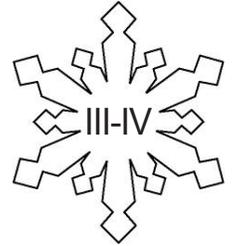


# Basic Photoshop

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Levels



Grades 5-8

## Overview:

Photoshop is one of the most common computer programs used to work with digital images. In this lesson, students use Photoshop to enhance a photo of Brevig Mission School, so that it could be included in a presentation.

## Objectives:

The student will:

- download an image from the Internet; and
- use Photoshop to straighten, crop, enhance, and resize a digital image.

## Alaska Content Standards:

### *Technology*

A1 A student should be able to operate technology-based tools. A student who meets the content standard should use a computer to enter and retrieve information.

## Materials:

- Computer with Adobe Photoshop and an Internet connection
- Printer (optional)
- STUDENT WORKSHEET: "Learning to Use Photoshop"  
(Thanks to Mollie Smith from Brevig Mission for providing the photo.)

## IT Basics:

Photoshop is photo editing software.

Part of learning Photoshop is knowing what order the changes should be made in. For example, you would not want to crop a photo before it is straightened; doing it in reverse order would result in additional cropping modifications after the photo is straightened. The last step in digital enhancements should be sharpening. Sharpening before a photo is resized can cause the sharpening effect to look dramatically different after it has been resized.

## Activity Procedure:

1. Guide students through downloading the photo "BrevigMission.jpg" from the ACMP website ([www.ArcticClimateModeling.org](http://www.ArcticClimateModeling.org)) in the Classroom Lessons section. Ask students to save the photo on the desktop or in their own folder.
2. Ask students to launch Photoshop and open the Brevig Mission photo.
3. Ask students to look at the photo, and make a list of changes they think should be made to improve the photo. Discuss as a class.
4. Explain in this lesson, the photo will be straightened, cropped, brightness/contrast enhanced, resized, and then sharpened. There are also optional steps for adjusting the perspective and resizing the image.
5. Distribute the STUDENT WORKSHEET: "Learning to Use Photoshop." Guide students through the worksheet

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**Extension Idea:** Ask students to locate an image online that relates to a weather or climate topic. Ask students to modify the photograph in one of the following ways: 1) for use in a presentation or 2) to demonstrate a prediction or physical processes.

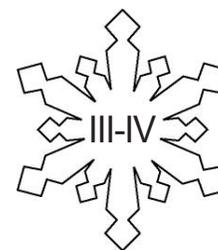
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Name: \_\_\_\_\_

# Learning to Use Photoshop

## Student Worksheet (page 1 of 4)

Levels



Grades 5-8

### Directions:

- STEP 1.** Open the application Adobe Photoshop. It may be on the dock or in the applications folder.
- STEP 2.** Open the BrevigMission.jpg photo that was downloaded by selecting **File** → **Open** and navigating to the photograph. Click on the file name of the photograph, and then click **Open**. It will be found on the desktop if that is where it was saved.

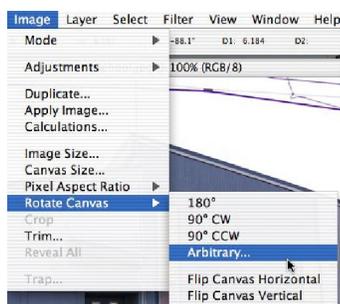
### Straightening Photos

This photo looks like it is tilted slightly to the left, or counter clockwise, so it needs to be rotated clockwise, or to the right. There are several ways to rotate photos. For this photo we will use the measuring tool.



- STEP 3.** Click and hold on the eyedropper tool. A flyout menu will allow you to select the measuring tool. Move the pointer to the measure tool or mouse and release the mouse. The cursor should resemble a ruler.

- STEP 4.** Click and drag a vertical line along the new addition to the school as shown below. It is where the light gray and blue sides meet.

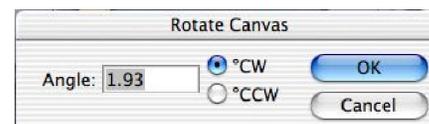


- STEP 5.** Select **Image** → **Rotate Canvas** → **Arbitrary**.

- STEP 6.** A dialog screen will come up. Photoshop is assuming that the line should be vertical and is asking if you want to rotate the photo by the amount necessary to make the line vertical.

In this example the rotation should be about 2 degrees clockwise. Click **OK** and the photo will rotate.

