



PRESERVATION EDUCATION CURRICULUM



NORTHEAST
DOCUMENT
CONSERVATION
CENTER

CLASS 4 LESSON PLAN

Structure and Deterioration of Multimedia Materials

Resources for the Teacher

Presentation of nonpaper media preservation is a challenge to the instructor because the various media differ in so many ways, and what is known about their composition, production, and longevity varies per medium type as well. Film photography technology is very well known and well supported by standards to ensure its longevity; but the same cannot be said for magnetic media or digitally captured media, for which there are fewer established standards to support their preservation and reformatting. Thus, it is essential for the instructor to check the literature in this area on a regular basis to stay current.

General

Dalton, Susan. "Moving Images: Conservation and Preservation." In *Conserving and Preserving Materials in Non-book Formats*, edited by Kathryn L. Henderson and William T. Henderson. Papers presented at the Allerton Park Institute, Urbana-Champaign, Ill.: Board of Trustees, 1991, pp. 61–72.

This essay provides a valuable introduction to the topic of moving image preservation. The author offers a general overview of both film and video formats, including brief descriptions of how these technologies emerged, and relates their development to the preservation problems inherent in commercially driven product development.

Gracy, Karen F., and Michèle Valerie Cloonan. "The Preservation of Moving Images." In *Advances in Librarianship* 27 (2004): 49–95.

The challenge of moving image preservation for libraries, archives, and other cultural institutions is astutely presented by these authors and provides a context for the emergence of moving image preservation as a profession. Long-term and short-term preservation strategies are discussed as well the potential conflicts that arise when access to moving image materials is needed. The authors include both motion picture film and video in their discussion and provide a solid overview of the issues involved in their preservation.

Stewart, Eleanore, and Paul N. Banks. "Preservation of Information in Nonpaper Formats." In *Preservation: Issues and Planning*, edited by Paul N. Banks and Roberta Pilette. Chicago: American Library Association, 2000, pp. 323–41.

A basic introduction to the preservation challenges posed by the wide range of newer media found in libraries and archives, and to the preservation issues resulting from the rapid move toward digitization in recent years. Environmental control, handling, use, copying, migration, refreshment, and management issues for media collections are discussed in general. Separate sections on still photographs, motion pictures, sound recordings, video recordings, computer data media, and

computer output media provide a brief description of formats and basic recommendations for storage, handling, use, and reformatting.

Photographic Film—Still Images and Motion Picture Film

Albright, Gary. "Storage Enclosures for Photographic Materials." In *Preservation of Library and Archival Materials*. Andover, Mass.: Northeast Document Conservation Center, 2008. Also available at http://nedcc.org/resources/leaflets/4Storage_and_Handling/11StorageEnclosures.php

This short but very valuable essay provides the reader with essential information for understanding storage choices for both photographic prints and negatives.

Coe, Brian, and Mark Haworth-Booth. *A Guide to Early Photographic Processes*. London: Victoria and Albert Museum, 1983.

An illustrated guide for the identification of photographic processes used between 1840 and 1914 to produce still images. Treatment information is also included.

The Film Preservation Guide: The Basics for Archives, Libraries, and Museums. San Francisco: National Film Preservation Foundation, 2004.

Aimed directly at an audience of cultural institutions, this guide offers thorough instructions for identifying motion picture film and film gauges and explains how they decay and how they should be handled, inspected, stored, cataloged, loaned, and distributed. There is also a section on copyright that includes information on donor agreements.

Gracy, Karen. "Documenting the Process of Film Preservation." *The Moving Image* 3, no. 1 (Spring 2003): 1–41.

The author presents a very practical and thorough account of the individual steps involved in film preservation. Decision-making criteria are integrated within the preservation process to add context to the array of procedures from selection of films, at the beginning, to access, the final objective.

Hendricks, Klaus B. "The Preservation, Storage, and Handling of Black-and-White Photographic Records." In *Conserving and Preserving Materials in Non-book Formats*, edited by Kathryn L. Henderson and William T. Henderson. Papers presented at the Allerton Park Institute, Urbana-Champaign, Ill.: Board of Trustees, 1991, pp. 91–104.

