Das Assoziativgesetz der Vektoraddition

C. Gnandt

(www.christoph-gnandt.de)

Karl-Theodor-v.-Dalberg-Gymnasium Aschaffenburg

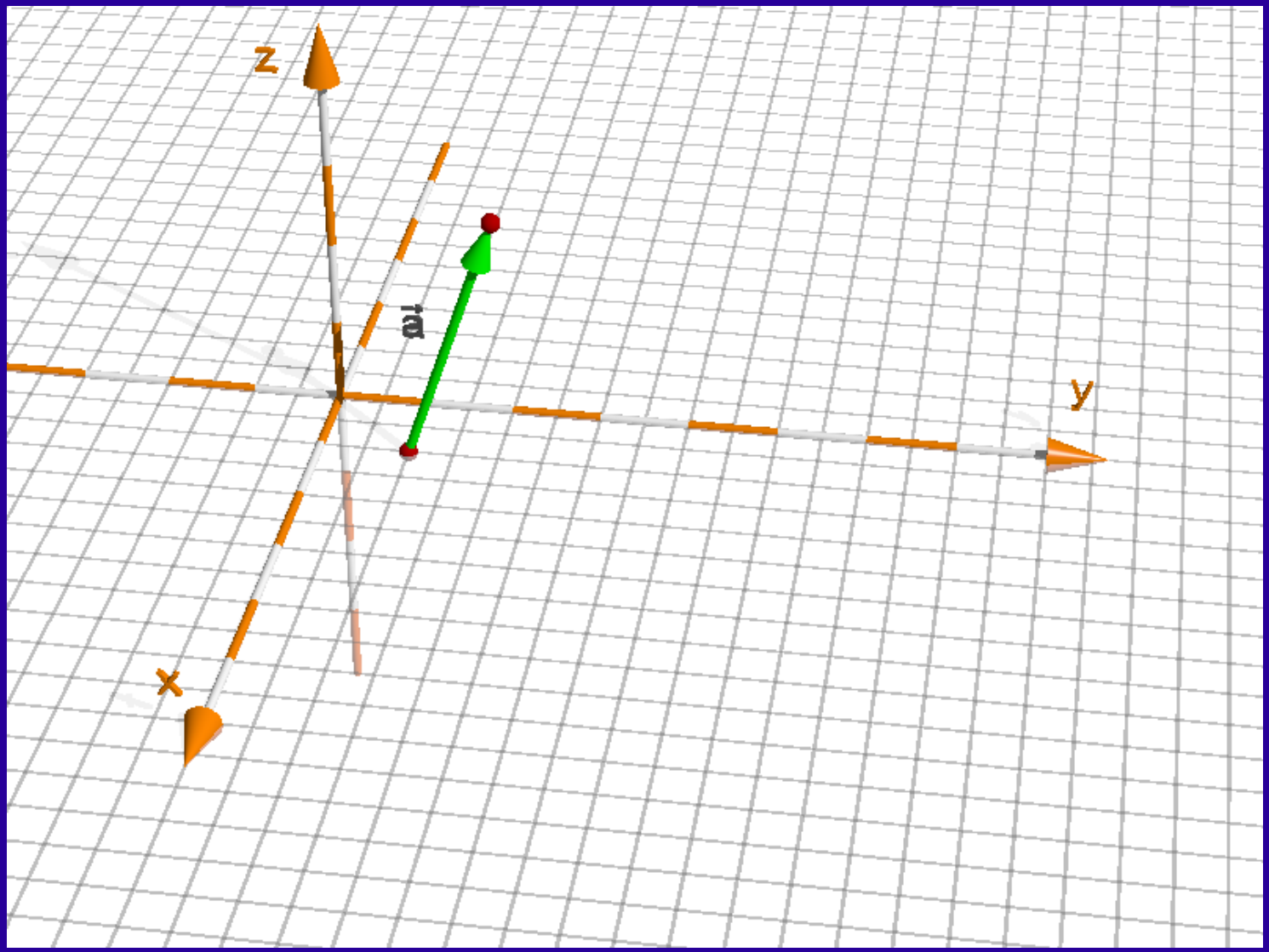
(www.dalberg-gymnasium.de)

