Web Li

Home | AP Physic

Shown below are websites related to **Phy**

Measurement Topics

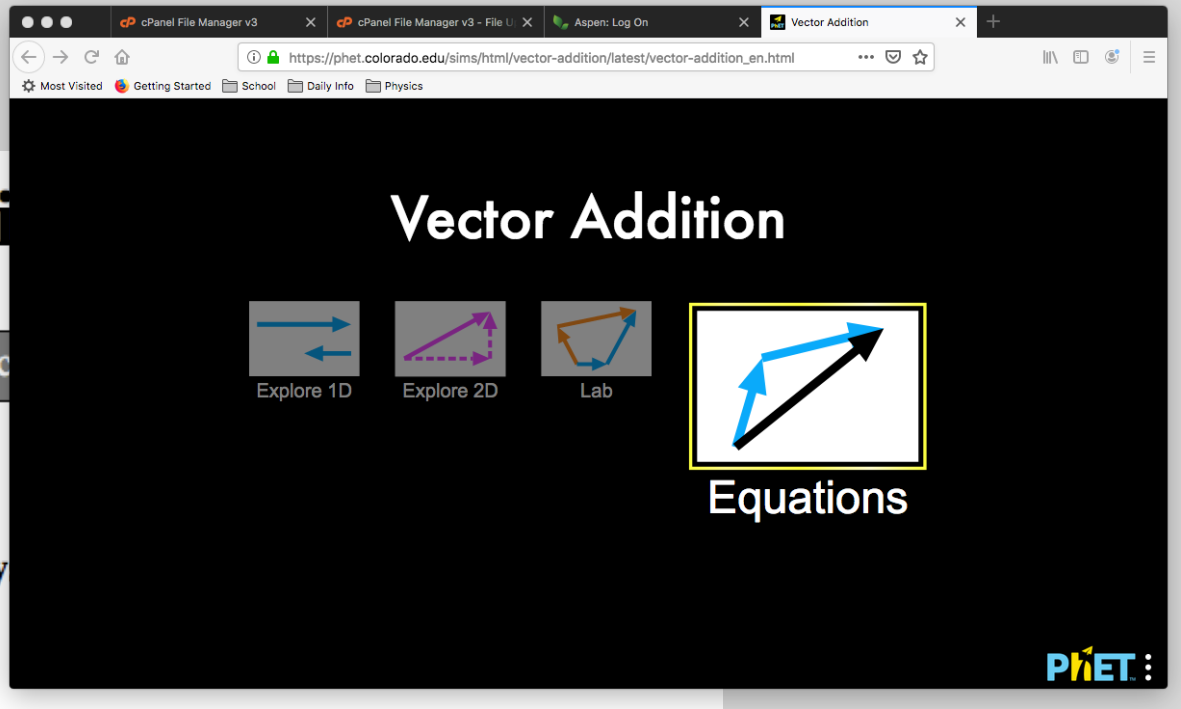
NIST - Constants, Units, and Uncertainty from the National Institue of Standards a
Unit Conversions Tutorial - Interactive dimensional analysis (factor label method)
NIST Clock - Official Time from the National Institue of Standards and Technology
Powers of Ten - Images zooming in by factor of ten; good "order of magnitude" de