The author addresses the chemical and physical properties of black-and-white photographic materials and the causes of their deterioration. Basic information regarding the influences of environmental conditions, use and handling, storage, and disaster planning is provided.

Mann, Sarah Ziebell. "The Evolution of American Moving Image Preservation: Defining the Preservation Landscape (1967–1977)." *The Moving Image* 1, no. 2 (Fall 2001): 1–20.

This article traces the history of moving image preservation from 1967 through 1977 and places film preservation efforts in context. It is essential reading for anyone interested in the background and beginnings of film preservation.

Read, Paul, and Mark-Paul Meyer, eds. *Restoration of Motion Picture Film*. Oxford: Butterworth/Heinemann, 2000.

This valuable contribution to motion picture film preservation follows a textbook approach to film preservation, but more from the motion picture film industry perspective than from a preservation perspective. That bias aside, the book contains a vast amount of technical information that is valuable for a deeper understanding of film restoration.

Reilly, James. *Care and Identification of 19th Century Photographic Prints*. Rochester, N.Y.: Eastman Kodak, 1986.

A detailed history of photographic processes used in still photography is described to familiarize readers with the characteristics of the many types of photographic prints and negatives likely to be found in cultural collections. Each type of photographic process is treated according to its placement in a time line of photographic history, and their component materials and physical characteristics are described in detail. Other chapters address the stability of prints and negatives, their preservation needs, and collection management issues. An identification chart is included to aid readers in identifying specific photographic processes.

Wilhelm, Henry, and Carol Brower. *The Permanence and Care of Color Photographs: Traditional and Digital Color Prints, Color Negatives, Slides, and Motion Pictures*. Grinnell, Iowa: Preservation Publishing Company, 1993.

A hefty resource on color permanence, this text describes various color processes and the preservation problems commonly associated with them and much more. Wilhelm delves deeply into light fading and dark fading, the effects of adhesives and laminates, proper storage and environmental conditions, humidity-controlled cold storage, and freezing of color photographic materials. Students should be aware of this resource but do not necessarily need to read it from cover to cover.

Sound Recordings

Brylawski, Samuel. "Preservation of Digitally Recorded Sound." In *Building a National Strategy for Preservation: Issues in Digital Media Archiving*. Washington, D.C.: Council on Library and Information Resources, April 2002.
<http://www.clir.org/pubs/reports/pub106/sound.html>

Brylawski discusses the path leading to digitization as the only logical reformatting choice for audio materials. This is an excellent primer on the issues surrounding digital conversion of audio materials and includes such topics as management of digital audio objects, copyright, metadata, standards, and distribution.

Gibson, Gerald D. "Preservation and Conservation of Sound Recordings." In *Conserving and Preserving Materials in Non-book Formats*, edited by Kathryn L. Henderson and William T. Henderson. Papers presented at the Allerton Park Institute, Urbana-Champaign, Ill.: Board of Trustees, 1991, pp. 27–44.

This well-written essay offers an accessible introduction to the topic for students. The author provides a complete and very thoughtful account of the importance of sound recordings to our cultural heritage and the unique vulnerabilities they suffer owing to their material composition, physical format, and playback requirements. All types of sound recordings are covered, including magnetic audio tape, and there are appendixes in which the author has compiled valuable facts about these materials, such as "Weight and Space Requirements for Audio Materials."

Library of Congress. *Cylinder, Disc and Tape Care in a Nutshell*. Washington, D.C.: Library of Congress, 2002. <http://www.loc.gov/preserv/care/record.html>

As indicated by the title, this Web site presents information related to the care and handling of sound recordings in a concise, easily accessible form.

St-Laurent, Gilles. *The Care and Handling of Recorded Sound Materials*. Washington, D.C.: Commission on Preservation and Access, September 1991.

This booklet provides basic information about the care and handling of sound recordings, similar to the Library of Congress Web site above, but in a hard-copy format.

Audio and Video Magnetic Media

Davidson, Steven, and Gregory Lukow, eds. *The Administration of Television Newsfilm and Videotape Collections: A Curatorial Manual*. Los Angeles: American Film Institute, 1997.

