

## Requirements & Tips for Using Images

We encourage you to incorporate images into your curricular write-up. In addition to photos, images may be clipart, diagrams, drawings, tables, graphs, charts, equations and animations! Consider images to be all the items you want to include that are not simple strings of text.

As you use a TE template, provide the following information for each image, organized in a text box:

- **Image file:** Provide the name of the image file.
- **ADA Description:** Write a brief description of the image as if you were describing it to a blind person. Do not repeat information provided in the caption (a blind person can listen to that text). This text information will also appear on the TE website when you hover your mouse over the image.
- **Source/Rights:** Provide the copyright permission citation, as desired by the image owner.
- **Caption:** (optional) Provide a caption, if desired. If image is referred to in the text, use numbered figures or tables, and remember to reference it in the text, for example: (see Figure 1).

example

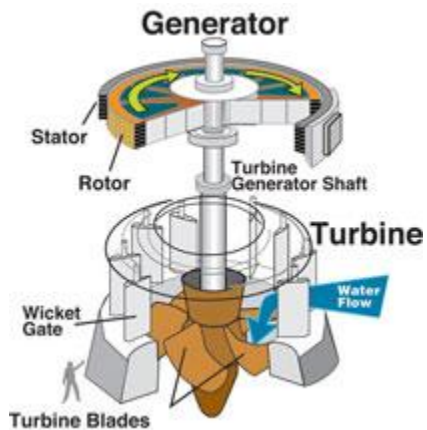
### Image 4

**Image file:** cub\_housing\_lesson04\_activity1\_image4.jpg

**ADA Description:** Photo shows girl using a hose to spray water at another girl while washing a dog.

**Source/Rights:** Copyright © Microsoft Corporation, One Microsoft Way, Redmond, WA 98052-6399 USA. All rights reserved.

**Caption:** An example of the law of conservation of mass: Holding your thumb over the water flowing from a hose forces the water through a smaller opening and speeds up the flow.



example

### Figure 1

**Image file:** cub\_dams\_lesson04\_figure2.jpg

**ADA Description:** Line drawing shows parts of a generator and turbine including turbine generator shaft, rotor, stator, generator shaft, wicket gate and turbine blades.

**Source/Rights:** Copyright © US Army Corps of Engineers, Wikipedia Commons [http://en.wikipedia.org/wiki/File:Water\\_turbine.jpg](http://en.wikipedia.org/wiki/File:Water_turbine.jpg)

**Caption:** Figure 1. Cutaway view of a water turbine and electrical generator. Note the location of entering water flow to spin the blades, the shaft connecting the turbine to the generator, and how big it is (see the outline of a man at the bottom, for scale)!

example

### Image 1

**Image file:** drx\_chedda\_lesson01\_activity1\_image1web.jpg

**ADA Description:** A man and a woman attach a camera to a steel railing near the ocean's edge.

**Source/Rights:** Copyright © US Geological Survey <http://soundwaves.usgs.gov/2010/07/>

**Caption:** Accurate measurements in standardized units are important in collecting imagery to measure the speed and direction of currents in the surf zone of the NC shore.



You must obtain written permission to use image files that are not your own or in the public domain, or obtain the images from a source that allows the use of its images for nonprofit purposes.

- Possible sources of images:
  - ✓ **Create your own!** — For photos you take in the classroom, obtain written permission from the people in the photographs (or from the parents of children). Upon request, TE can provide an example photo release form.
  - ✓ **From US government websites (.gov)** — Many government websites have excellent photos and diagrams, as well as extensive image galleries. Be aware of exceptions to free use; look for copyright notices and/or reproduce their copyright source info for correct attribution. **Tip** to find .gov images: In a Google Images® search bar, type in a description of what you are seeking followed by “site:.gov” — for example: **biomedical engineering site:.gov**. Examples sources:
    - US Government Photos and Images at <http://www.usa.gov/Topics/Graphics.shtml>
    - Public Health Image Library (PHIL) at <http://phil.cdc.gov/phil/home.asp>
    - US Department of Agriculture (Image Gallery) at <http://www.ars.usda.gov/is/graphics/photos/>
    - US Geological Survey (Photography & Images, Videos and Animations) at <http://gallery.usgs.gov/>
    - US Dept. of Health & Hum. Svcs. (Image Lib.) at <http://www.hhs.gov/news/imagelibrary/index.html>
    - Genome Programs of the US Dept. of Energy (Image Gallery) at <http://genomics.energy.gov/gallery/>
    - NASA Image Exchange (NIX) at <http://nix.larc.nasa.gov/home;jsessionid=1ds9n2inmj7nb>
    - Reusable NASA Images at <http://serc.carleton.edu/usingdata/nasaimages/index4.html>
    - National Institutes of Health Image Bank at <http://media.nih.gov/imagebank/index.aspx>
    - NOAA Photo Library at <http://www.photolib.noaa.gov/>
    - Solar Energy Techn. Program (Photographs) at (<http://www1.eere.energy.gov/solar/photographs.html>)
  - ✓ **From Microsoft’s clipart collection** <http://office.microsoft.com/en-us/images/> — for photos, illustrations and animations. Use the following text for the Source/Rights text: Copyright © 2004 Microsoft Corporation, One Microsoft Way, Redmond, WA 98052-6399 USA. All rights reserved.
  - ✓ **From Wikimedia Commons** <http://commons.wikimedia.org> or **Wikipedia** <http://en.wikipedia.org/> — Click on the image to find out its copyright/source information. Often the owner has designated his/her image to be available for widespread use under the GNU Free Documentation License or the Creative Commons Attribution-ShareAlike License, which means you can use it as long as you attribute the work as specified (usually the creator’s name and URL source). Examples: <http://commons.wikimedia.org/wiki/File:Electromagnetic-Spectrum.png> and [http://en.wikipedia.org/wiki/File:EM\\_Spectrum\\_Properties\\_edit.svg](http://en.wikipedia.org/wiki/File:EM_Spectrum_Properties_edit.svg)
  - ✓ **From some stock photo and clipart websites**, such as The Stock Exchange <http://www.sxc.hu/> or public domain photo libraries (such as [http://web.centre.edu/enviro/Photos\\_files/Photos.htm](http://web.centre.edu/enviro/Photos_files/Photos.htm)) — look for non-professional photos and check the website’s “Terms of use” policy to be sure.
  - ✓ Do not assume that you can use images found on educational websites (.edu), but often, if asked, the owners will grant permission for nonprofit use their images.
- Keep records of image sources, ownership and permission granted correspondence. This includes images used in PowerPoint presentations (document by putting thumbnails images with source/rights information on the last few slides or in a separate file). Upon request, TE can provide an example letter to request the use of copyrighted materials (images, articles, etc) for you to personalize and use.
- Save and provide all original image files (at original, high resolution) from which final images can be made for display on the TE website. Embed lower-resolution images in the Word templates to mock-up the desired size and placement.
- Save and provide your original files for tables, charts or drawings so they are accessible for final editing. Image files should be in the most common formats (jpg, gif, ppt, png, etc.) so they will be recognized by almost all browsers. The maximum image width rendered on TE is 700 pixels.