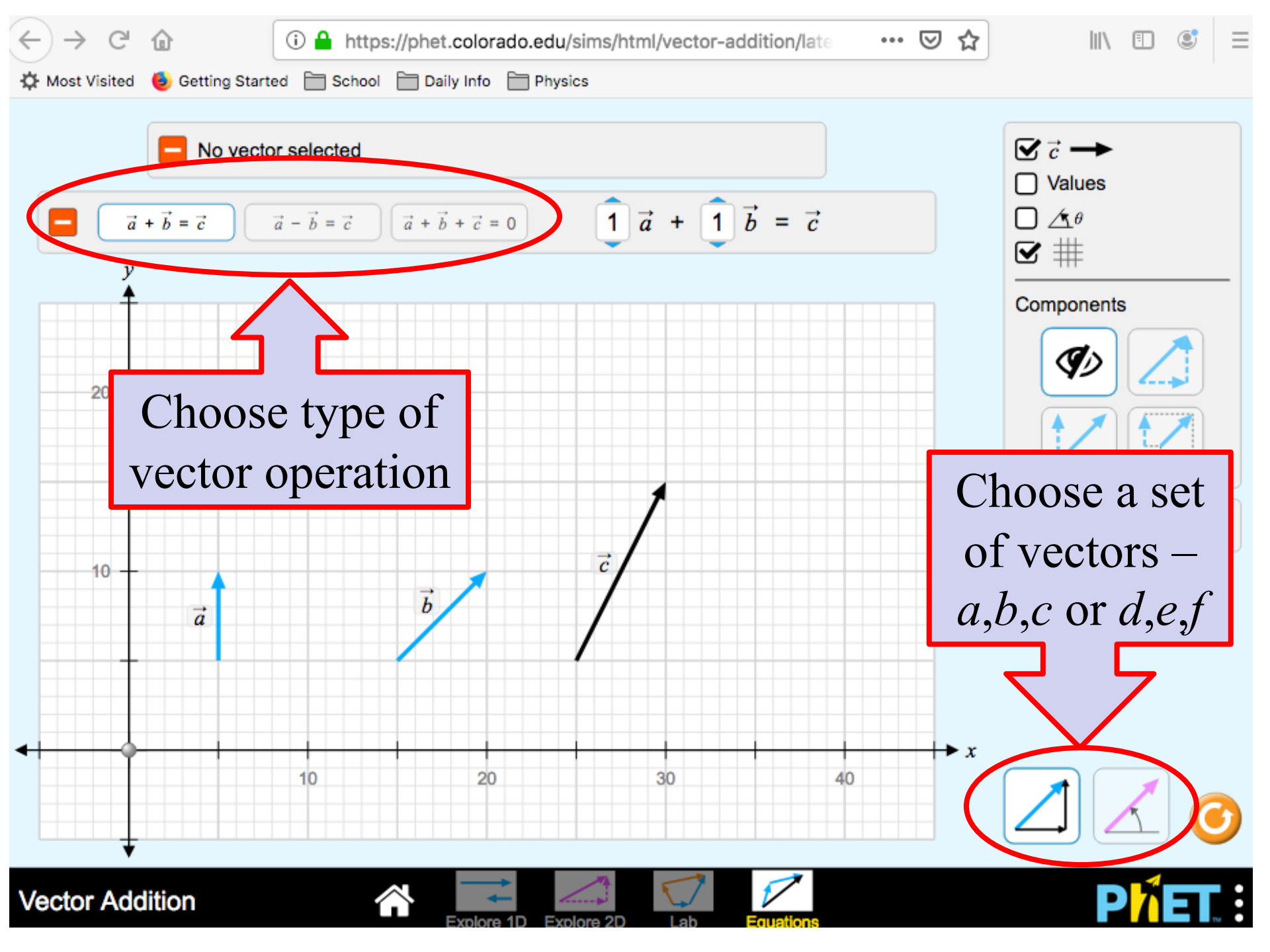
Kinematics

The Moving Man - PhET Interactive Java simulation

Vectors & 2D Motion

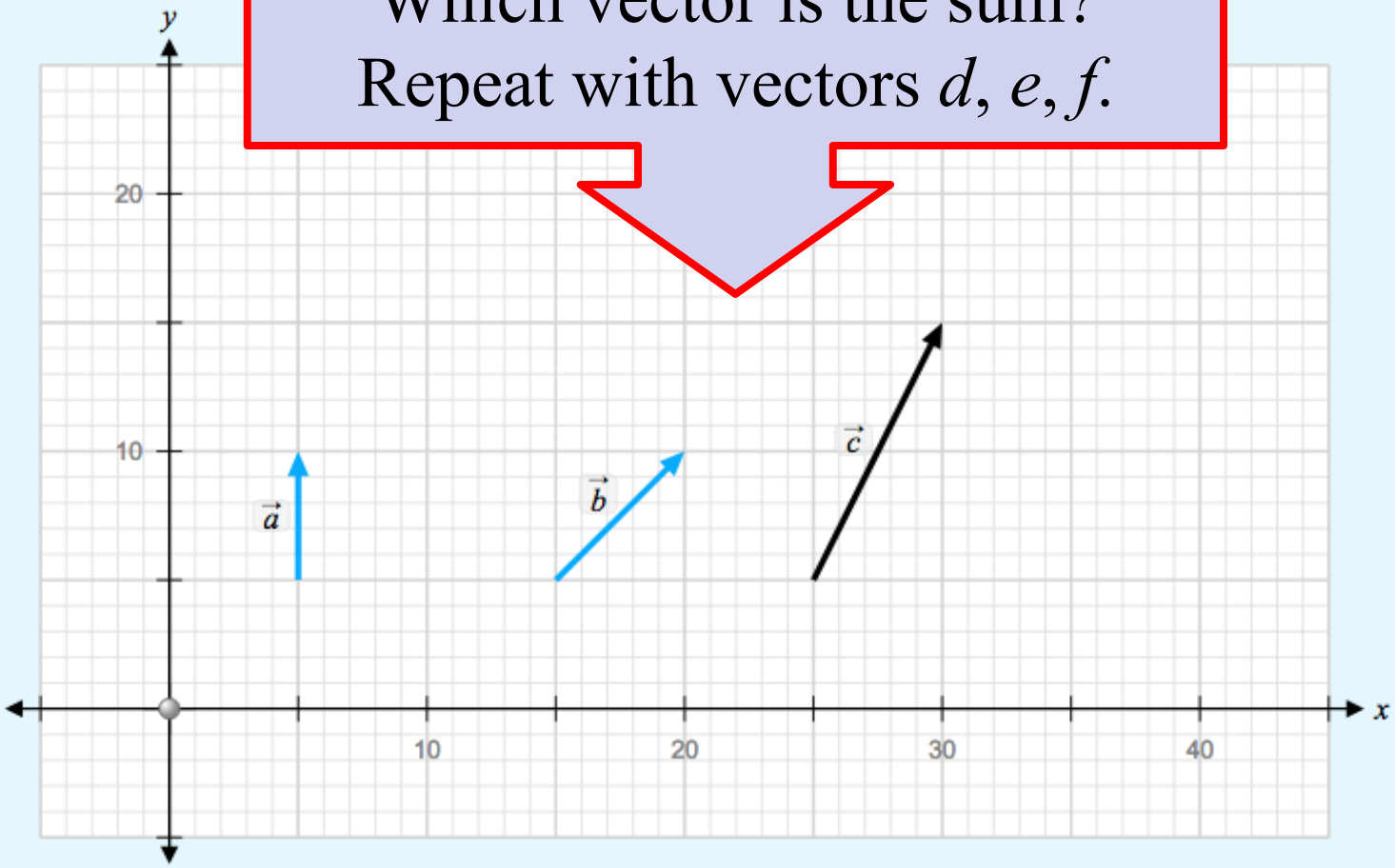
Vector Addition - PhET Interactive HTML5 simulation
Projectile Motion - PhET Interactive Flash simulation
2D Motion - PhET Interactive Java simulation
Frames of Reference - A classic physics video!




https://phet.colorado.edu/sims/html/vector-addition/late
Most Visited
Getting Started
School
Daily Info
Physics
No vector selected
$\vec{a} + \vec{b} = \vec{c}$
$\vec{a} - \vec{b} = \vec{c}$
$\vec{a} + \vec{b} + \vec{c} = 0$
1 $\vec{a}$ + 1 $\vec{b}$ = $\vec{c}$
$\vec{c}$
Values
θ
Components
Choose type of vector operation
Choose a set of vectors – *a*,*b*,*c* or *d*,*e*,*f*
y
x
10
20
30
40
$\vec{a}$
$\vec{b}$
$\vec{c}$
Vector Addition
Explore 1D
Explore 2D
Lab
Equations
PhET

