
Storage Media Conversion Kit

Introduction

Data storage formats have evolved rapidly over the past 4+ decades, and many libraries and cultural heritage organizations have content stored on 3" floppy, zip, and writable compact disks - economical and easily produced/reproduced formats for their time, that have a finite life-span both in terms of physical degradation and accessibility as access and transfer technology becomes harder to come by and maintain. In order to retain the valuable content contained in these mediums, and improve access to it, it has to be migrated to new technology. The equipment contained in this kit allows for the creation of copies of content found on older storage mediums, suitable for display on the web for greater visibility.

Who is this kit for?

The kit is designed to be used by staff at libraries and cultural heritage organizations that wish to transfer content from 3" floppy, zip, and writable compact disks in order to extend online access to materials held in their collections, and contribute to the Plains to Peaks Collective (PPC) (and by extension the Digital Public Library of America (DPLA)).

Inside this binder

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- Generic CSV Import Template
- Kit contents (on the back cover of binder)
- Feedback Form (on clipboard)

Feedback

Please help us improve this kit by sharing your comments, experiences, and suggestions. You can contact Kit Support (kitsupport@coloradovirtuallibrary.org) at any point along your journey. When you return the kit, please fill out and include the Feedback Form found on the clipboard in the kit.

Loan period

Staff in Colorado libraries may check out kits directly from the State Library through the CSL AspenCat Catalog at <https://csl.catalog.aspen.cat.info/> for 2 months at a time and may renew if there is not a hold on that kit. The Storage Media Conversion Kit is available for loan to in-state, non-library organizations (e.g. museums, archives, etc), but special arrangements will need to be made for delivery and return. If you are interested in borrowing the kit, but are not a library (and thus not on the statewide courier system) contact Kit Support directly at KitSupport@coloradovirtuallibrary.org. Kits cannot be reserved for a specific date in the future and are not available for loan to out-of-state libraries or cultural heritage institutions at this time.

Returning the kit

As you prepare to return the kit, verify that it is complete using the Kit Contents checklist on the back cover of this binder. Be sure to include your completed Feedback Form so that we can improve the experience for everyone. We know that materials may get damaged in transit and in the course of routine use. If that happens to you, please contact Kit Support (kitsupport@coloradovirtuallibrary.org) and let us know right away!

Digitization Toolkit

Introduction

Digitization is not simply making a digital copy of an object. It is a process of collecting, reformatting, cataloging, storing, and sharing digital objects. There are many online resources that can help you understand the digitization process, and we certainly encourage you to explore them. However, if you are new to digitization, you may find that some online resources are overly complex for your immediate needs; that is why we created this toolkit, to help simplify some of the steps in this process. If you have questions about the content found in this guide, do not hesitate to contact Marisa Wood (mwood@coloradovirtuallibrary.org).

Digitization Steps

The digitization workflow can be broken down into four steps: Select, Digital Capture, Catalog and Share. Your organization will Select an appropriate collection to digitize, Digitally Capture the objects, Catalog your objects using metadata standards aligned with the PPC and Digital Public Library of America (DPLA), and finally, Share your digital collection via a Content Management System.

Further Reading on the Digitization Process

- [Self-Guided Curriculum for Digitization](#), DPLA, 2015
- [Digitization Guidelines](#), Federal Agencies Digital Guidelines Initiatives, 2018
- [Best Practices and Planning for Digitization Projects](#), WebJunction, 2012
- [Digitization Services Products and Services](#), National Archives Records Administration (NARA), accessed 4/16/18.

1 – Select

Selecting a collection to digitize is a multi-faceted process that takes into account copyright, the institution's collection development policy, and its current and potential users, among other factors. If this is your first digitization project, we recommend starting with a *single, manageable collection* that has special resonance with your community or that is historically significant. By starting with a focused, manageable project, you will develop a workflow and expertise that will help you with bigger projects in the future.

Further Reading on Selecting Collections

- [Selecting Content for a Digitization Project](#), DPLA, 2015
- [Selecting Research Collections for Digitization](#), Council on Library and Information Resources, 1998
- [A Framework of Guidance for Building Good Digital Collections](#), NISO, 2007

Copyright

Any digitization project should begin with a discussion of copyright and what your institution is able and willing to reproduce and make available online. There are many approaches to assessing and addressing copyright in digitization projects. Ultimately, copyright decisions are made by the contributing institution; your consultant at the State Library can discuss copyright questions with you but cannot provide legal counsel or similar recommendations.

For organizations new to digitization, it may be easiest to start with materials in the public domain. Another option is to digitize materials that are protected by copyright but with the appropriate permissions secured.

Quick References to Determine Copyright Status

- [Copyright Expiration Flow Chart](#)
- [Copyright Term and the Public Domain](#)

Further Reading on Copyright

- [Understanding Copyright](#), DPLA, 2015
- PA Digital video modules on copyright and rights statements
 - [Copyright 101](#) provides a basic introduction for library and information professionals considering copyright and rights issues in digitized cultural heritage collections.
 - [What is a Rights Statement](#) provides an overview of rights statements and their application for digitized cultural heritage collections.
- [Copyright and Cultural Institutions: Guidelines for Digitization for U.S. Libraries, Archives, and Museums](#), Peter B. Hirtle, Emily Hudson, & Andrew T. Kenyon, 2009.
- [Rightsstatements.org](#)
 - Webinar. RightsStatements.org: Why We Need It, What It Is (and Isn't) and What Does It Mean? [Part 1](#) and [Part 2](#)
 - [Society of American Archivists Guide to Implementing Rights Statements from Rightsstatements.org](#)
- [Artists Rights Society](#)
- [VAGA](#) – Representing visual artists' copyrights worldwide

2 – Digital Capture

Once you have selected your first collection, you will need to digitally capture your objects using the equipment contained in this kit, in accordance with the standards given below. Note that the recommendation for a master, or preservation copy, differs from the version of the object that will be routinely accessed by end users.

