

Designing Online Materials for Low Bandwidth

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Creating large files for your students to download may hinder those with slow internet connections. This guide will help you produce low bandwidth friendly course content to aid students with slower connection speeds.

Whenever you retrieve a file from your computer, there is a "Size" column showing the stored item's file size. 1,000KB = 1MB, and as the size grows, so does the student's wait time as they download the file. For a visual chart of how long it might take one of your students to download a course file, visit the [Download time website \[opens in a new window\]](#). Enter the file's size, and the calculator displays the time to download in seconds/minutes. A typical student's internet connection is between ADSL 1 MBs to 24 MBs.

Images for Low Bandwidth

Large course images in tests, PowerPoints, PDFs, Word Docs, or just inserted directly into a course module should be moderate in size. If the image is coming directly from a camera or a web site, check the image size.

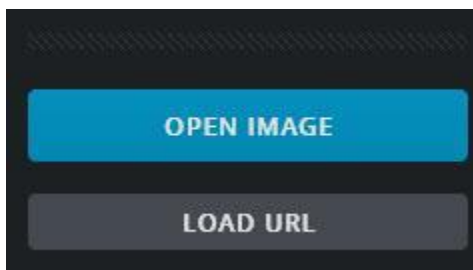
Navigate to the image saved on your computer and note the "Size column". An image with a size such as "5,400KB" represents an unnecessarily large image. After being resized, the same image could change to as low as "80KB," which significantly reduces the time students require to download. If the student is using a cell phone, it will save them time and data usage.

Name	Type	Size
 original_image	JPG File	5,407 KB
 resized_image	JPG File	86 KB

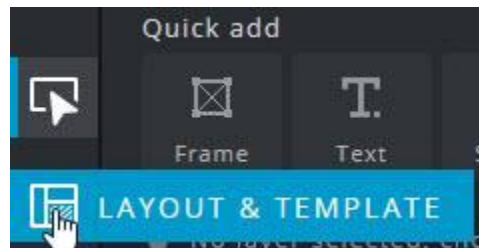
Resizing an Image in Pixlr

Resizing an image is a simple process and is as easy as using a free browser-based editing software along with a few clicks. Use a free, online photo editor such as [Pixlr \[opens in a new window\]](#) to resize the image.

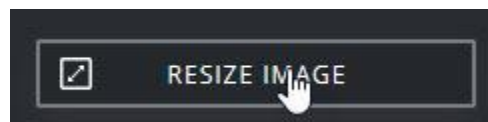
Begin by selecting "Pixlr X" from the Pixlr homepage and then click the "Open Image" button. Select the image you want to resize.



When the image opens in the editor, select “Layout and Template” on the left hand side of the screen.

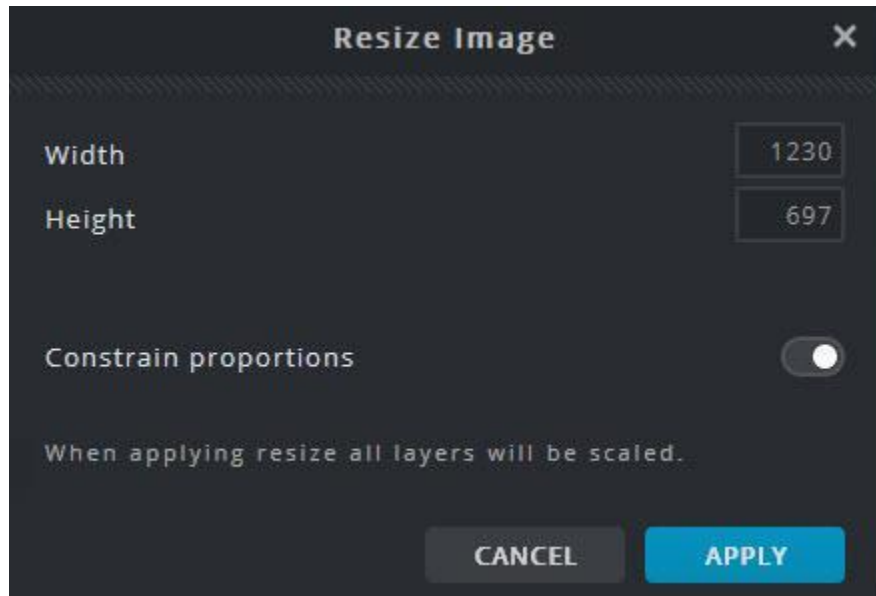


Next, select “Resize Image”.



A popup window appears with width and height settings. By default, “Constrain proportions” is turned on, automatically adjusting the height or width if the other is changed. Depending on your specific needs, the needed settings will vary. Generally, reducing the height by half will greatly reduce the file size. If required, further reductions will make the image file size smaller.

When finished, press the “Apply” button and save the image.



PowerPoints for Low Bandwidth

PowerPoint files can easily become excessively large. Common causes of large PowerPoint files include

- images taken from a cell phone without resizing then embedded
- publisher PowerPoint files that contain dozens of slides
- embedded movies in the PowerPoint

To keep your PowerPoint size reasonable, avoid presentation files that have many slides, large images embedded, and embedded movies.

For example, if a chapter PowerPoint file from the publisher has 50 slides, consider removing redundant slides. Also, remove any material that has no corresponding assessment in your course. Reducing the size will make it easier for students to download and provide a more precise course resource.

Videos for Low Bandwidth

Videos are the most likely of all course resources to cause issues for students with low bandwidth. Below are some techniques to keep the file size of course videos small

- keep video length short, less than 15 minutes
- if your video goes beyond 15 minutes, break it up into multiple videos
- upload videos to YouTube for high-quality video compression
- avoid linking to videos that are over thirty minutes when possible

Videos are a powerful tool to teach students and allow the student freedom to watch the instruction multiple times. Take these simple steps to improve your student's experience.

If you need assistance, please contact Jaime McLeod (jmcle@cccc.edu) or Lisa Knight (lknight041@cccc.edu).