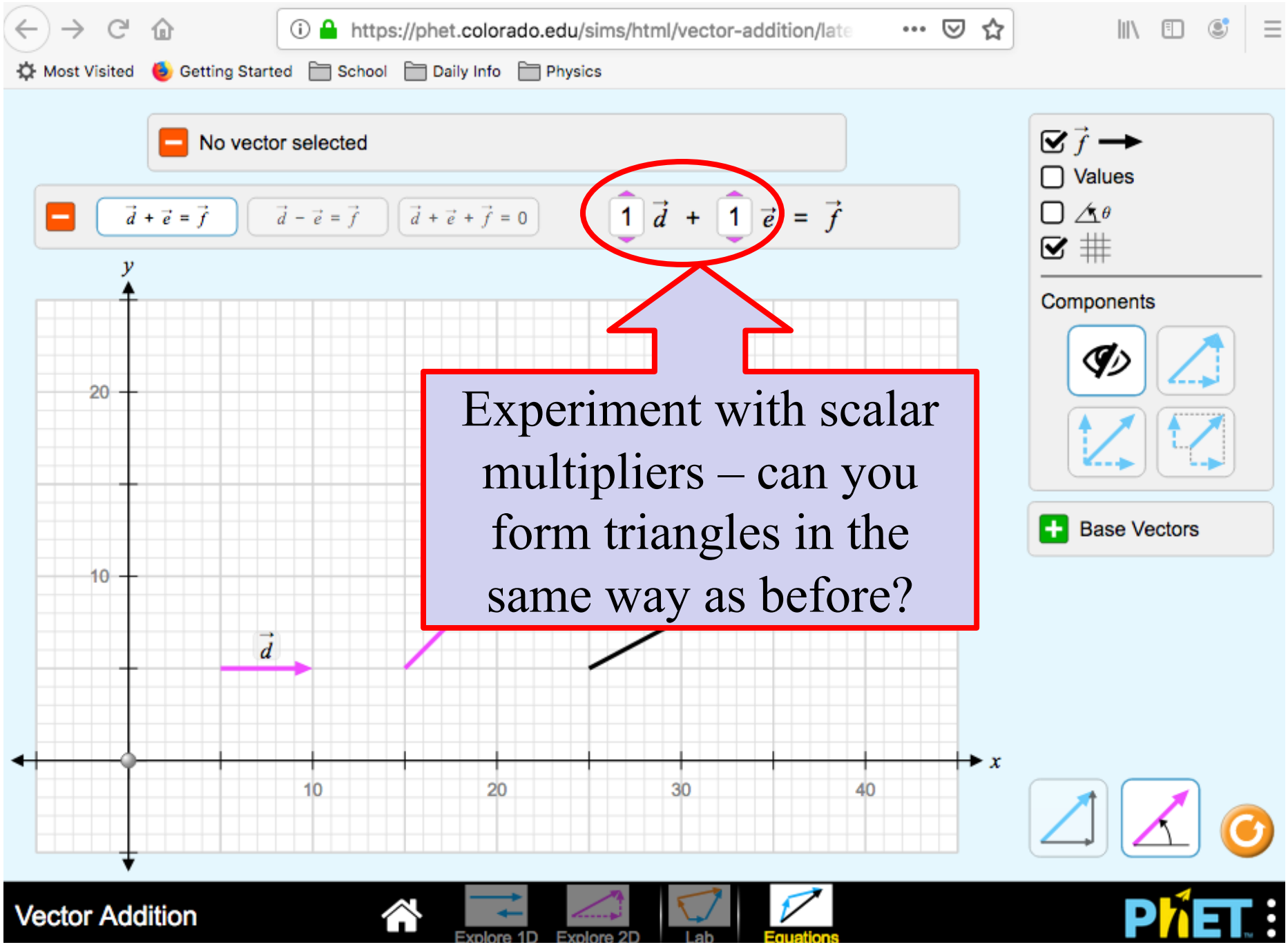
Most Visited

