

Guide to creating visual vector simulations

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With the help of AI-powered web applications, vector visualization helps transform abstract concepts into clear, accessible learning materials for students. Using only simple shapes, harmonious colors, and fluid motion, teachers can illustrate complex content visually and logically. Below is a guide to creating vector visualizations.

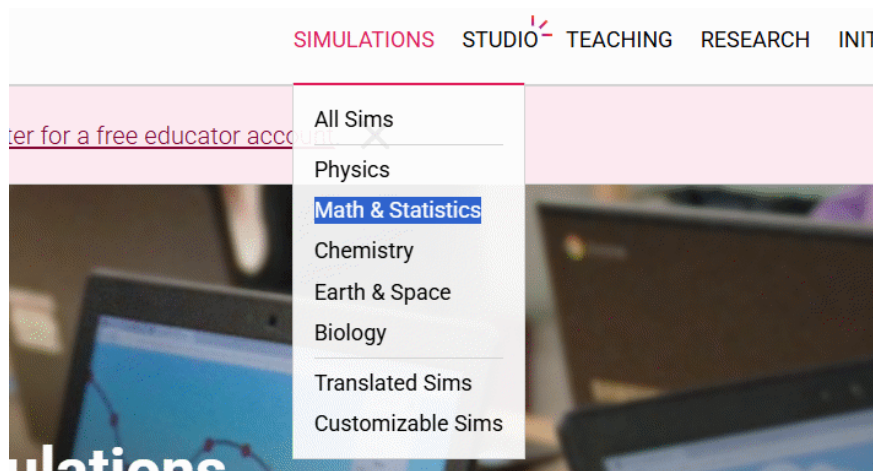
How to create visual vector simulations for Math

Step 1:

First, you need to click on the link below to access the website; no account registration is required to use it.

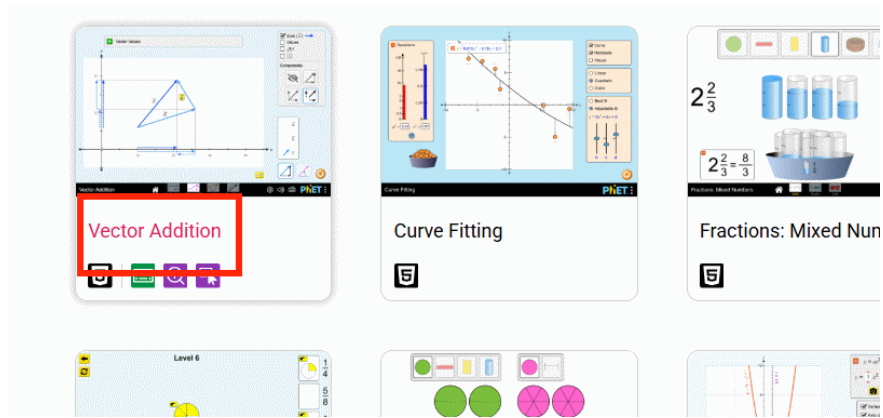
<https://phet.colorado.edu/>

On the website interface, click on **Simulations** and then select **Math & Statistics** from the displayed list.

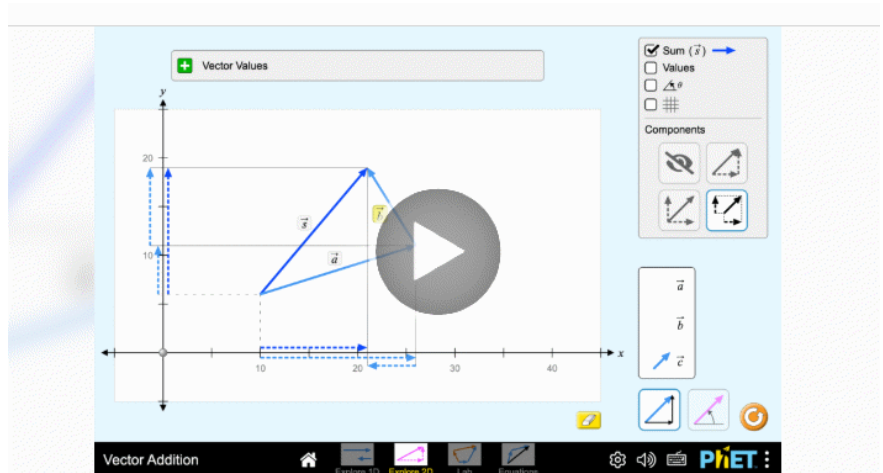


Step 2:

