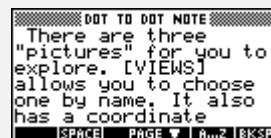


**Objectives:**

Using the **DOT TO DOT** applet the student will be able to explore points, slopes and equations of lines that enclose the figures. It is also possible for the student to investigate the piecewise functions that would create the exact drawing.

**Functionality:**

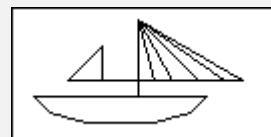
When the student selects **START**, the **NOTE** view for the **DOT TO DOT** applet will be displayed.



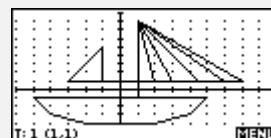
**VIEWS** allows the student to choose the graph of a boat, a flower, or fishes, and to display the axes with the grid on.



Choosing **Boat** from the **VIEWS** will display the picture.

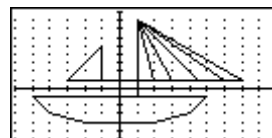
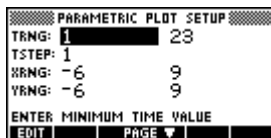
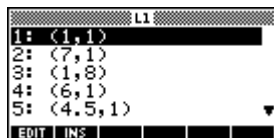


Choosing **Coordinates** places axes and grid on the graph.



- Have the student identify the endpoints of each line segment and then order them as if to play connect the dot. Create the picture on graph paper by plotting and connecting the list of ordered pairs.
- Have the student find the slope of each line segment in the picture. The student could write the equations of the lines that create the outlines the picture. Piecewise functions can be used to eliminate unnecessary portions of the lines. Eg. Entering  $F1(X)=2x+5/(X>-2 \text{ AND } X<2)$  will plot the line between -2 and 2.

Students can create pictures of their own on a sheet of graph paper and then record in a list the coordinates of each corner point in order as if playing connect the dot. In the list L1, enter the ordered pairs. After choosing an appropriate window for the sketch, plot the set of ordered pairs in **Parametric** mode where  $X1(T) = L1(T)$  and  $Y1(T)=0$ .



Note: It is important when choosing an appropriate window that the T range is from 1 to the total number of ordered pairs in your list with a step of 1.

Programs associated with this applet:

- .DO.B, .DO.FL, .DO.FI, .DO.C, .DO.S, .DO.SV