Addition von Zahlen

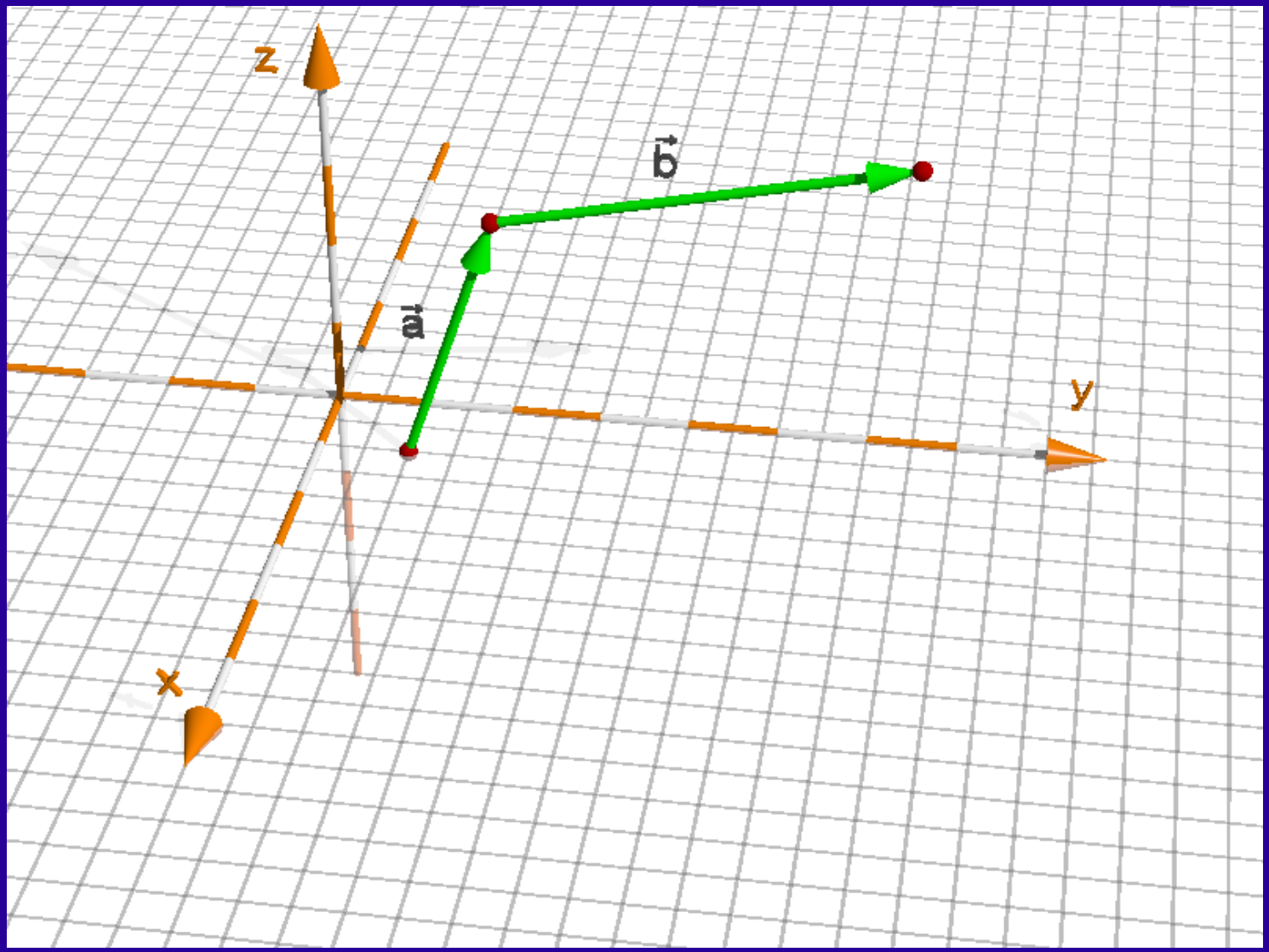
$$(a + b) + c = a + (b + c)$$

Gilt das auch für Vektoren?