(NOTE: Dragging a line along the horizon of a photo then rotating it the same way can also be done with this method. Photoshop will correct the image to the nearest horizontal or vertical line.)



### Cropping the Photo

Cropping is a way to remove unwanted parts of a photo. The power lines in the photo are distracting so they will be cropped out along with some of the foreground.

Name: \_\_\_\_\_

# Learning to Use Photoshop

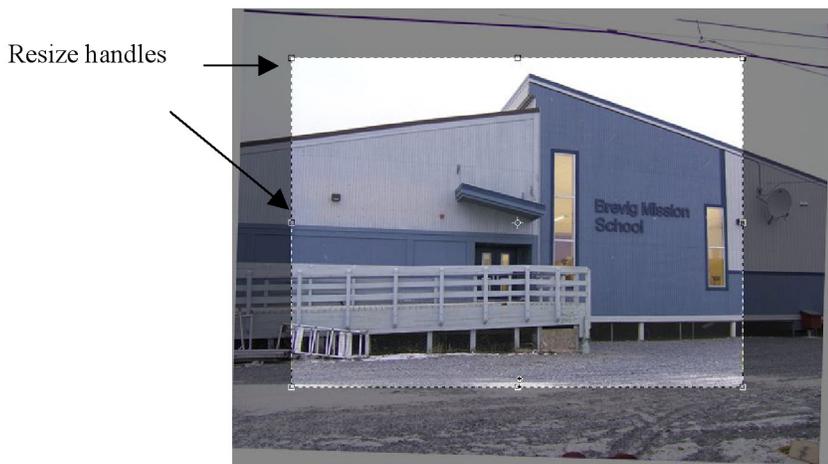
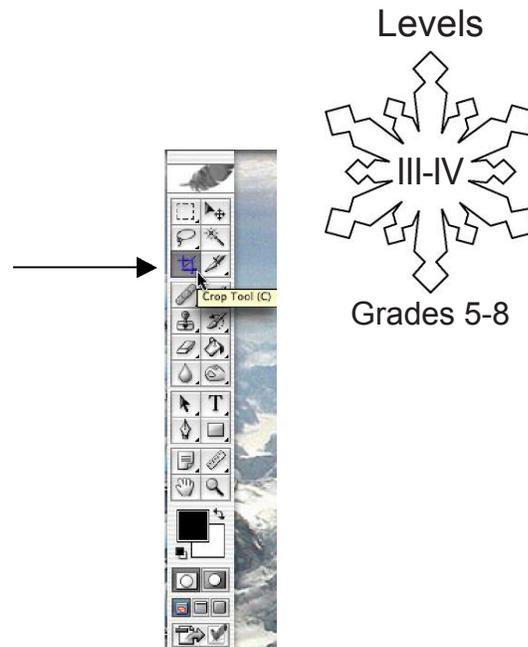
## Student Worksheet (page 2 of 4)

**STEP 7.** Select the crop tool.

**STEP 8.** Move the cursor to the upper left of the photo where the crop will begin. Click and drag to the lower right.

**STEP 9.** Use the resize handles to “fine tune” the crop, so the power lines are cropped out. Be sure to leave the top of the school.

**STEP 10.** Press [Return] to crop the photo.



### Adjusting Perspective

Even though the school has been straightened, the straight lines of the building near the edges of the photo make it look like it is tilting away from the camera. Correcting this used to require taking the photo with an expensive camera. Photoshop has made it easy.

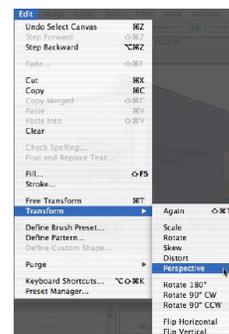


**STEP 11.** Make the workspace larger by dragging the handle at the lower right of the photo.

**STEP 12.** Select all by pressing **command-A** or choosing **Select** → **All** from the menu. The image should have a dotted line around it.

**STEP 13.** Select **Edit** → **Transform** → **Perspective**.

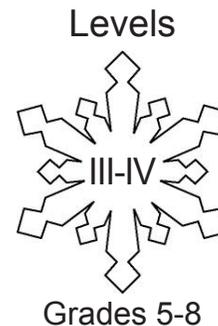
**STEP 14.** Adjusting the photo by clicking and dragging the resize handle at the top right corner of the photo. Drag the handle until the lines of the window are parallel with edge of the photo.