*** Note that the equipment offered in this kit facilitates the transfer of data that is already stored in a digital format only, Depending on the original capture specifications for the digital objects, achieving the recommended resolution may not be possible - i.e. the transfer of low resolution images from an older medium will not result in a higher quality image.**

Recommended Standards for Capture

Adapted from [BCR best practices](#), [FADGI: Creating and Archiving Born Digital Video](#), and [SIA: Recommended Preservation Formats for Electronic Records](#).

PHOTOGRAPHS			
	Master/Preservation	Access	Thumbnail
File Format	TIFF	JPEG	JPEG
Bit Depth	16 bit grayscale 48 bit color	8 bit grayscale 24 bit color	8 bit grayscale 24 bit color
Spatial Resolution	400 to 800 PPI	150 to 200 PPI	144 PPI
Spatial Dimensions	4000 to 8000 pixels across the long dimension, excluding mounts and borders	600 pixels across the long dimension	150 to 200 pixels across the long dimension
FILM (SLIDES AND NEGATIVES)			
	Master/Preservation	Access	Thumbnail
File Format	TIFF	JPEG	JPEG
Bit Depth	16 bit grayscale 48 bit color	8 bit grayscale 24 bit color	8 bit grayscale 24 bit color
Spatial Resolution	Resolution to be calculated from actual image format and/or dimensions - approx. 2800 PPI for 35mm originals	150 to 200 PPI	144 PPI
Spatial Dimensions	4000 to 8000 pixels	600 pixels across the	150 to 200 pixels

	across the long dimension, excluding mounts and borders	long dimension	across the long dimension
ARTWORK/3-DIMENSIONAL OBJECTS			
	Master/Preservation	Access	Thumbnail
File Format	TIFF	JPEG	JPEG
Bit Depth	48 bit color	24 bit color	24 bit color
Spatial Resolution	Device Maximum	300 PPI	144 PPI
Spatial Dimensions	100% of original	600 pixels across the long dimension	150-200 pixels across the long dimension
TEXT			
	Master/Preservation	Access	Thumbnail
File Format	TIFF	JPEG	JPEG
Bit Depth	1 bit bitonal 8 to 16 bit grayscale 48 bit color	8 bit grayscale 24 bit color	8 bit grayscale 24 bit color
Spatial Resolution	Adjust scan resolution to produce a minimum pixel measurement across the long dimension of 6,000 lines for 1 bit files and 4,000 lines for 8 to 16 bit files.	150 to 200 PPI	144 PPI
Spatial Dimension	4000 to 6000 pixels across the long dimension	600 pixels across the long dimension	150 to 200 pixels across the long dimension
ORAL HISTORIES			
Record as uncompressed Wav files at a minimum quality setting of 16-bit/44.1KHz.			
	Master/Preservation	Access	
File Format	Wav	MP3	
VIDEO			
	Master/Preservation	Access	Thumbnail

File Format	Motion JPEG 2000, MOV, AVI	MPEG-4	
Picture Size	1920x1080		
Frame Rate	24-30 fps (frames per second)		

Storage and File Management Considerations

- Where will the files reside?
- Will you need to purchase a server or cloud storage?
- Backup/disaster recovery: two copies of all digital files are recommended, one stored off-site.
- Use a consistent file naming convention.
 - For best practices see page 24 of [BCR best practices](#)

Basic Equipment and Software Recommendations

- Indexing and transcription tool, <http://www.oralhistoryonline.org/>
- [Scan PA Project Station Equipment List](#)
- [Rev.com](#) – transcription, caption, and translation services

Further Reading on Digital Capture & Oral History

- [Minimum Digitization Capture Recommendations](#), The Association for Library Collections and Technical Services (ALCTS), 2013
- [BCR's CDP Digital Imaging Best Practices](#), Version 2.0, June 2008
- [Best Practices and Planning for Digitization Projects](#), WebJunction, July 2010
- [Oral History in the Digital Age](#), Michigan State University, 2017

Documentation

- [Examples](#) of Deed of Gift, Oral History Release Form, Project Participant Form (something that can capture basic biographical info about a person), etc.

3 – Catalog

Cataloging is the process of describing the items in your collection using specific fields and standards. The descriptive information you create during the cataloging process is called metadata, and it includes such information as Title, Description, Subject, and Date. The list below are the fields required or suggested by the Digital Public Library of America.

Field	Field Status	Field Description
Data Provider	Required	The organization or entity that supplies data to DPLA through the PPC. Displayed in DPLA as "Contributing Institution".
Is Shown At (URL)	Required	An unambiguous URL of the digital object in its full information context.
Rights	Required	Required to be a URL from Rightsstatements.org. Example: http://rightsstatements.org/vocab/InC/1.0/
Title	Required	A name given to the resource. Unique, descriptive titles are preferred.
Intermediate Provider	Required when Applicable	In instances where one institution is hosting another institution's content, the hosting institution will be mapped as the intermediate provider and displayed as the "Supporting Institution" and the other will be displayed as the "Contributing Institution."
Preview	Required When Applicable	A URL of the thumbnail image.
Date Created	Strongly Recommended	The date of creation of the <i>original</i> resource.
Description	Strongly Recommended	A free text account of the resource.
Place	Strongly Recommended	A geographic location relevant to the original item.
Subject	Strongly Recommended	The topic of the resource. Recommend using a controlled vocabulary, e.g. Library of Congress Subject Headings.
Type	Strongly Recommended	The nature of the resource. Recommend using the DCMI Type vocabulary.
Creator	Recommended	A person or entity primarily responsible for making the resource.