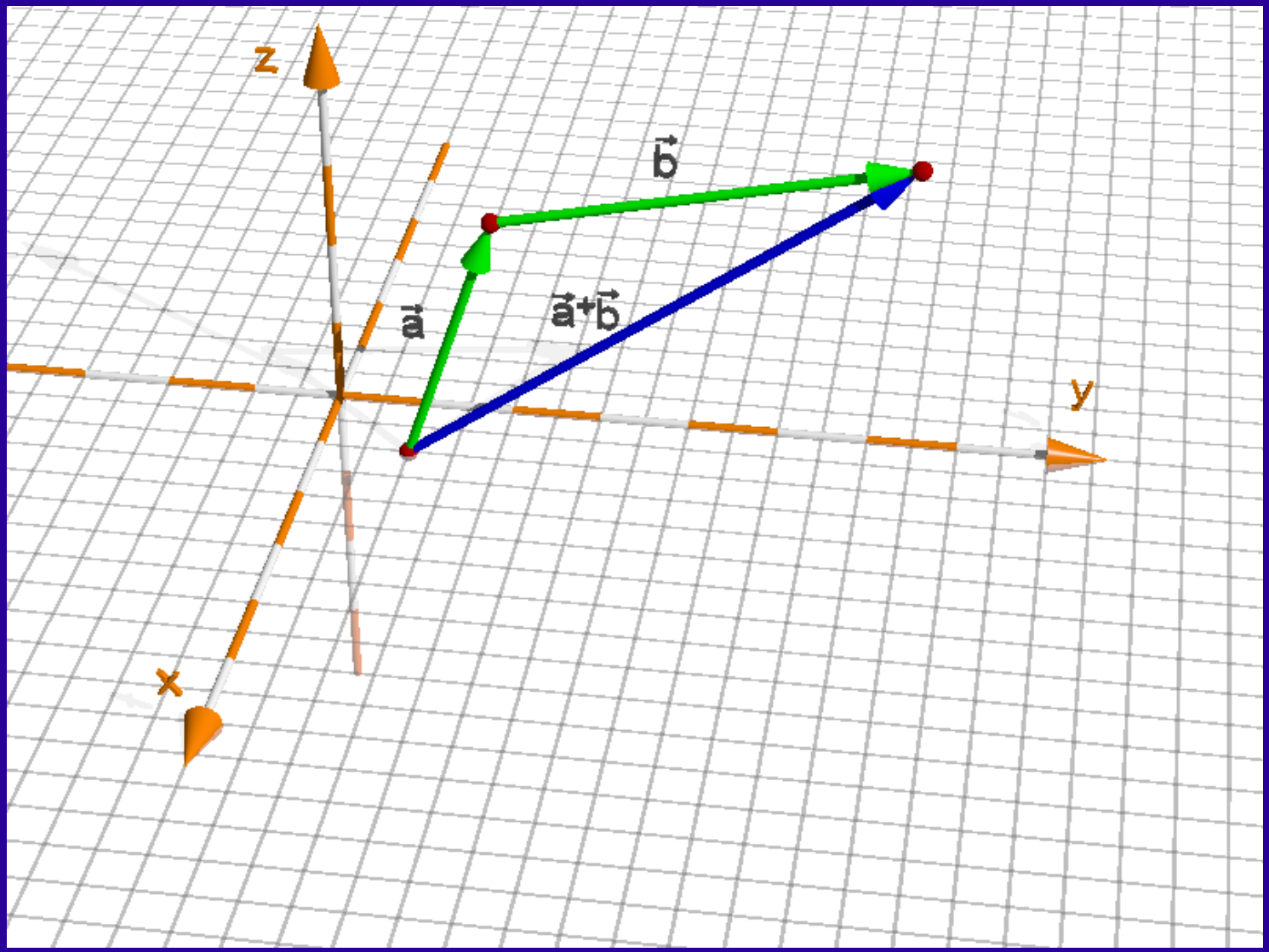
$\vec{a}$



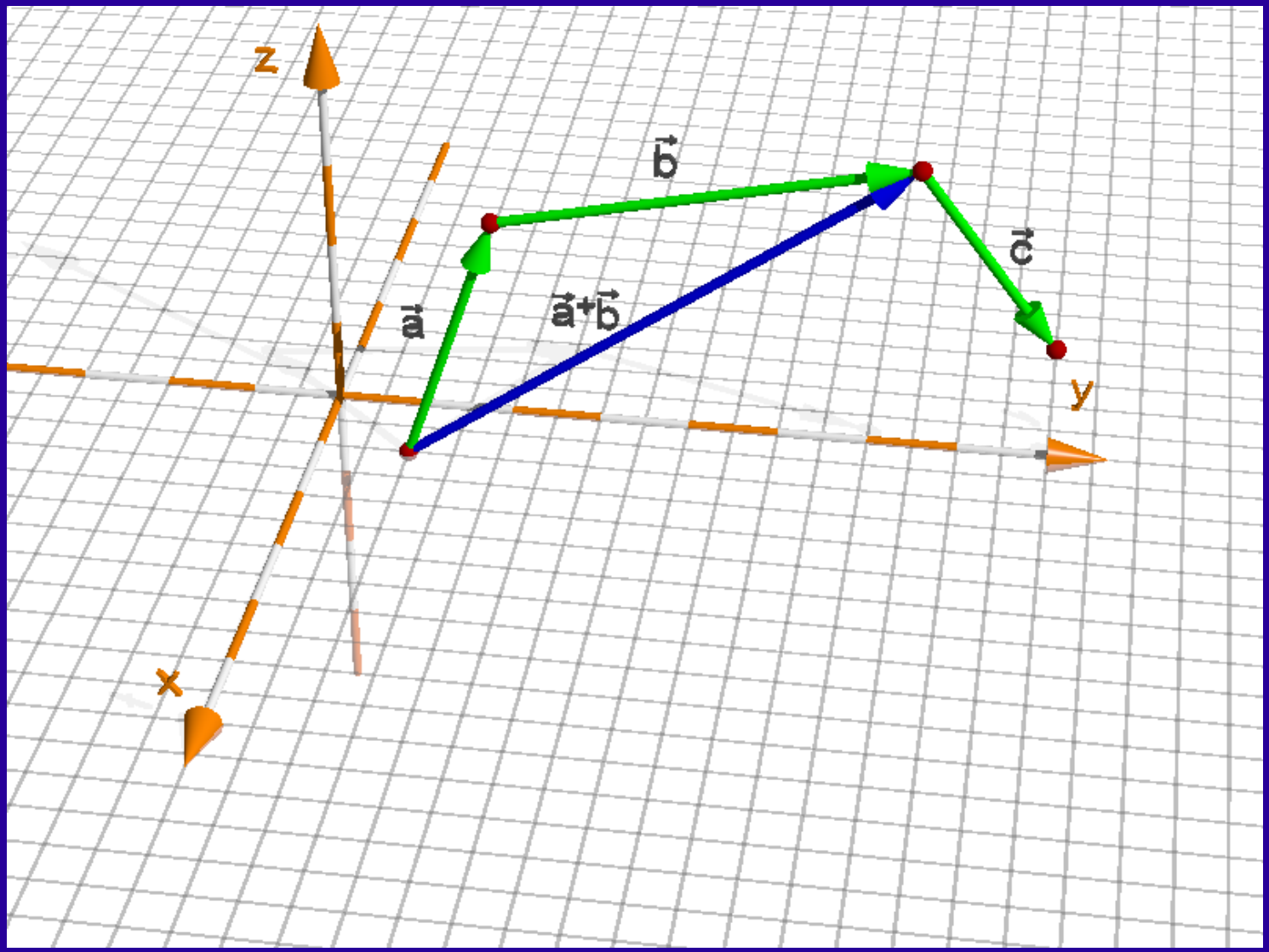
$\vec{a} + \vec{b}$



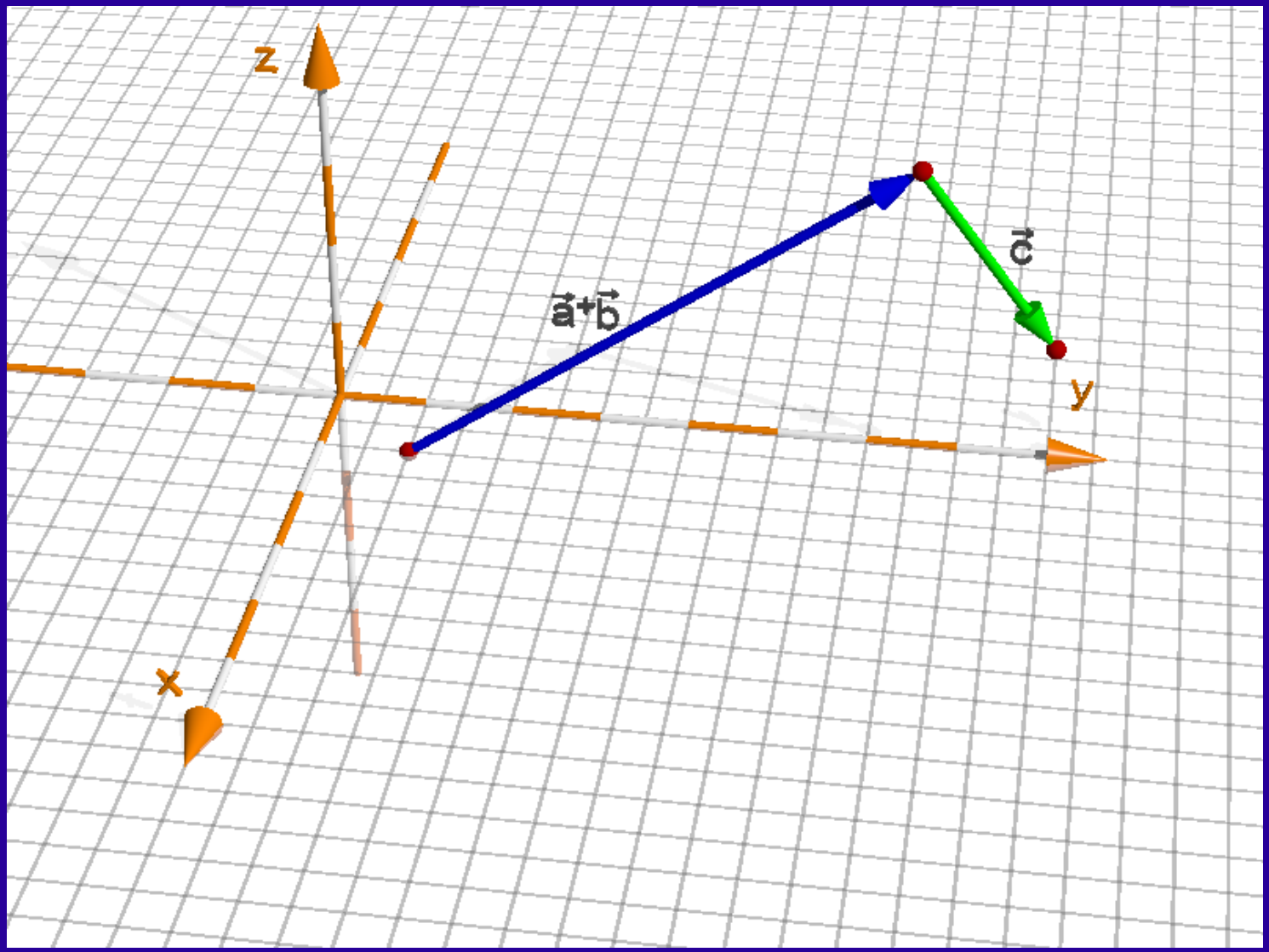
$\vec{a} + \vec{b}$