Name: \_\_\_\_\_

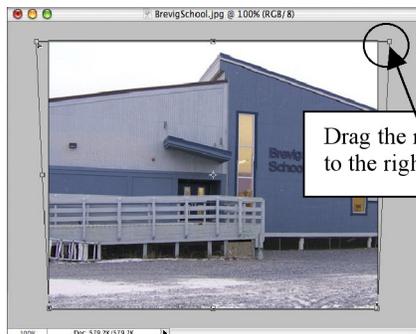
# Learning to Use Photoshop

## Student Worksheet (page 3 of 4)



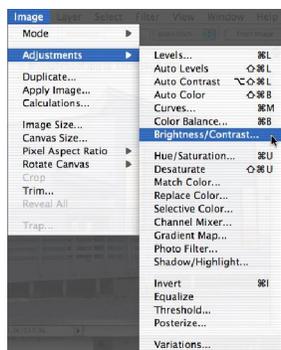
**STEP 15.** Double click inside the photo when finished.

**STEP 16.** To get rid of the dotted lines around the photo, deselect the image by pressing **command-D** or choosing **Select** → **Deselect** from the menu.



### Adjusting the Brightness and Contrast

The image looks dark and lacks contrast. There are several tools that could be used, such as levels and curves, to adjust this. For this photo, the brightness and contrast tools will be used.



**STEP 17.** Select **Image** → **Adjustments** → **Brightness/Contrast**.

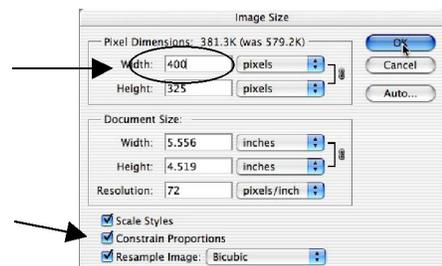
**STEP 18.** From the dialog box, move the Brightness slider to +15 and the Contrast slider to +10. Computers with different monitors may require more or less adjustment.

**STEP 19.** Click **OK**.



### Resizing the Photo

The size of this photo is fairly small at 640 pixels wide. Newer cameras offer many megapixels of resolution, which is great for making large prints. However, they are too big for most presentations or email. Often it is necessary to reduce the size of the photo. This photo will be reduced to a width of 400 pixels.



**STEP 20.** Select **Image** → **Image Size** from the menu.

**STEP 21.** From the image size dialog box change the width to 400 pixels. Be sure that the "Constrain Proportions" is checked.

**STEP 22.** Click **OK** when done.

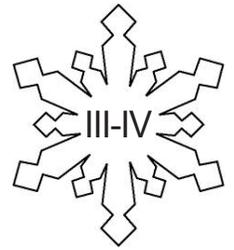


Name: \_\_\_\_\_

# Learning to Use Photoshop

## Student Worksheet (page 4 of 4)

Levels



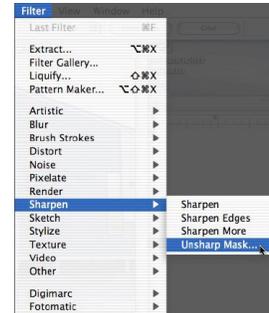
Grades 5-8

### Sharpening the Photo

Next the photo will be sharpened. Sharpening should be the last adjustment made to photos. The tool that is most often used for sharpening is one called the “unsharp mask.” It is an excellent tool for sharpening photos. The name “unsharp mask” comes from old darkroom photography techniques.

**STEP 23.** When sharpening photos, the image should be viewed at 100%. Select **View** → **Actual Pixels** if the photo is not already at 100%.

**STEP 24.** Select **Filter** → **Sharpen** → **Unsharp Mask**.



**STEP 25.** Unsharp Mask has three sliders that can be adjusted. They are the Amount, Radius, and Threshold. In this photo, adjust the Amount to 100, Radius to 0.8, and Threshold to 4.

Try moving the sliders to see the effect they have. A good Unsharp Mask amount to start with for most photos is Amount 120, Radius 1.0, and Threshold 4, then adjust them for each picture.

**STEP 26.** Click **OK** when done.

### Saving the Photo

There are several formats available when saving the photo. The format depends on what the photo will be used for. For this lesson, we can simply save it as a jpeg file.

**STEP 27.** Choose **File** → **Save As** and type a meaningful name for the file in the Save As dialog box

**STEP 28.** The JPEG Options dialog box will appear. **Click ok**. Be sure to leave the Format as JPEG (or .jpg depending on version).