Collection Title	Recommended	A collection that contains the described resource.
Collection URL	Optional if using Collection Title	The URL of the collection that contains the described resource.
Identifier	Recommended	The local identifier of the described resource.
Language	Recommended	The language of the resource.
Alternate Title	Optional	Any alternative title of the described resource including abbreviation and translation.
Contributor	Optional	An entity responsible for making contributions to the described resource.
Extent	Optional	The size or duration of the original resource.
Format	Optional	The physical medium of described resource.
Publisher	Optional	The publisher of the original resource.
Relation	Optional	A related resource.

Further Reading on Cataloging and Metadata

- [Using Metadata to Describe Digital Content](#), DPLA, 2015

4 – Share

In order to share your digital collections, you will need to publish them online using a content management system (CMS). Common CMS products are ContentDM, Islandora, PastPerfect Online, and Omeka. Your organization may have its own CMS, or it may have access to a CMS through a consortial group such as Marmot or AspenCat.

The Colorado State Library can help you create and maintain a CMS through the CVL-Collections program. Contact Marisa Wood (mwood@coloradovirtuallibrary.org) if you need assistance getting your digital collection online.

Getting Started: Laptop & Kit Contents

Laptop, Software & Kit Contents

The kit laptop in the kit is preloaded with software programs that are useful for editing and converting images and audio files. It is also configured to prevent users from being able to do some routine tasks in order to protect and extend the life of the hardware. For example, you will not be able to install any new or additional software programs, or save files transferred from other media directly to the laptop itself. All files created using the Storage Media Conversion kit must be saved to the provided external hard drive while you work with them, and then transferred to your local storage solution for backup and preservation.

Username: Diginator

Password: ShareYourStory

Audio Editing - Audacity

Audacity is a free, easy-to-use, audio editing program that can be used to edit audio files and convert between different audio file formats. Refer to the [Audacity User Manual](#) for more information.



Image Editing - GIMP

GIMP is a free graphics editor used for image retouching and editing, free-form drawing, converting between different image formats, and more. Refer to the [GIMP User Manual](#) for more information.



Conversion How-To: Zip Disk Transfer

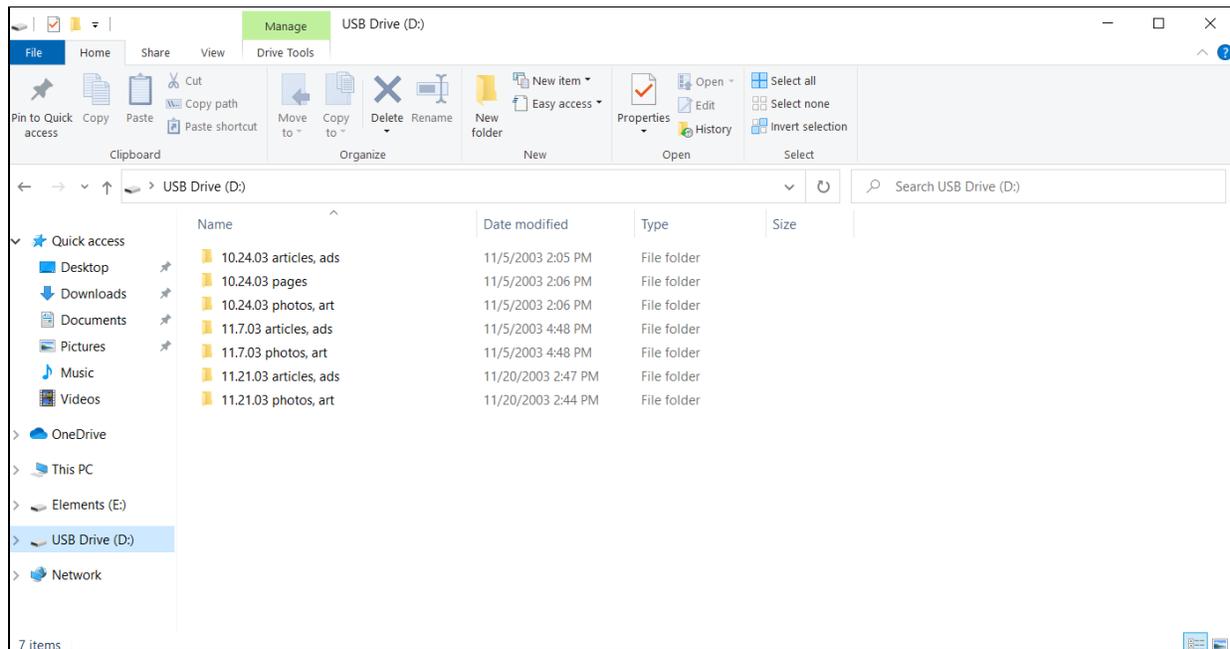
Notice: The copyright law of the United States (Title 17 U.S. Code) governs the making of photocopies or other reproductions of copyrighted material. The person using this equipment is liable for any infringement.