The editors of this publication compiled 14 chapters written by experts in the field of television newsfilm and videotape for this manual. It is ideally suited for the curator, as well as the student of moving image preservation, as it provides both history and context for this unique genre of moving images. The traditional spectrum of collection management issues, such as appraisal, arrangement and description, cataloging, and preservation, is presented in practical terms and includes illustrations of equipment and supplies needed to view, handle, and store these materials.

Edmondson, Ray. *Audiovisual Archiving: Philosophy and Principles*. Paris: UNESCO, April 30, 2004 (CI/2004/WS/2). <http://unesdoc.unesco.org/images/0013/001364/136477e.pdf>

This thorough analysis of audiovisual archiving includes a thoughtful introduction to the topic, followed by a section on definitions and terminology. The author addresses the archival principles involved in audiovisual preservation, access, cataloging, collection development, collection management, and ethics, all within the context of a wide range of cultural settings.

Messier, Paul, and Timothy Vitale. "Video Preservation Website."

<http://videopreservation.stanford.edu/index.html>

This site, hosted by Stanford University, was launched in 2007 with support from the National Center for Preservation Training and Technology and the Bay Area Video Coalition. It includes sections on techniques for preserving historic video, a video format identification guide (the Messier/Stauderman guide referenced elsewhere in this lesson), an online museum of historic video equipment, and a library of resources on video preservation.

Stauderman, Sarah. *Pictorial Guide to Sound Recording Media*. In *Proceedings from the Sound Savings: Preserving Audio Collections Symposium*. Association of Research Libraries, July 24–26, 2003. http://www.arl.org/preserv/sound_savings_proceedings/Pictorial_guide.shtml

A text version of a Web site of the same name that is not currently available.

Van Bogart, Dr. John W. C. *Magnetic Tape Storage and Handling: A Guide for Libraries and Archives*. Washington, D.C.: Commission on Preservation and Access, June 1995, 34 pp.

<http://www.clir.org/pubs/reports/pub54/index.html>

Straightforward and concise, this guide contains basic information for the care of magnetic materials in a general context. The material is conveyed in nontechnical language easily understood in layperson's terms.

Videotape Identification and Assessment Guide, provided by the Texas Commission on the Arts.
<http://www.arts.state.tx.us/video>

This excellent Web site is a rich and thorough resource for information on videotape, its history, time line, storage, handling, and condition assessment, and it provides helpful identification information.

Optical Media

Iraci, Joe. "The Relative Stabilities of Optical Disc Formats." *Restaurator* 26 (2005):134–50.

Iraci describes the structure and stability of optical discs, includes illustrations, and reports the findings of his research study on the topic. The author describes various optical disc formats and how they are produced. Physical characteristics, causes of damage, and typical preservation problems are reported based on tests conducted by the author as part of a research study.

Useful Web Sites

Australia National Film and Sound Archive. *How to Care for Your Film*.
http://www.nfsa.afc.gov.au/preservation/care_audiovisual/care_for_film.html

"Film Forever: The Home Film Preservation Guide," sponsored by the Association of Moving Image Archivists (AMIA). <http://www.filmforever.org/>

Little Film. See the description of film gauges, <http://www.littlefilm.org/>

Messier, Paul, and Timothy Vitale. "Video Preservation Website."
<http://videopreservation.stanford.edu/index.html>

This site, hosted by Stanford University, was launched in 2007 with support from the National Center for Preservation Training and Technology and the Bay Area Video Coalition. It includes sections on techniques for preserving historic video, a video format identification guide (the Messier/Stauderman guide referenced elsewhere in this lesson), an online museum of historic video equipment, and a library of resources on video preservation.

Museum of the Moving Image. See the "Shutters, Sprockets, and Tubes" section.
<http://www.movingimage.us/site/online/index.html>

Videotape Identification and Assessment Guide, sponsored by the Texas Commission on the Arts.
<http://www.arts.state.tx.us/video>

This excellent Web site is a rich and thorough resource for information on videotape, its history, time line, storage, handling, and condition assessment, and it provides helpful identification information.

Vidipax. <http://www.vidipax.com/>

Wheeler, Jim. *Videotape Preservation Handbook*, 2002.
<http://www.amianet.org/resources/guides/WheelerVideo.pdf>