**Activity 1.2.2 Describing Straight Objects**

In this activity you will build upon what you learned in previous activity by relating the notion of the **magnitude and direction** of vectors to that of **lines, rays, and segments**. You will explore whether these objects have magnitude and direction and what this means in real-world contexts.

1. Open GeoGebra and select the *Algebra & Graphics* view from the *Perspectives* menu.

2. Display the grid by selecting the **Move Tool** and clicking the drop down arrow by *Graphics* as shown below.



3. Select the Line Tool (as shown to the left) to place points on the coordinate. Select the appropriate tool to construct a segment, a line, a ray, and a vector. Make sure that the three objects do not overlap, so that you can focus on each of them. Use the Move Tool to select a point and translate it dynamically to alter the characteristics of the object such as slope, direction, *x*- and *y*- intercepts, etc.



4. Based on your understanding of **segment, line, ray**, and **vector** as well as the space occupied by each object in the GeoGebra sketch, answer the following questions that relating each object to both **magnitude** and **direction**.

Organize your conjectures pertaining to each object in the table below:

|  |  |  |
| --- | --- | --- |
| **Object** | **Does it have magnitude?****(Explain your reasoning)** | **Does it have direction?****(Explain your reasoning)** |
| **Segment** |  |  |
| **Line**  |  |  |
| **Ray** |  |  |
| **Vector** |  |  |