Before you begin

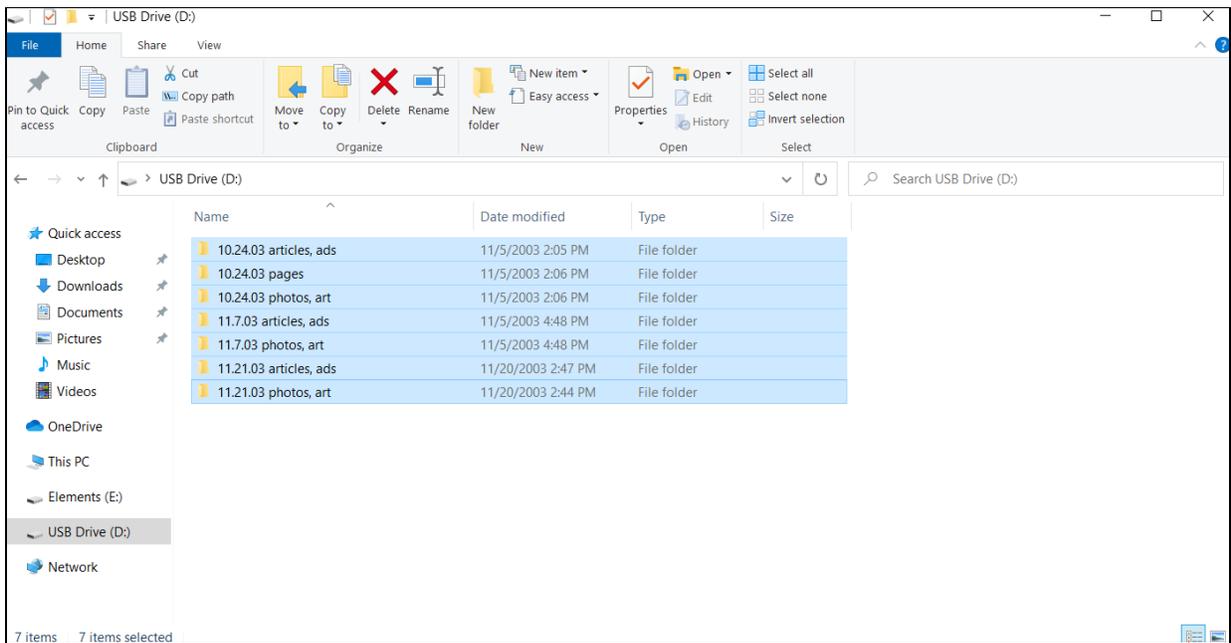
- Connect the laptop to a power source using the provided DC power cables. All cables are labeled for your convenience.
- Connect the Zip Drive to the USB port on the kit laptop
- Connect the provided external harddrive to the USB port on the kit laptop.

Copy Files from Zip Disk to External Harddrive

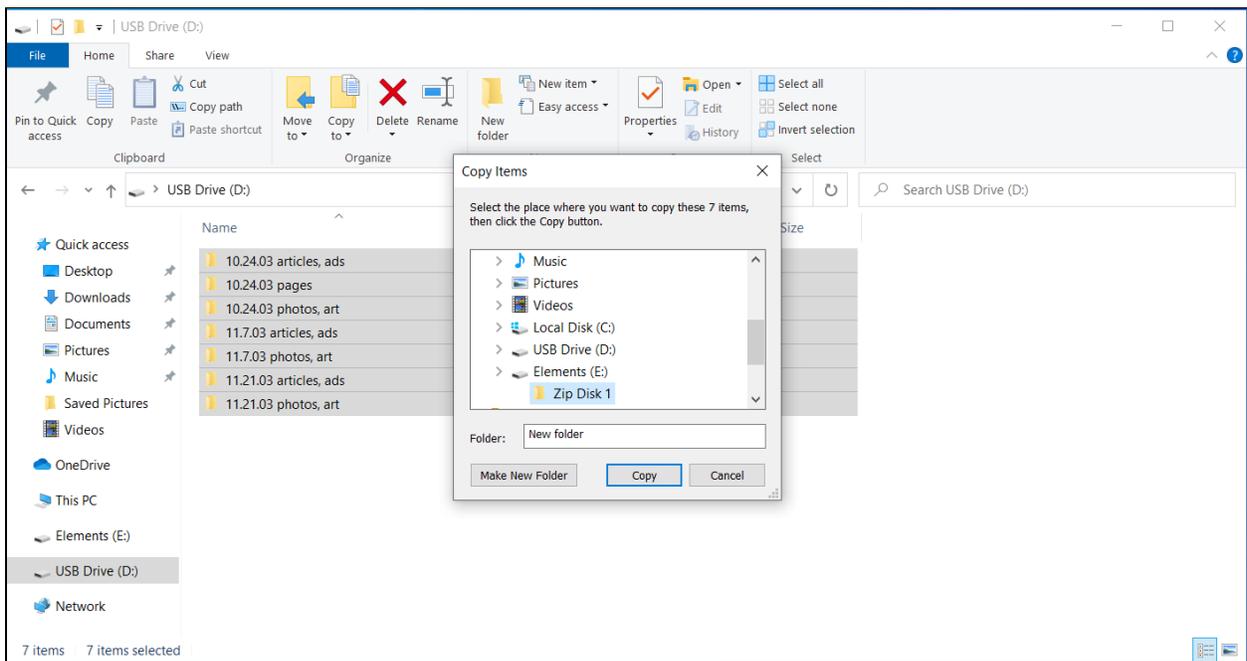
- 1) Insert your Zip disk into the Zip disk drive.
- 2) On the kit laptop, open the File Explorer and from the menu on the left, select **USB Drive (D:)**.



- 3) Select/highlight each file or folder that you want to copy (hold down the Ctrl key to select multiple files), and then click the **Copy To** option.



- 4) In the Copy Items window, click **Elements (E:)** copy to the provided external harddrive. If you are transferring files from multiple zip disks, you might want to create a folder on the harddrive for each disk. To create a folder click **Make New Folder** and name it something that will help you identify the disk.



- 5) Click **Copy**. Do not disconnect either the Zip drive or the external harddrive until the copy is complete.

Post-processing

- 6) Eject your Zip disk from the Zip drive.
- 7) Double check that all of the transferred files are saved to the external harddrive by opening the File Explorer window, and selecting **Elements (E:)** from the menu on the left.
- 8) When you have finished a transfer session, make sure to back up the files you have created to an external drive or cloud-based storage.