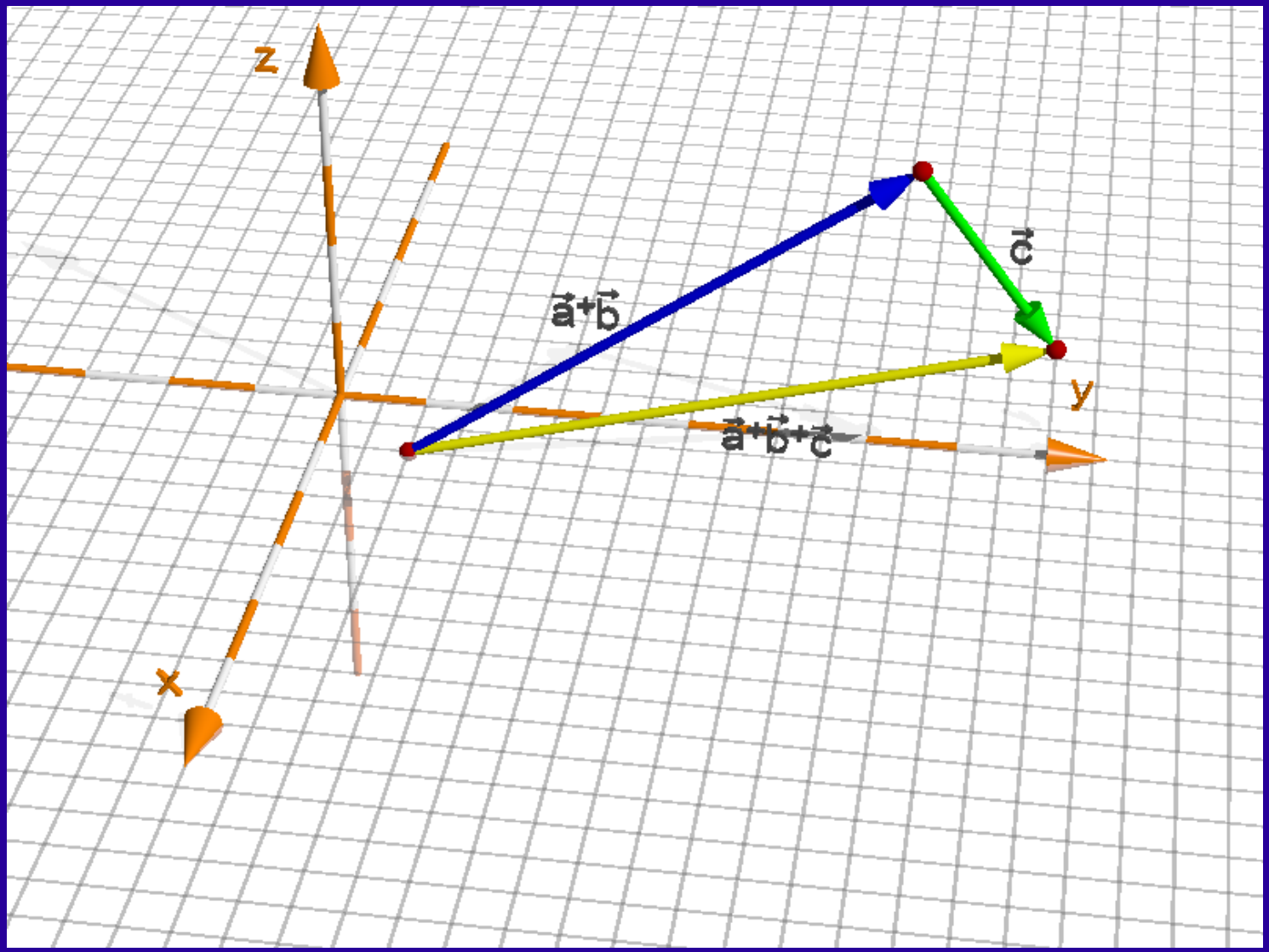
$(\vec{a} + \vec{b}) + \vec{c}$



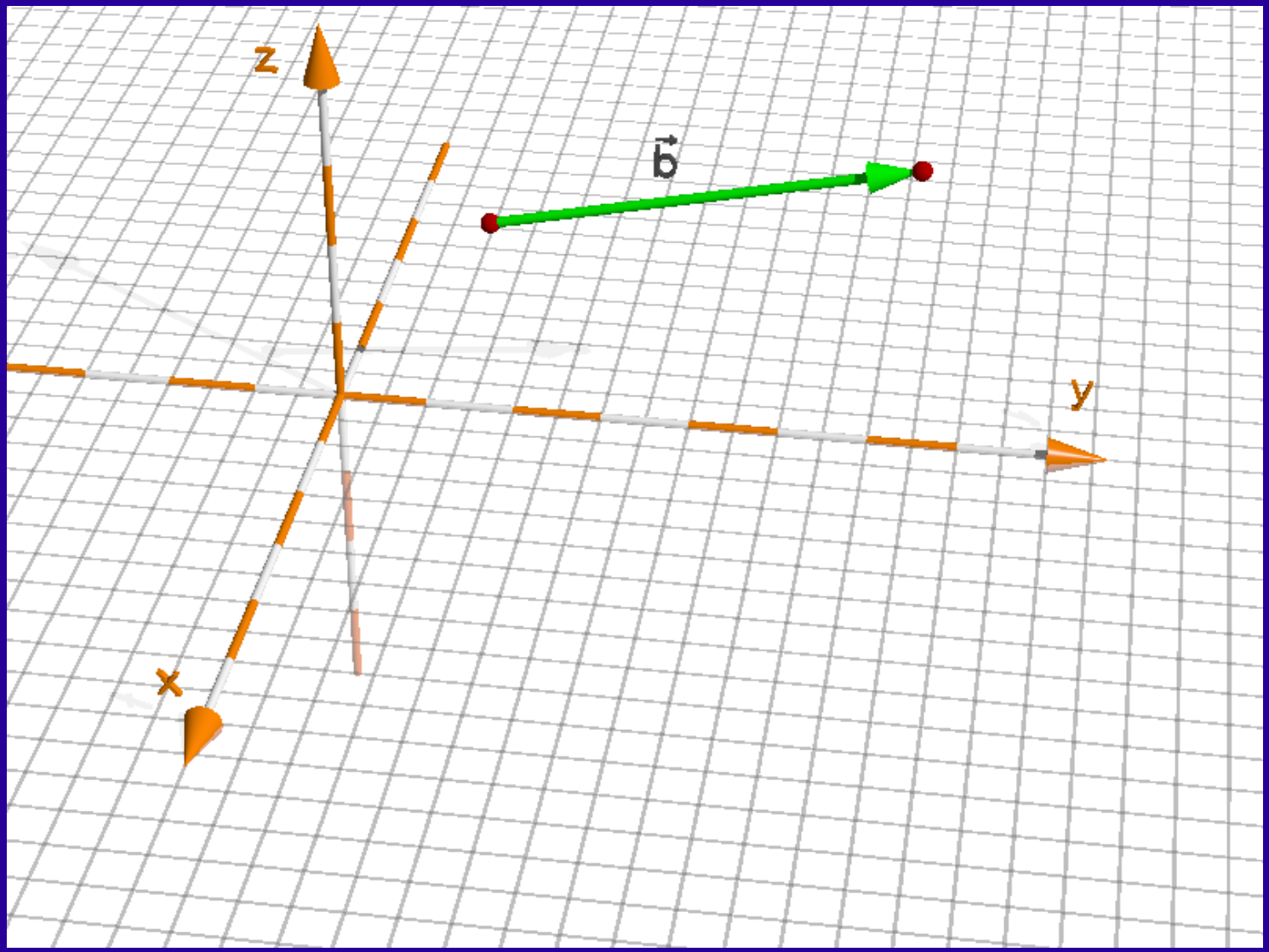
$(\vec{a} + \vec{b}) + \vec{c}$



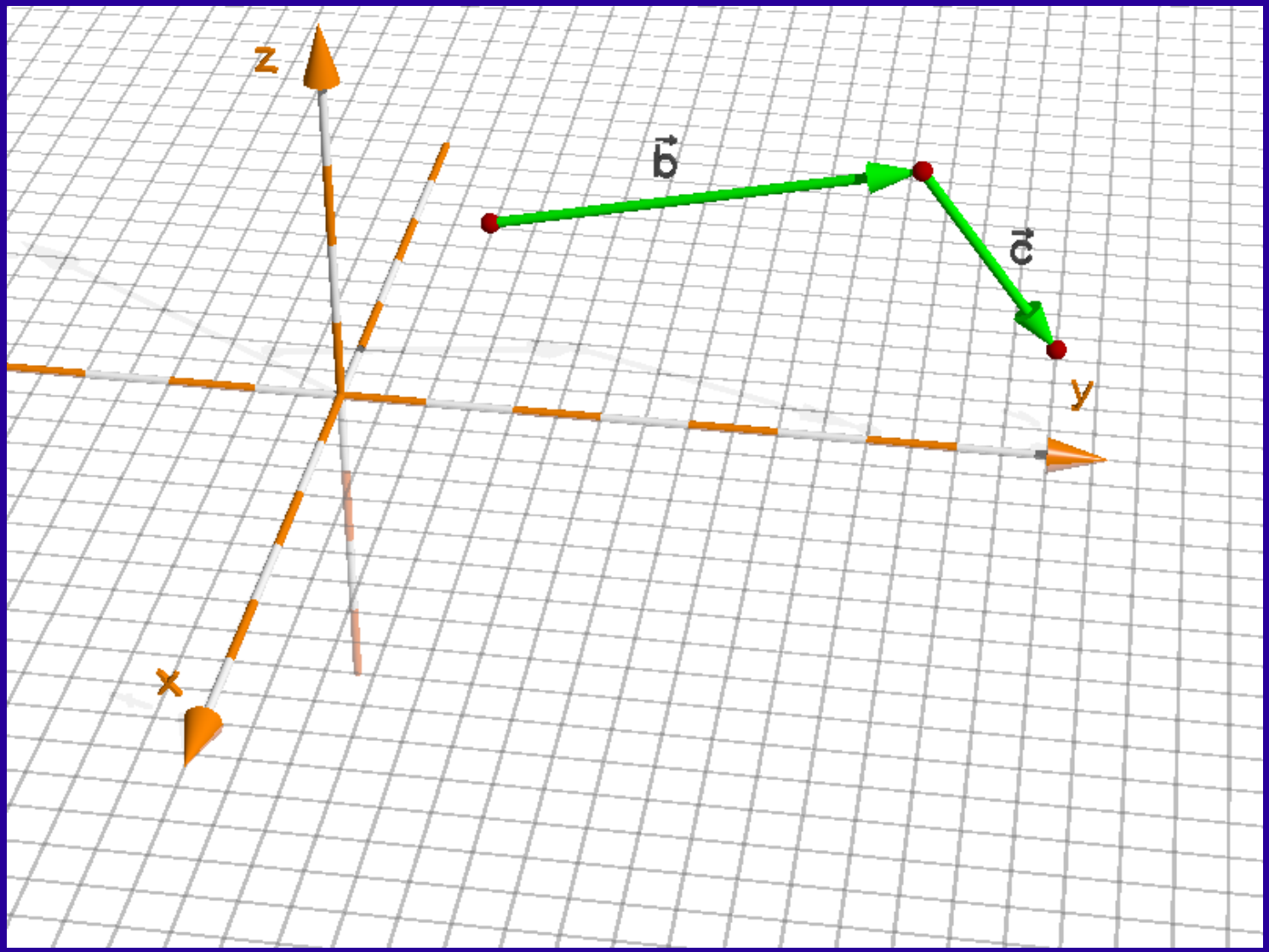
$(\vec{a} + \vec{b}) + \vec{c}$