- If you combine clipart or images into a composite graphic, indicate the sources of all items used.
- If you make a table, remember to indicate the source of the data (if from one place), or list multiple sources under the References section.
- When naming image files, use lower-case letters only (no caps). This includes file extensions: .jpg, .gif, .doc, .pdf, .ppt, etc. Also, leave no spaces in the file names; use underscores instead.
- When indicating that you want an image placed at a certain spot, also note if you have a preference for positioning it left justified with text to wrap around, centered, or right justified with text to wrap.
- You can attach videos by providing an .avi or .mov file, or the URL to an existing video on another website (such as YouTube). See an example under the Attachments section in this TE document at: [http://teachengineering.org/view\\_lesson.php?url=http://www.teachengineering.org/collection/cub/\\_lessons/cub\\_dams/cub\\_dams\\_lesson04.xml](http://teachengineering.org/view_lesson.php?url=http://www.teachengineering.org/collection/cub/_lessons/cub_dams/cub_dams_lesson04.xml)
- Images **cannot** be inserted in the following template components: title, grade level, lesson #, lesson dependency, activity dependency, group size, summary, engineering connection, keywords, educational standards, vocabulary / definitions, attachments, references, redirect URL, owner, contributors, copyright. To insert an image at the top of a document, indicate that it is a “header” component.

Year	Location	Type	Notes
1906	San Francisco, USA	Earthquake	A magnitude 7.8 earthquake that left nearly 300,000 people homeless
2004	Indian Ocean	Tsunami	The second most powerful earthquake ever recorded; killed nearly 200,000 people
1928	Mt. Etna, Italy	Volcano	The eruption destroyed the entire town of Mascalì
1974	Cyclone Tracy, Darwin, Australia	Hurricane	A category 4 storm that destroyed 70% of the city of Darwin
1931	Huang He River, China	Flood	The most deadly natural disaster of the 20 <sup>th</sup> century; estimated 1 to 4 million people died.
2006	Philippines	Landslide	A mudslide on the island of Leyte was caused by heavy rains and a small earthquake
1999	Moore, Oklahoma	Tornado	An F5 tornado with maximum wind speeds of 318 mph (512 kph) severely damaged the city

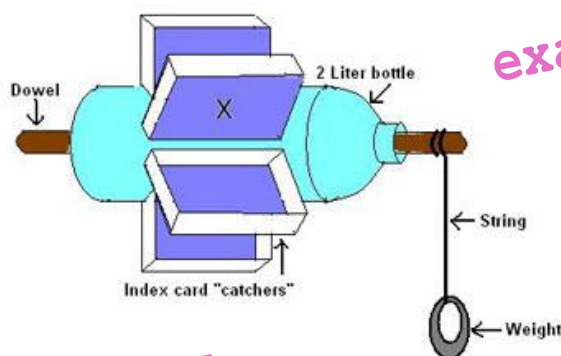
example

**Table 1**

**Image file:** cub\_natdis\_lesson01\_table1.jpg  
**ADA Description:** 1906 earthquake in San Francisco; 2004 tsunami in Indian Ocean, 1928 Mt. Etna volcanic eruption in Italy, 1974 hurricane in Darwin, Australia; 1931 flood of Huang He River in China; 2006 landslide in Philippines; 1999 tornado in Moore, OK.

**Source/Rights:** Copyright © 2006 Geoffrey Hill, ITL Program, College of Engineering, University of Colorado at Boulder

**Caption:** Table 1: Examples of natural disasters in recent human history.



example

**Figure 1**

**Image file:** cub\_energy2\_lesson08\_activity2\_figure1.jpg  
**ADA Description:** Diagram showing construction placement of a 2-liter bottle, dowel, index card “catchers,” string and weight. One catcher is marked with an X.

**Source/Rights:** Copyright © 2005 Malinda Schaefer Zarske, ITL Program, University of Colorado at Boulder

**Caption:** Figure 1. Assembly diagram for the plastic bottle waterwheel.

example

**Figure 2**

**Image file:** cub\_energy2\_lesson08\_activity2\_figure2.jpg

**ADA Description:** A girl holds horizontally a 2-liter bottle with paper paddles taped around the middle section.

**Source/Rights:** Copyright © Joe Friedrichsen, ITL Program, University of Colorado at Boulder.

**Caption:** Figure 2. Example plastic bottle waterwheel designed by a student team.



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