Conversion How-To: 3" Floppy Disk Transfer

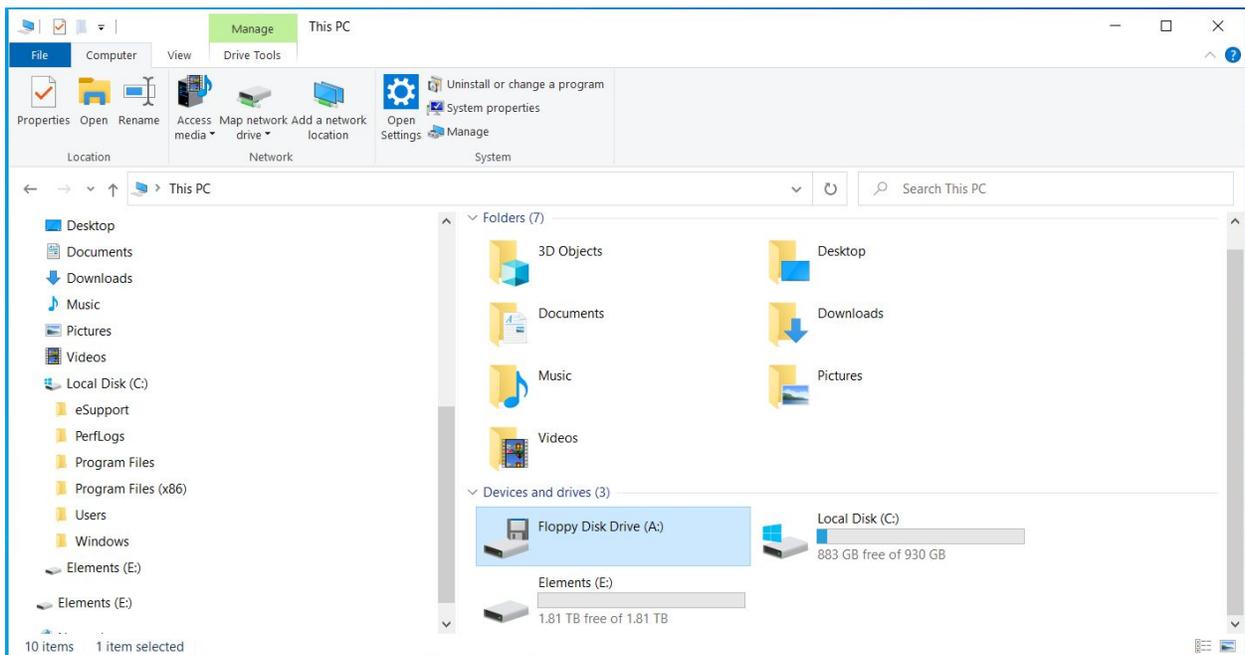
Notice: The copyright law of the United States (Title 17 U.S. Code) governs the making of photocopies or other reproductions of copyrighted material. The person using this equipment is liable for any infringement.

Before you begin

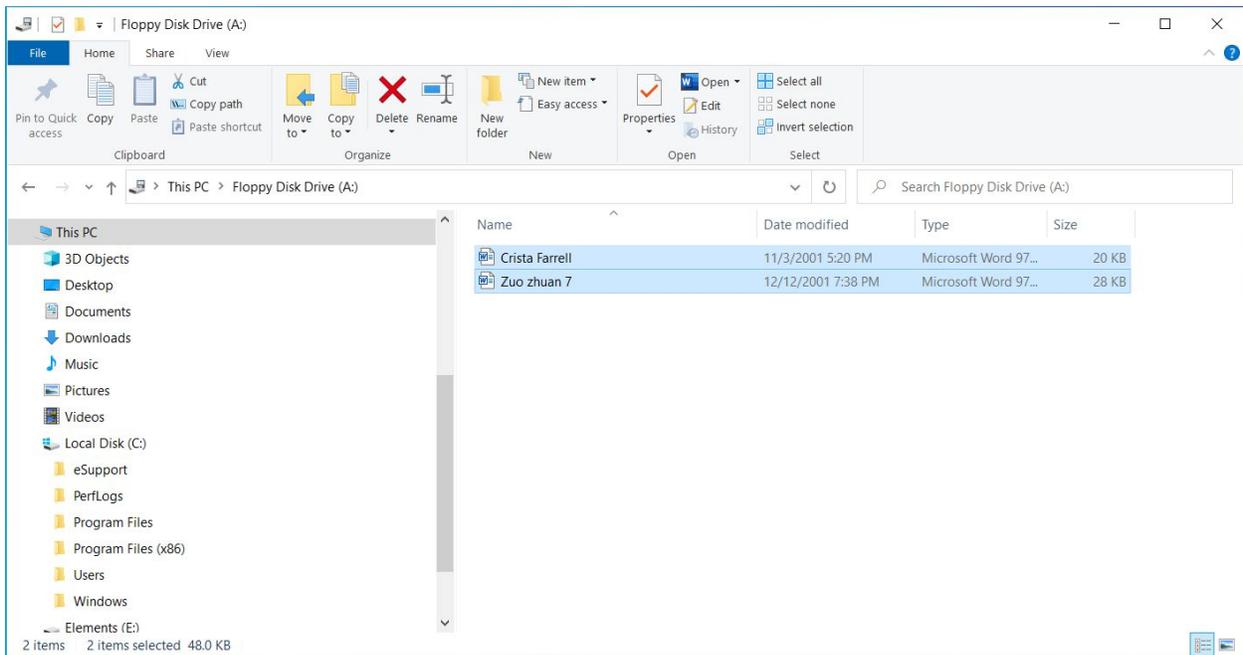
- Connect the laptop to a power source using the provided DC power cables. All cables are labeled for your convenience.
- Connect the 3" Floppy Disk Drive to the USB port on the kit laptop
- Connect the provided external harddrive to the USB port on the kit laptop.

