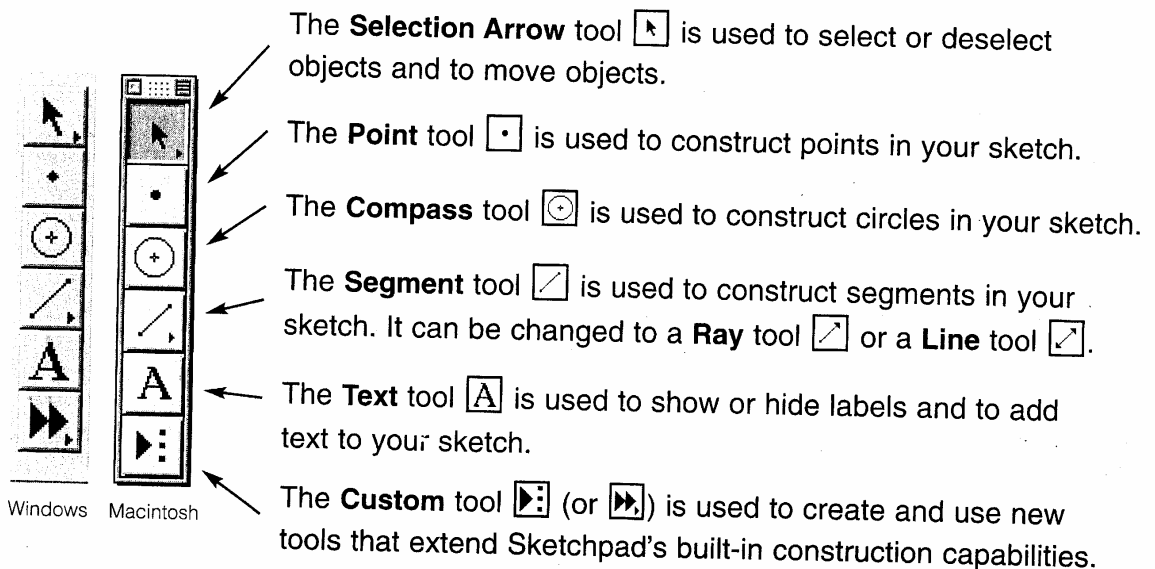


Getting to Know Sketchpad—Tour I



Welcome to The Geometer's Sketchpad®, an exciting and useful tool for students of all ages. With Sketchpad™, you can explore geometry in ways you never would be able to otherwise. In **Getting to Know Sketchpad—Tour I**, you will learn some Sketchpad skills that you will use in doing activities and projects. Feel free to explore on your own with the tools as you proceed through the tour.


1. Open a new sketch by choosing **New Sketch** from the File menu. You will use this tour to explore some features of Sketchpad.
2. On the left side of your sketch, you'll see Sketchpad's toolbox, shown below. You will use most of these tools during this tour.

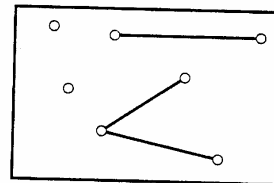



The list of words across the top of your screen (see below) is known as the Menu Bar. You will use the various menus to choose commands.

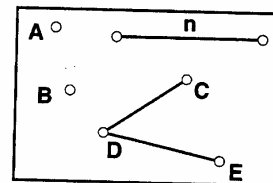
File Edit Display Construct Transform Measure Graph Help


3. Click on the **Point** tool  and move onto your sketch. Click in a couple of places to construct points.
4. Click on the **Segment** tool  and move onto your sketch. Click and drag to draw a segment.

5. Now construct an angle using the **Segment** tool . First, draw a segment. Then, starting from one of the segment's endpoints, draw another segment to create an angle. Your screen should look similar to the figure at right.




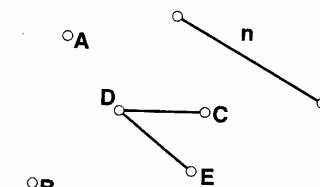
6. Click on the **Text** tool . To show a point's label, position the **Text** tool over the point and click. The hand will turn black. Show some of the point labels. Then click on the segment itself (not the endpoints) to show its label. Your screen should now look similar to the figure at right. Your labels may not be the same as the ones in this example.




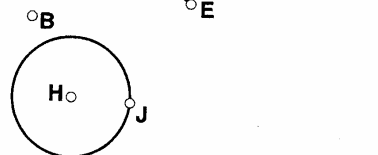
7. To move the objects or to change their size, click on the **Selection Arrow** tool . Using this tool, drag one of the endpoints of your segment to make the segment longer or shorter.


8. Drag one of the endpoints of a side of your angle to change the size of the angle.

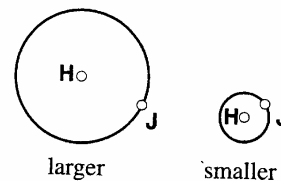
9. To move the segment, click on the segment itself. The segment should look similar to this when it is selected: . While it is selected, drag it. It should move around on your screen without changing its length.



10. Click on the **Compass** tool . Drag in your sketch to construct a circle. Notice that the center and a point on the circle are always given.