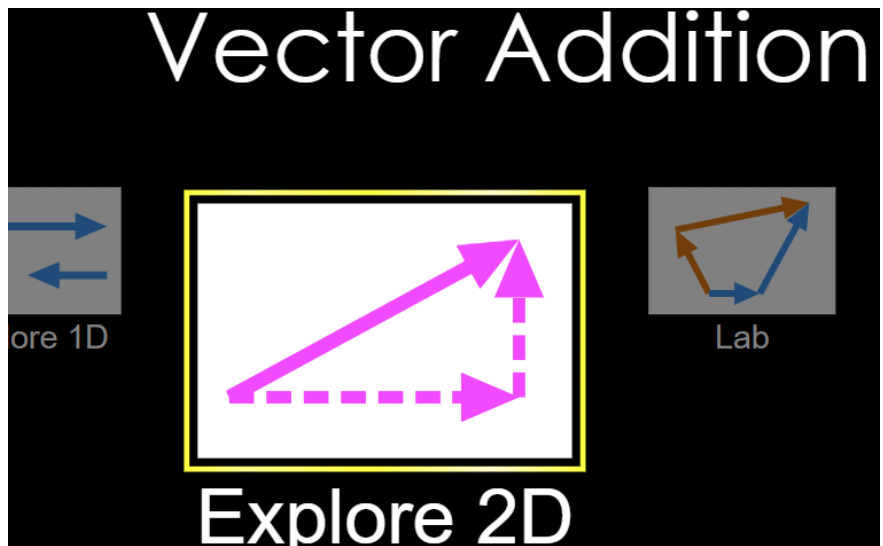
A new interface will appear, and teachers will see many simulations for mathematics. Scroll down and click on **Vector Addition**.



In the vector simulation interface, you need to **press the play button** in the center of the webpage as shown below.

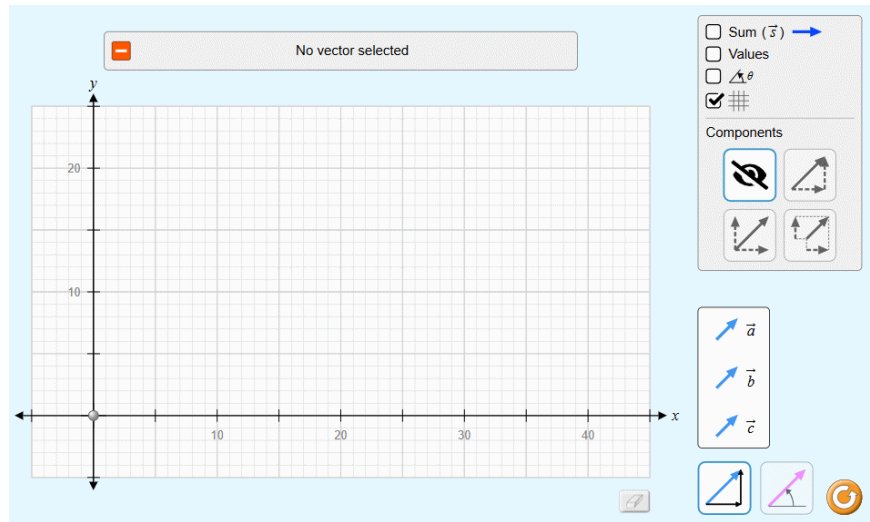


Then the teacher will see the option to create a vector; you can select **the 2D vector template** to display the vector on the Oxy coordinate plane as in the lesson.



Step 3:

In the new interface, on the right we will see the vector drawing tool, and in the center is the vector display interface.