Copy Files from 3" Floppy Disk to External Harddrive

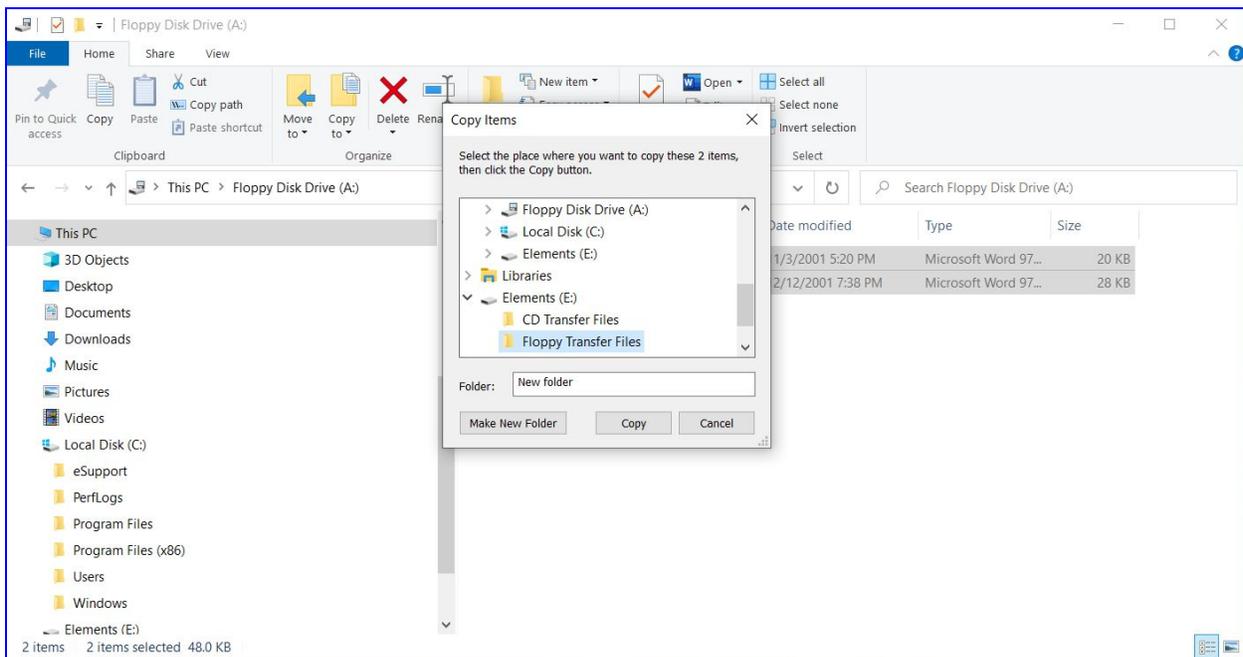
- 1) Insert your 3" floppy disk into the Floppy Disk drive.
- 2) On the kit laptop, open the File Explorer and from the menu on the left, select **Floppy Disk Drive (A:)**.



- 3) Select/highlight each file or folder that you want to copy (hold down the Ctrl key to select multiple files), and then click the **Copy To** option.



- 4) In the Copy Items window, click **Elements (E:)** copy to the provided external harddrive. If you are transferring files from multiple floppy disks, you might want to create a folder on the harddrive for each disk. To create a folder click **Make New Folder** and name it something that will help you identify the disk.



- 5) Click **Copy**. Do not disconnect either the Floppy disk drive or the external harddrive until the copy is complete.

Post-processing

- 6) Eject your 3" floppy disk from the drive.
- 7) Double check that all of the transferred files are saved to the external harddrive by opening the File Explorer window, and selecting **Elements (E:)** from the menu on the left.
- 8) When you have finished a transfer session, make sure to back up the files you have created to an external drive or cloud-based storage.

Conversion How-To: Compact Disk Transfer

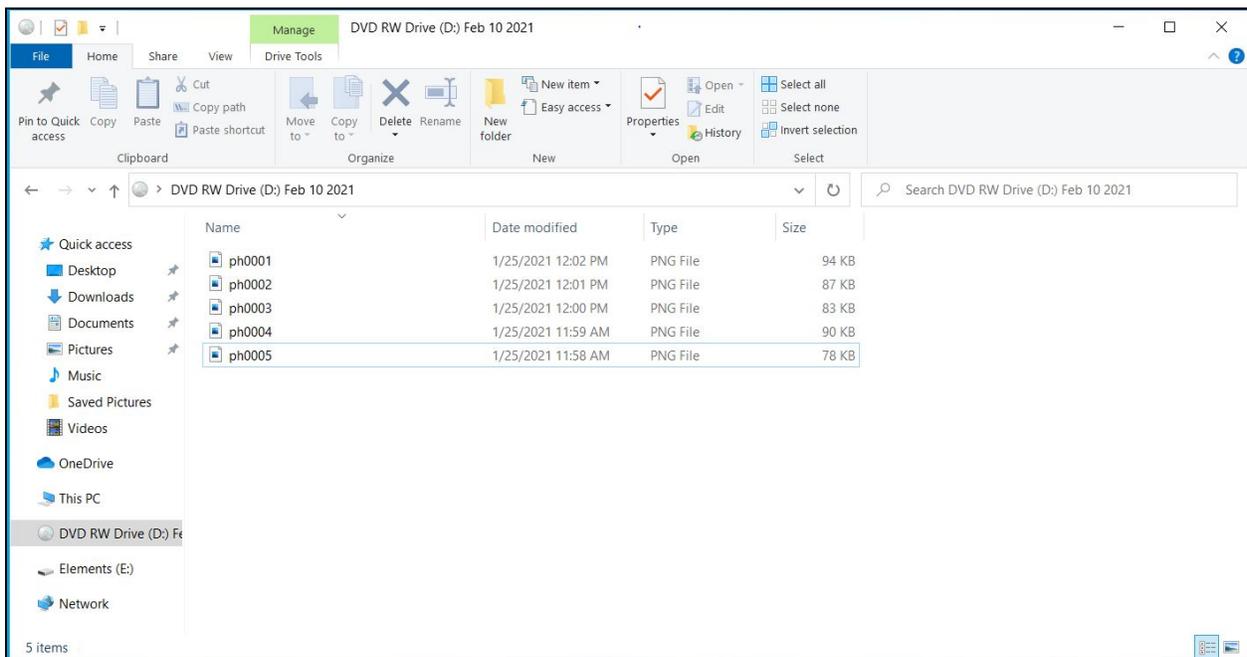
Notice: The copyright law of the United States (Title 17 U.S. Code) governs the making of photocopies or other reproductions of copyrighted material. The person using this equipment is liable for any infringement.