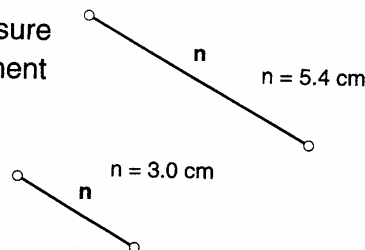


11. Click on the **Selection Arrow** tool  and drag the point on the circle to change the circle's size. Also try dragging the center point to change the size of the circle.


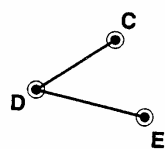
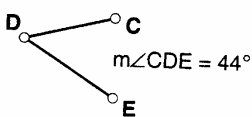
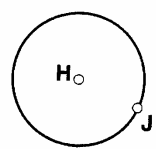



12. Drag the circle to change its location without changing its size (drag the circle, not the point on the circle).

13. Click on the segment to select it again. Go to the **Measure** menu and choose **Length**. The measure for your segment should appear on your screen.



14. Drag one of the endpoints of your segment. The measure on your screen should change as you drag.







15. Choose the **Selection Arrow** tool , then click in any blank space on your screen. This click deselects everything. You need everything deselected so that you can select the necessary points to measure your angle.
 16. Click on the three points that define the angle, with the vertex point your middle selection. When you have them all selected, they should look similar to the diagram at right.
 
 17. While the points are selected, go to the Measure menu and choose **Angle**. You should see the measure of your angle appear on your screen.
 
 18. Click in any blank space on your screen to deselect all objects. Drag the endpoint of one of the angle's sides and observe the changing angle measure. Drag the angle into an acute angle, a right angle, and then an obtuse angle.
 19. Click in any blank space to deselect objects. Click on the circle (not the point on the circle) to select it, then go to the Measure menu and choose **Circumference, Area, or Radius**. The measure you choose should appear on your screen.
 

Area \odot HJ = 7.5 cm²
- Note: If any measure appears on your screen in an undesirable location, you may drag it to a different position on the screen.*
20. Choose the **Text** tool  and double-click in a blank area at the top of your sketch to create a text box.
 21. Type your name(s) in this box.

Jonathan and Sammy

Summary

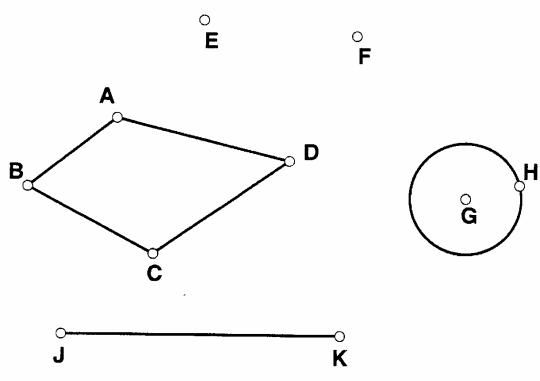
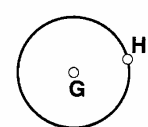
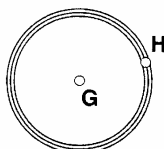
In this tour, you have learned to


- Use the **Selection Arrow** tool  to select and move objects
- Use the **Selection Arrow** tool  to deselect objects
- Use the **Point** tool  to construct points in your sketch
- Use the **Compass** tool  to construct circles in your sketch
- Use the **Segment** tool  to construct segments in your sketch
- Use the **Text** tool  to show labels and to add text to your sketch
- Change the size of objects in your sketch
- Measure objects in your sketch



Getting to Know Sketchpad—Tour 2

1. Open the sketch **Tour2.gsp**. You will use this sketch to explore some other features of Sketchpad.

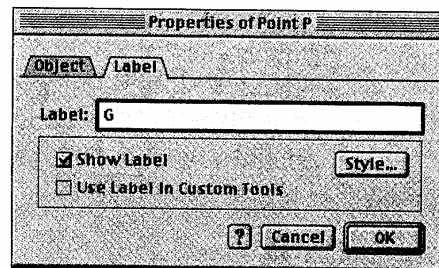
Use the **Selection Arrow** tool  while working on steps 2–5.

2. To construct a segment between two given points, click on points **E** and **F** in your sketch. Go to the Construct menu and choose **Segment** to construct \overline{EF} , the segment between **E** and **F**.
 
3. Click in any blank space in your sketch to deselect objects.
4. To construct a point on a circle, click on the circle in your sketch (not on point **H**). The circle should look like the figure at right when selected. Go to the Construct menu and choose **Point On Circle**. A new point should appear on your circle. Drag the new point. Notice that it moves freely around the circle, but you cannot drag it off the circle. Drag point **H**. Because point **H** is one of the control points of the circle, dragging it will change the size of the circle.
 
5. Click on \overline{JK} , go to the Construct menu, and choose **Point On Segment**. Try dragging the new point that appears on \overline{JK} . Notice that it will slide along \overline{JK} but you cannot move it off the segment.
 

Use the **Text** tool  while working on steps 6 and 7.

