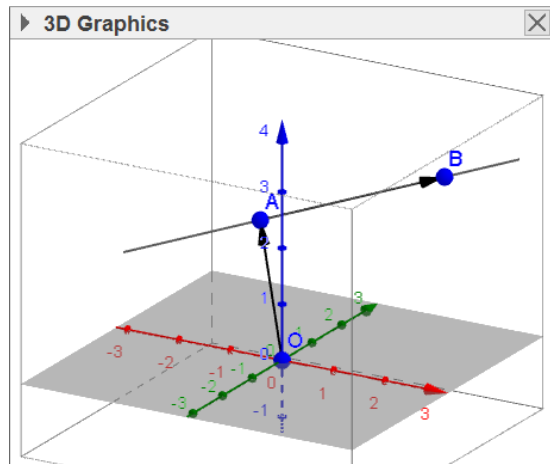


MEI How to Guides for GeoGebra

Vector equation of a line in 3D

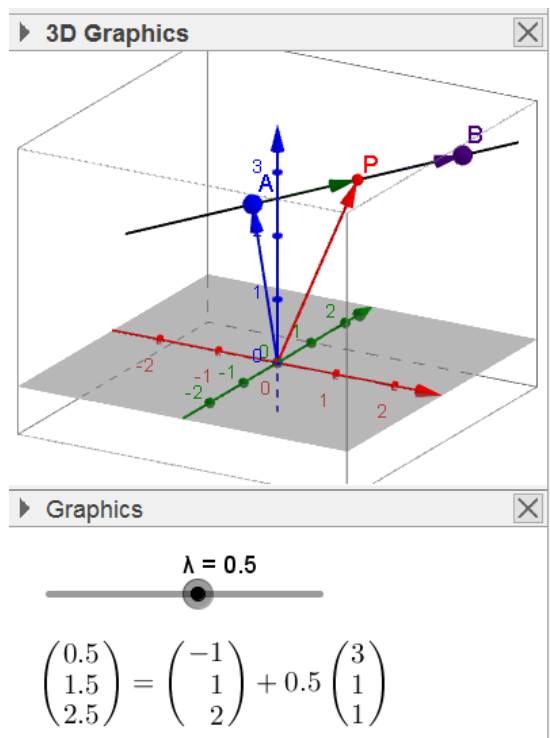
Creating the line based on points A and B

- 1 Enable 3D: **View > 3D Graphics**
- 2 In the Input bar enter: $O=(0,0,0)$
- 3 In the Input bar enter: $A=(-1,1,2)$
- 4 In the Input bar enter: $B=(2,2,3)$
- 5 Use the **Vector** tool (3rd menu) to create the vectors OA and AB . Rename these vectors OA and AB .
- 6 Use the **Line** tool (3rd menu) to create the line through A and B .



Creating a dynamic point P

- 7 In the Graphics View create a slider and name it λ
- 8 In the Input bar enter: $P=A+\lambda*AB$
- 9 Use the **Vector** tool (3rd menu) to create the vectors OP and AP . Rename these vectors as OP and AP .
- 10 In the Graphics view add a **Text** box (10th menu). Switch the LaTeX formula on and enter $OP = OA + \lambda AB$. OP , OA , λ and AB should be selected from the objects menu.
- 11 Hide the axes and the point O in the Graphics view. The position of the Algebra, Graphics and 3D Graphics panels can be adjusted by dragging the panel title bars.



View on GeoGebraTube: www.geogebra.org/m/2593371