Before you begin

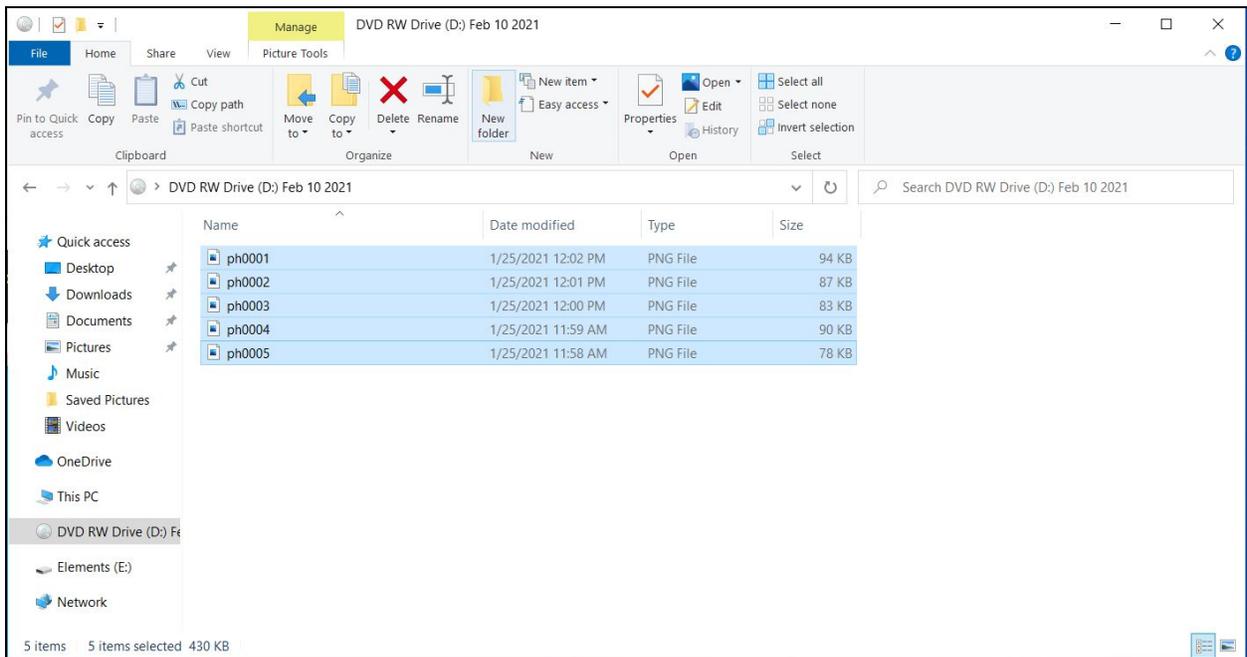
- Connect the laptop to a power source using the provided DC power cables. All cables are labeled for your convenience.
- Connect the CD/DVD Drive to the USB port on the kit laptop
- Connect the provided external harddrive to the USB port on the kit laptop.

Copy Files from Compact Disk to External Harddrive

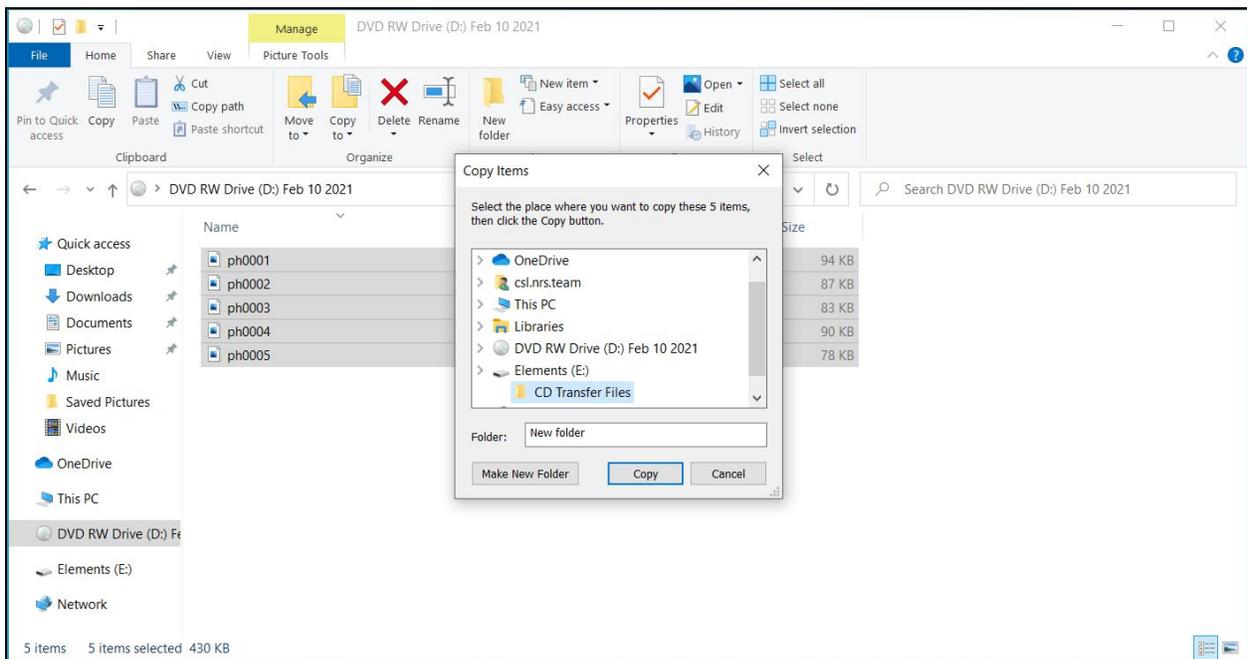
- 1) Insert your Compact disk into the CD/DVD disk drive.
- 2) On the kit laptop, open the File Explorer and from the menu on the left, select **USB Drive (D:)**.