6. To move a label to a new position, position the **Text** tool  over the label, not on the object itself. An "A" will appear on the hand. Click on the letter **B** in your sketch. It should look like the figure on the right when you hold down the mouse button. Drag the **B** around. Notice that you can move the label, but you cannot move it very far from the object it names. Try dragging other labels in your sketch.
 
7. To rename a label, double-click on the label you wish to change. Double-click on the letter **G**. You should see the dialog box shown at right.

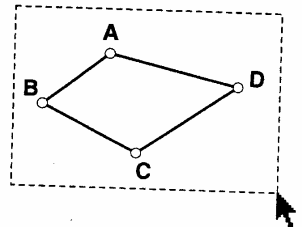
Type **P** to replace the letter **G**. Click **OK**. The new name for the center of your circle should appear.




Properties Dialog Box (Macintosh)

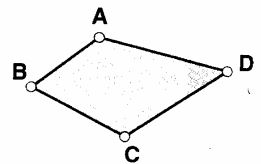
Use the **Selection Arrow** tool  while working on steps 8–21.

8. You've already seen how you can select an object by clicking on it. Now you will learn another way to select one or more objects. Position the arrow in a blank area above and to the left of the quadrilateral. Drag down and to the right so that a dashed box surrounds the quadrilateral.

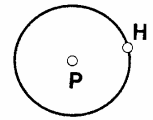


9. Release the mouse button. All objects inside the box should be selected. This method of selecting objects is known as “using a selection marquee.”
10. While it is still selected, drag any vertex or side of the quadrilateral. Notice that when all its parts are selected, you can move it without changing its shape.
11. Use the **Selection Arrow** tool  to click in any blank space to deselect all objects.

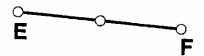
12. To construct a polygon interior, click on the vertex points **A**, **B**, **C**, and **D** in clockwise or counter-clockwise order. Go to the Construct menu and choose **Quadrilateral Interior**. While it is selected, you may change the shade or color of the interior by going to the Display menu and choosing **Color**.




13. To construct the circle interior, click on the circle (not on one of the points on the circle). Go to the Construct menu and choose **Circle Interior**. You may use the Display menu to change the shade of the circle interior if you like.

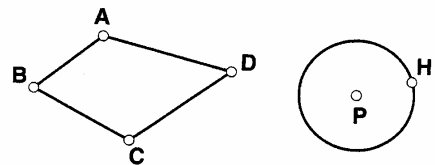


14. To construct the midpoint of a line segment, click on \overline{EF} . Go to the Construct menu and choose **Midpoint**. Drag point **F** and observe that the midpoint remains a midpoint regardless of the change in length of the segment.

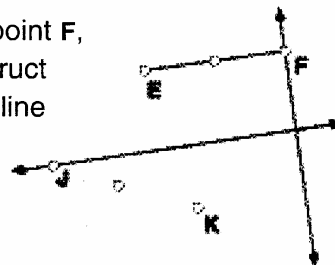



15. To hide \overline{JK} , click on \overline{JK} , go to the Display menu, and choose **Hide Segment**. The points **J** and **K** should remain even though the segment is hidden.

16. To hide several objects at once, you may use a selection marquee. Use the **Selection Arrow** tool  to drag a box around quadrilateral **ABCD** and circle **P**. Go to the Display menu and choose **Hide Objects**.





17. To construct a line perpendicular to segment \overline{EF} through point F , click on point F and then on segment \overline{EF} . Go to the Construct menu and choose **Perpendicular Line**. Drag point E . The line remains perpendicular.





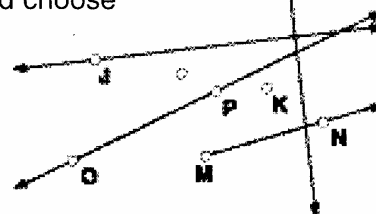
18. Use the **Selection Arrow** tool  to click in any blank space to deselect all objects.


19. To construct a line parallel to \overline{EF} through point J , click on point J and on \overline{EF} . Go to the Construct menu and choose **Parallel Line**. Drag point E . The lines remain parallel.


20. To construct a ray in your sketch, press and hold down the mouse button on the **Segment** tool . Drag to the right and choose the **Ray** tool . Click and drag to draw a ray in your sketch.



21. To construct a line in your sketch, press and hold down the mouse button on the **Ray** tool . Drag to the right and choose the **Line** tool . Drag to draw a line in your sketch.



22. Click on the **Selection Arrow** tool . Drag one of the control points that appears on your ray or line. You should be able to change the direction of the line or ray when you drag.

23. Click on the **Text** tool  and double-click in a blank space at the top of your sketch to make a text box.

24. Type your name(s) inside the box.

Sally and Felicity Ann



Summary

In this tour, you have learned to

- Construct a segment between two points using the Construct menu
- Construct a point on an object
- Construct the midpoint of a segment
- Construct rays and lines
- Construct perpendicular and parallel lines
- Construct circle and polygon interiors
- Move labels and change the name of a label
- Select objects by using a selection marquee
- Hide objects