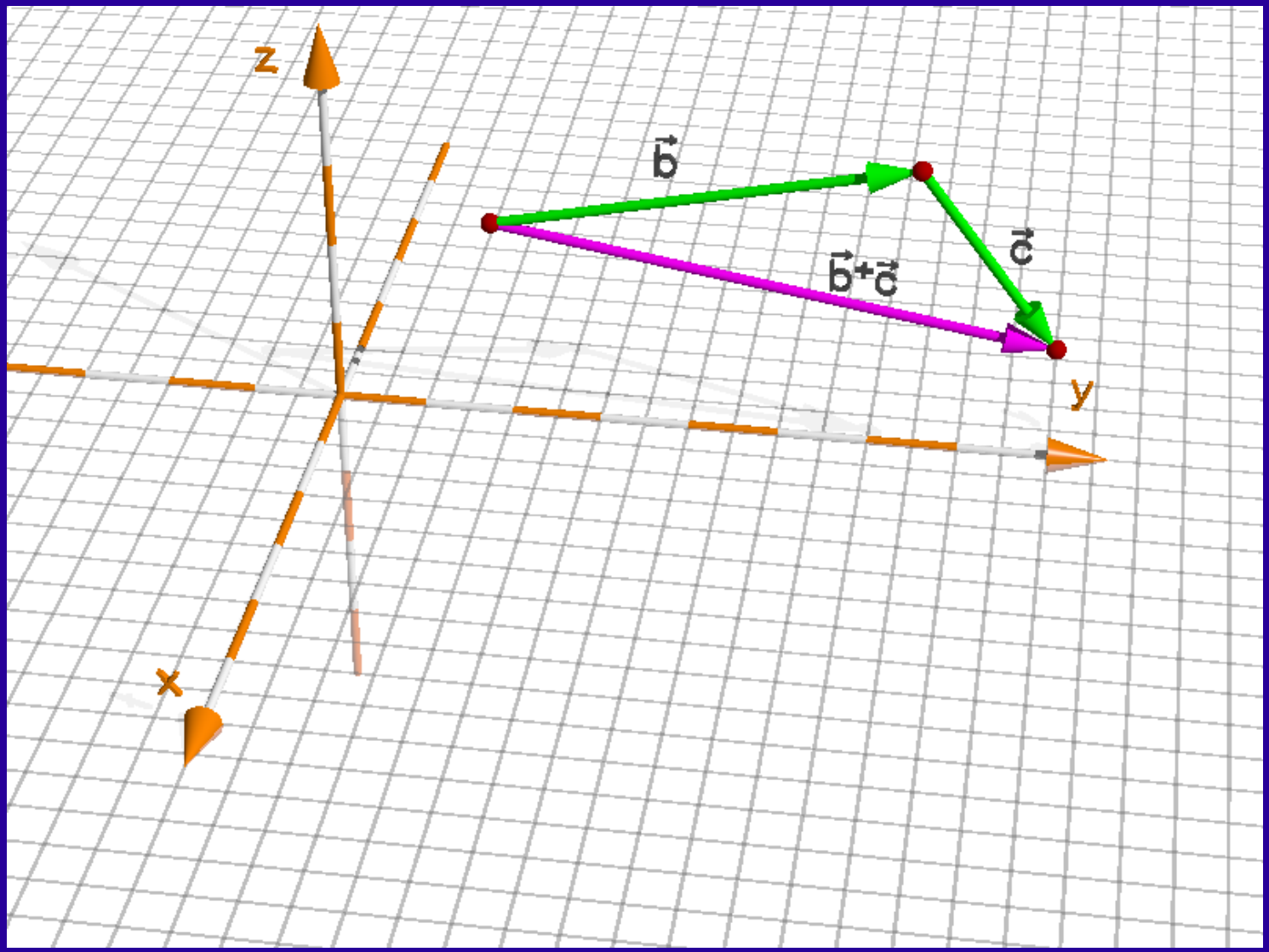
$\vec{b}$



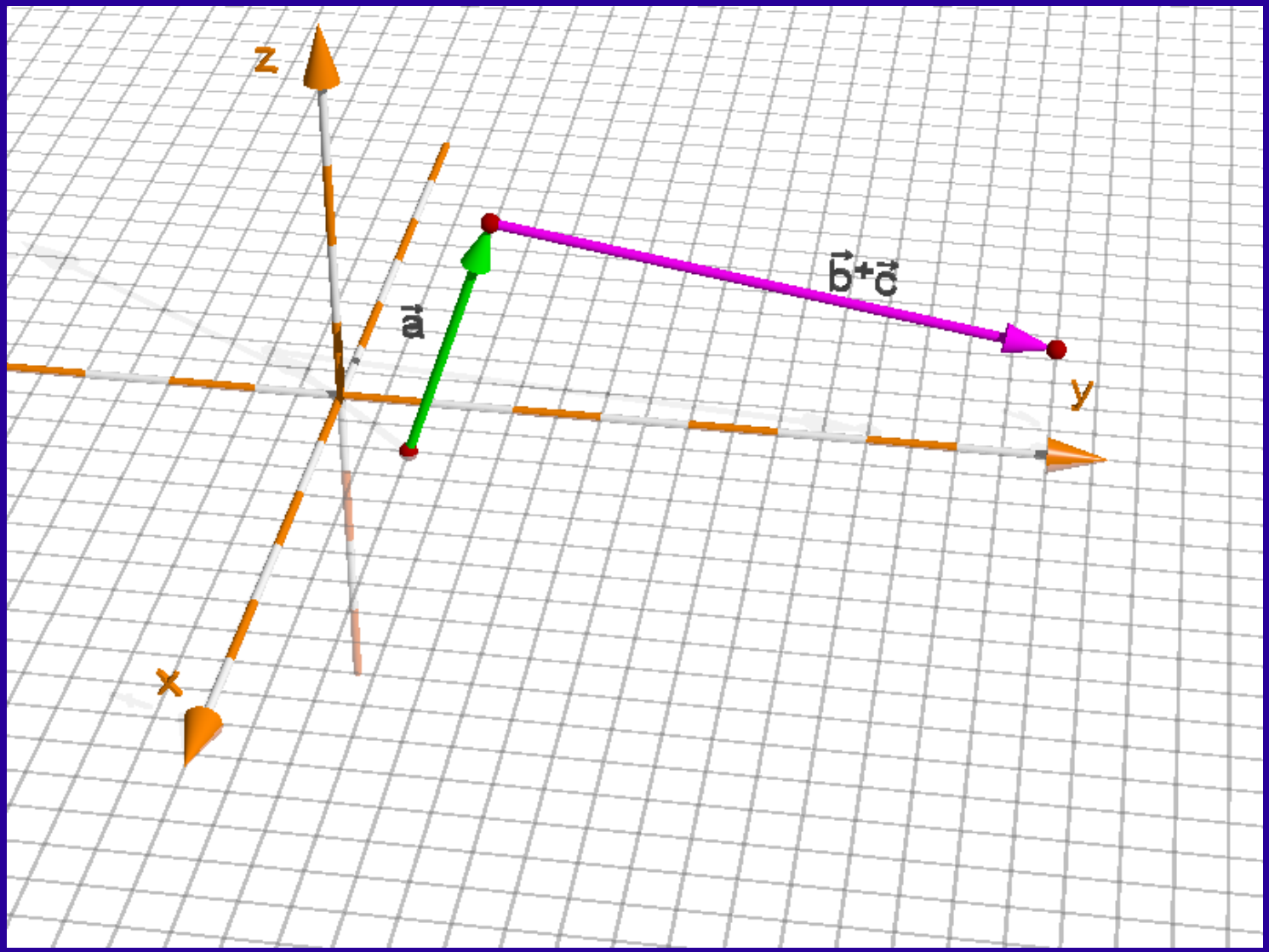
$\vec{b} + \vec{c}$



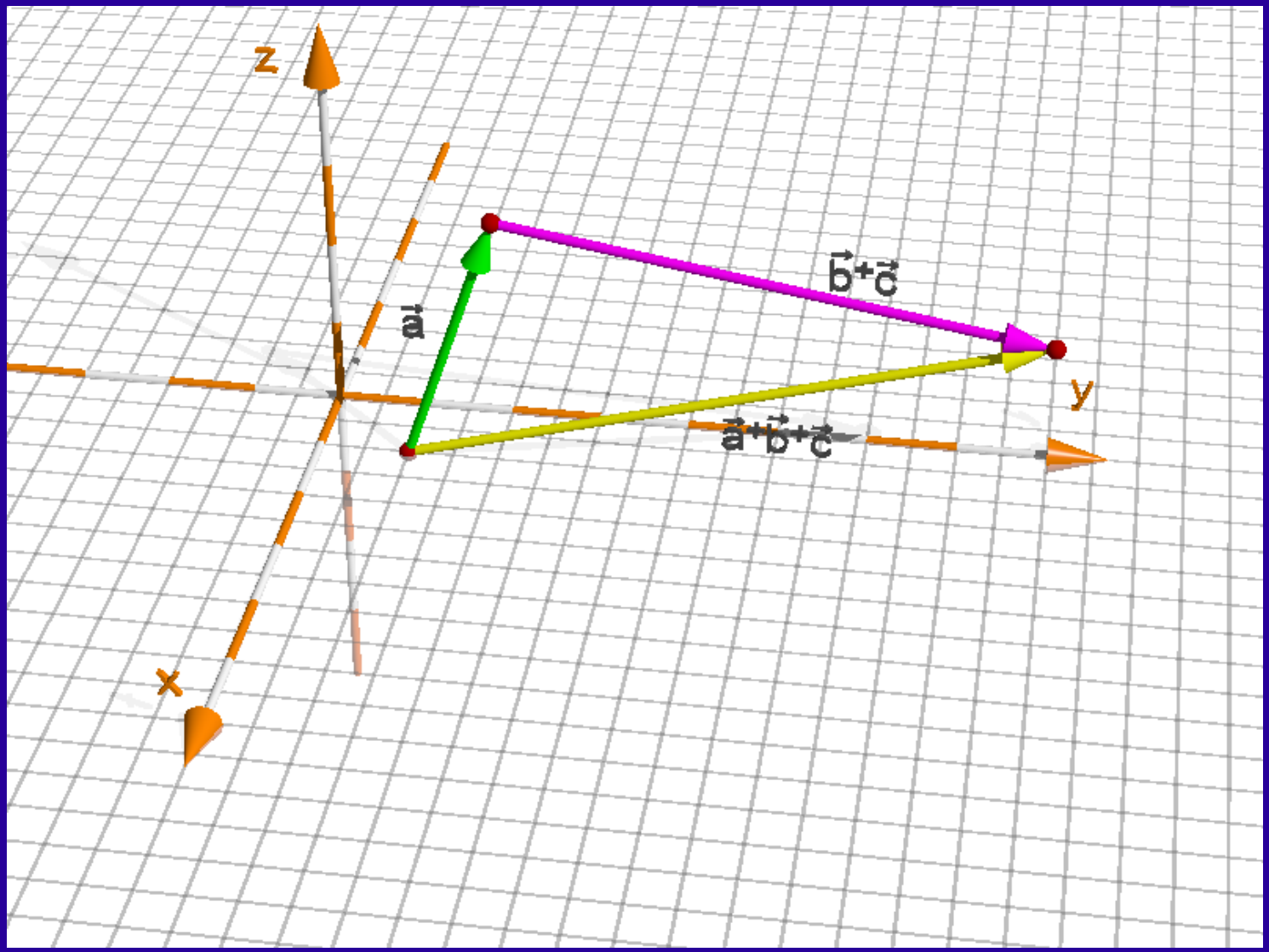
$\vec{b} + \vec{c}$