- 3) Select/highlight each file or folder that you want to copy (hold down the Ctrl key to select multiple files), and then click the **Copy To** option.



- 4) In the Copy Items window, click **Elements (E:)** copy to the provided external harddrive. If you are transferring files from multiple compact disks, you might want to create a folder on the harddrive for each disk. To create a folder click **Make New Folder** and name it something that will help you identify the disk.



- 5) Click **Copy**. Do not disconnect either the CD/DVD drive or the external harddrive until the copy is complete.

Post-processing

- 6) Eject your compact disk from the CD/DVD drive.
- 7) Double check that all of the transferred files are saved to the external harddrive by opening the File Explorer window, and selecting **Elements (E:)** from the menu on the left.
- 8) When you have finished a transfer session, make sure to back up the files you have created to an external drive or cloud-based storage.

Metadata Worksheets

The following worksheets are intended to help your library gather metadata (descriptive information) about the digital objects you create using the tools in this kit, in accordance with the PPC Metadata guidelines. The fields designated as “Required” and “Strongly Suggested” are important for making sure that your collections work correctly in the PPC, and are therefore the focus of the worksheets. You may also want to include the “Optional” fields to make the metadata about your digital collections more robust and to improve searching. What follows may serve as a starting point for the data you gather.

Dublin Core Fields from Required to Optional.

- Title : Required
- Rights : Required
- Date Created : Strongly Recommended
- Subject : Strongly Recommended
- Description : Strongly Recommended
- Spatial Coverage : Strongly Recommended
- Type : Strongly Recommended
- Creator : Recommended
- Language : Recommended
- Is Part of : Recommended
- Identifier : Recommended
- Format : Optional
- Publisher : Optional
- Extent : Optional
- Alternative Title : Optional
- Contributor : Optional
- Relation : Optional

Required and Recommended Fields

DPLA/PPC Field	Data Provider	Is Shown At (URL)	Rights	Title	Intermediate Provider	Preview	Date Created	Description	Place	Subject	Type
Dublin Core Field or Source	*Partner Provided	**System Generated	dcterms: rights	dcterms: title	*Partner Provided	**System Generated	dcterms: date created	dcterms: description	dcterms: spatial	scterms: subject	dcterms: type
Required					Required when Applicable		Strongly Recommended				

* Partner Provided: This is a constant data element that is provided by the partner, and appended to each record as part of the data harvesting process.

** System Generated: This data element is system generated, meaning it is created by the Content Management System when an object is added - the field in which this data is output may vary. It will be identified and mapped accordingly as part of the data harvesting process.

Omeka CSV Import

Omeka will automatically map elements based on their column names, provided that the column names are formatted as follows:
 {ElementSetName}:{ElementName} - see below for examples.

Dublin Core: Rights	Dublin Core: Title	Dublin Core: Creation Date	Dublin Core: Description	Dublin Core: Spatial Coverage	Dublin Core: Subject	Dublin Core: Type	Dublin Core: Format
E.g. http://rightsstatements.org/page/InC/1.0/	E.g. Hvar Cathedral Ticket	E.g. 2018	E.g. One ticket for entry to the St. Stephen Cathedral in Hvar (Croatia).	E.g. Hvar (Croatia)	E.g. Cathedrals	E.g. Image	E.g. image/jpeg
http://rightsstatements.org/page/InC/1.0/	Southwest Airlines Drink Coupons	2019	Four Southwest Airlines Drink Coupons expiring May 31 2019	United State of America	Southwest Airlines Co.	Image	image/jpeg
http://rightsstatements.org/page/InC/1.0/	Split Taxi Card	2018	Taxi 61 of Split and Rino (Croatia) Business Card	Split (Croatia)	Taxicabs	Image	image/jpeg

Generic CSV Import

For import into a system other than Omeka, or if you want to manually map the fields during the import process, you can use simplified column headers.

dcterms:rights	dcterms:title	Dcterms:date created	dcterms:description	dcterms:spatial	dcterms:subject	dcterms:type	dcterms:format
E.g. http://rightsstatements.org/page/InC/1.0/	E.g. Hvar Cathedral Ticket	E.g. 2018	E.g. One ticket for entry to the St. Stephen Cathedral in Hvar (Croatia).	E.g. Hvar (Croatia)	E.g. Cathedrals	E.g. Image	E.g. image/jpeg
http://rightsstatements.org/page/InC/1.0/	Southwest Airlines Drink Coupons	2019	Four Southwest Airlines Drink Coupons expiring May 31 2019	United State of America	Southwest Airlines Co.	Image	image/jpeg
http://rightsstatements.org/page/InC/1.0/	Split Taxi Card	2018	Taxi 61 of Split and Rino (Croatia) Business Card	Split (Croatia)	Taxicabs	Image	image/jpeg