See Activity 7.</p>
<p><b>10. PINHOLE PHOTO DAY:</b> Participate in International Pinhole Photography day (the last Sunday in April). Students make cameras, produce images, refine results, and mount finished images online (see web site listed). Students might also make cameras for use by other students in the school. Start a festival at your school.</p> 	<p>1. Learn the basics of photography. 2. Participate in an international photography project.</p>	<p><i>Production 9.1 - A, B, H</i></p>	<p>See Activity 7.</p>	<ul style="list-style-type: none"> <li>• Worldwide Pinhole Photo Day &lt;<a href="http://www.pinholeday.org">www.pinholeday.org</a>&gt;</li> </ul> <p>Also see Activity 7.</p>