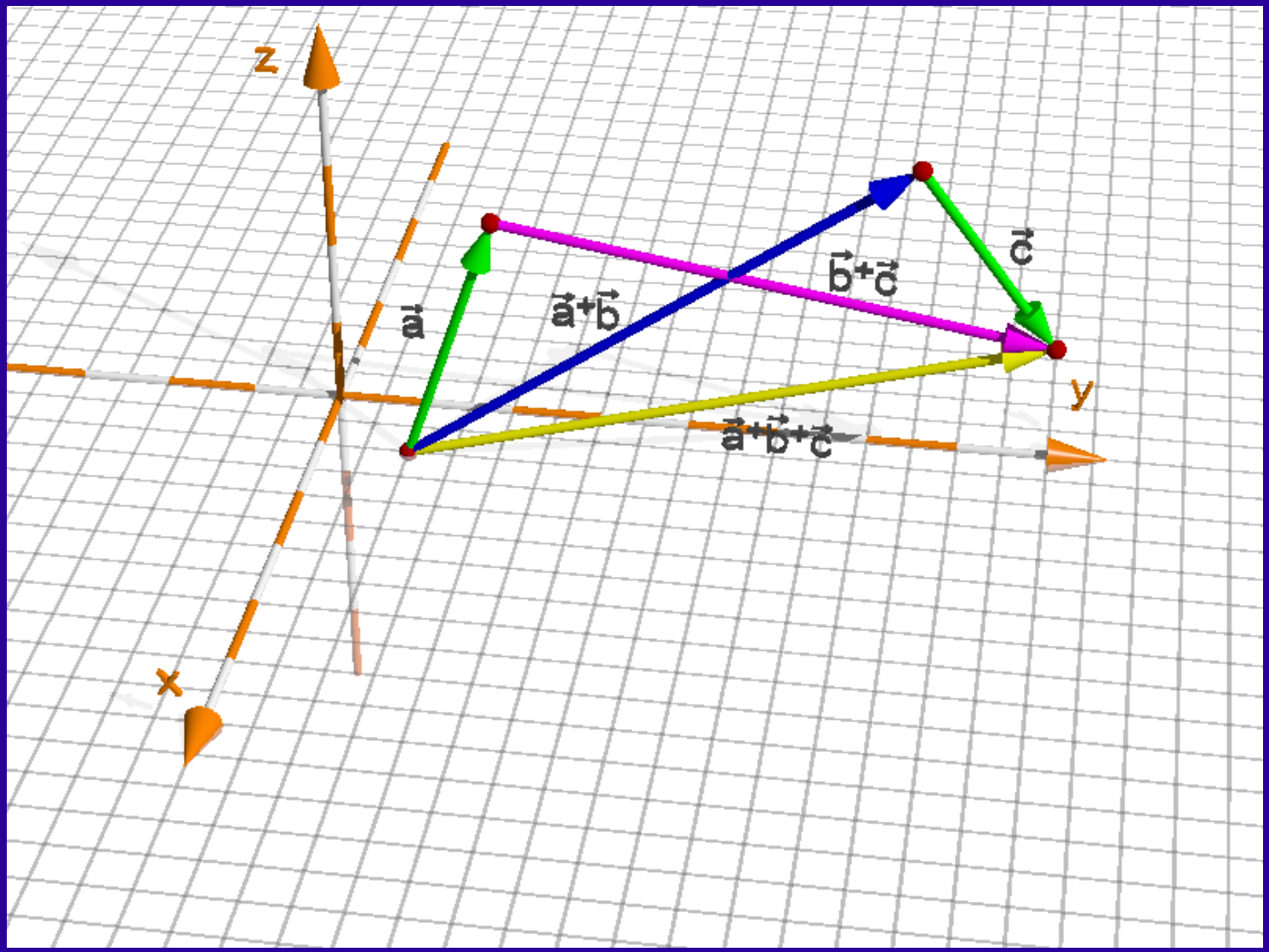
$\vec{a} + (\vec{b} + \vec{c})$



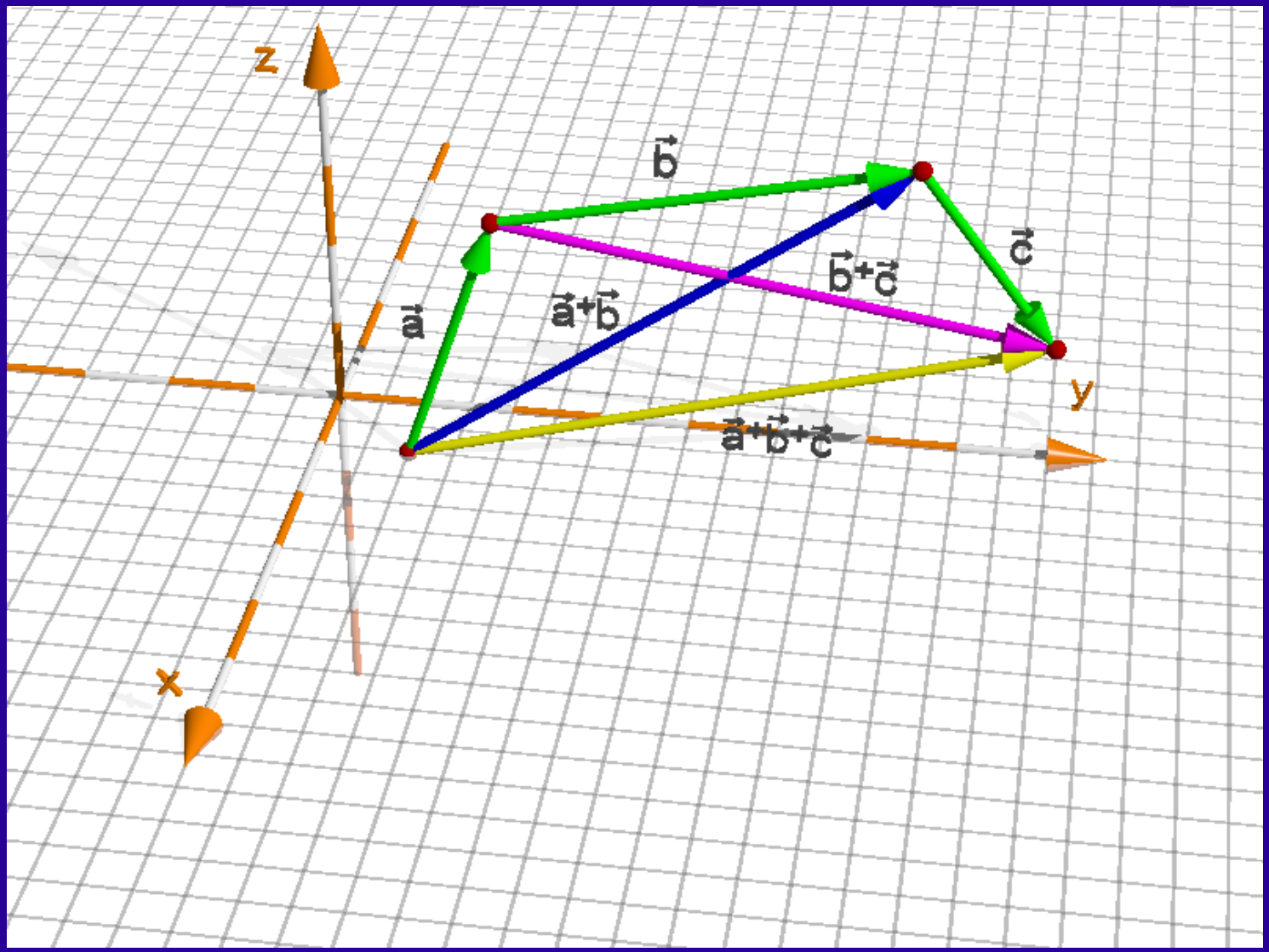
$\vec{a} + (\vec{b} + \vec{c})$



$(\vec{a} + \vec{b}) + \vec{c} = \vec{a} + (\vec{b} + \vec{c})$



$(\vec{a} + \vec{b}) + \vec{c} = \vec{a} + (\vec{b} + \vec{c})$



Assoziativgesetz für Vektoren

$$(\vec{a} + \vec{b}) + \vec{c} = \vec{a} + (\vec{b} + \vec{c})$$

Quellen:

- Die Abbildungen wurden mit dem Ray-Tracing-Programm

  POV-Ray™ 3.6 - Persistence of Vision™

  erstellt (www.povray.org)
- Koordinatensystem und Vektor-Makros nach Vorlagen von **Friedrich A. Lohmüller** (www.f-lohmueller.de)