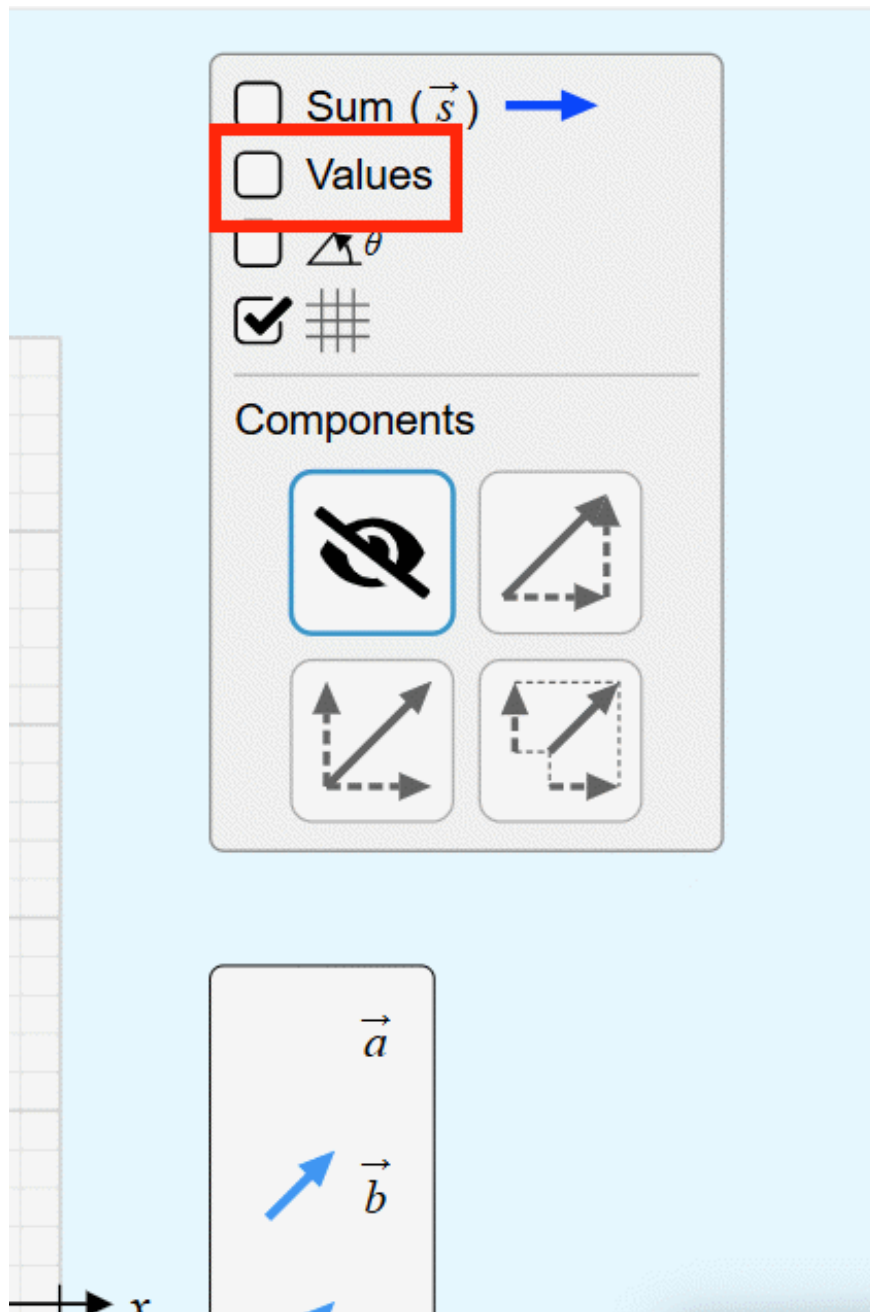


You will **click on the vector** on the right side and then **drag and drop it into the graph interface in the center**. Teachers set the vector parameters to match the coordinates in the lesson or the coordinates they want to represent to the students.

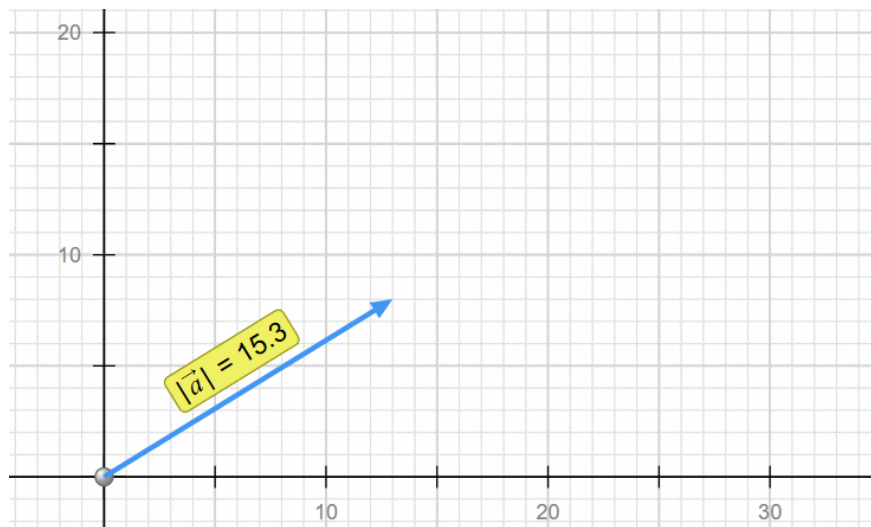


Step 4:

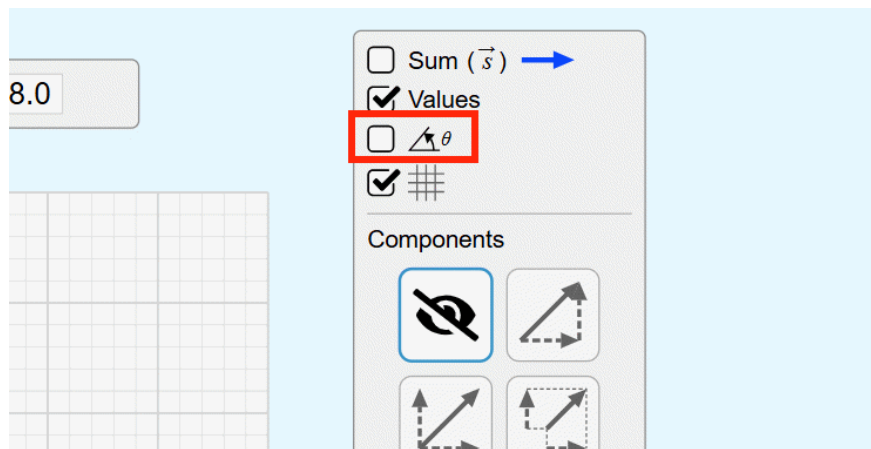
The teacher waits for the students to finish the calculations, then proceeds to check the results. The teacher looks at the right side of the interface and **clicks on the "Values" box** to display the values.



Immediately afterwards, the result showing the vector length according to the vector's coordinates will **appear** in the graph interface .



To continue viewing the vector's angle, **click the angle icon** in the right-hand sidebar, as shown in the image.



The graphic on the side now shows the angle of the vector as shown below.



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