

Creating Sliders in Geometer's Sketchpad

What's a slider?

A slider is a tool you can use to change the value of a parameter very easily. A typical slider has a handle you can drag left or right (or up and down) to increase or decrease the value of a parameter.

How do you make one in Geometer's Sketchpad?

Since Sketchpad doesn't come with a slider tool, you will need to make one from scratch. There are a few ways we could do this, but these instructions outline one of the simplest methods step by step.

1. First, set up a coordinate system by going to **Graph|Define Coordinate System**.
2. Select the **Point Tool** and construct a point anywhere you want.
3. With the point selected, select **Transform|Translate** and choose **Rectangular**. Now set the **Horizontal Fixed Distance** to 1.0 and the **Vertical Fixed Distance** to 0. Then select **Translate**. (Note: This will make your slider horizontal. Switching the values will make your slider vertical.)
4. The next step is to construct a horizontal line through the two points. This may be done by selecting both points and **Construct|Line** or using the **Straightedge Tool**.
5. Now use the **Point Tool** to construct a point on the line constructed in step 4. (Note: The point needs to be to the right of the translated point.)
6. Hide the horizontal line and the translated point by selecting each and **Display|Hide Objects**. (Note: Ctrl H is the keyboard short cut to hide objects.)
7. Construct a line segment connecting the two remaining points by selecting the two points and **Construct|Segment** or the **Straightedge Tool**.
8. Select the two points and **Measure|Abscissae (x)**.
9. However, we need the *difference* in their x-coordinates, so go to **Number|Calculate** and calculate $x_b - x_a$.
10. Now you just need to do a little clean up and your slider will be ready. Hide any objects that are not necessary, and change any labels to match you mathematical goals.