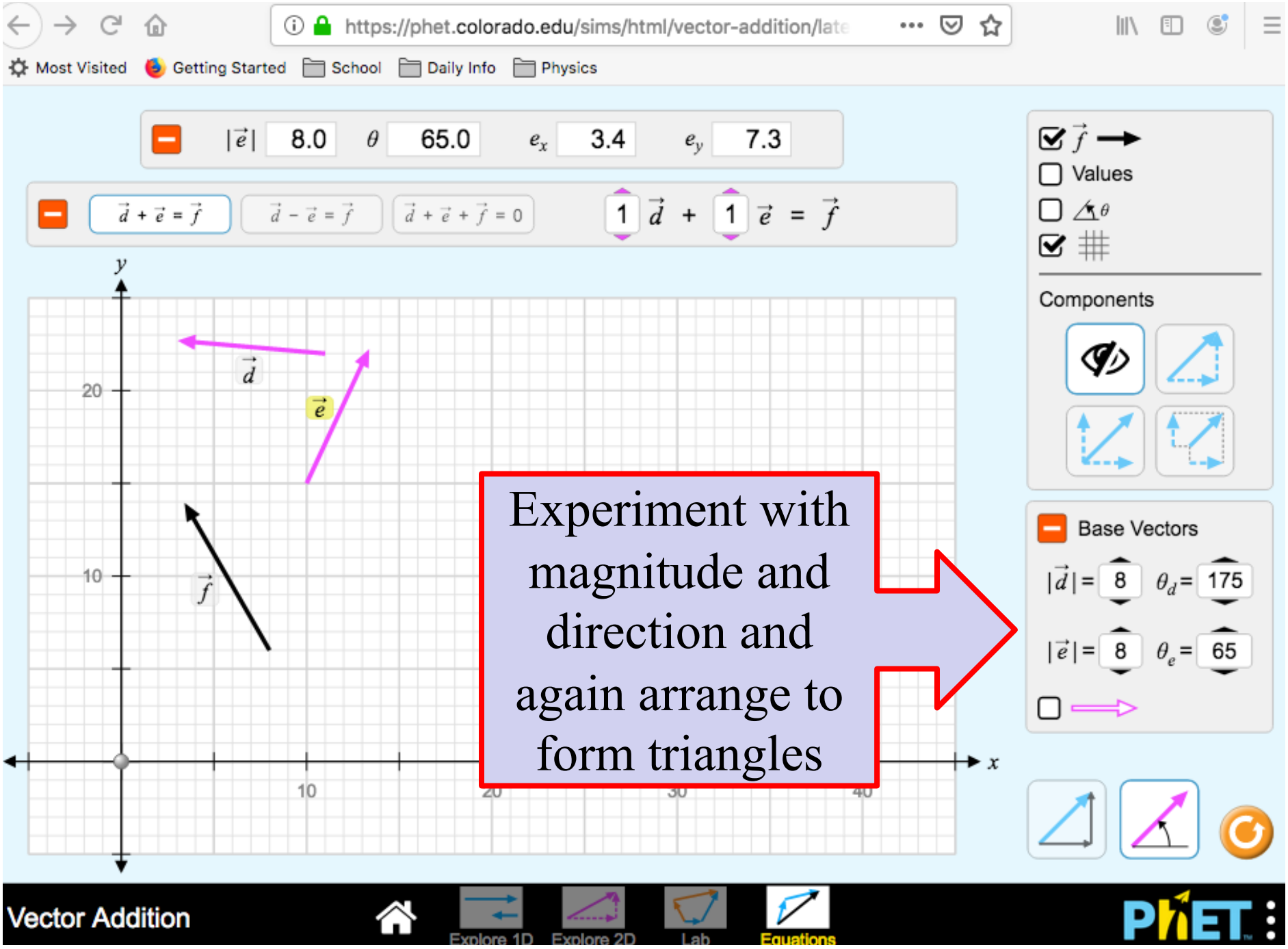
Click reset. Then click and drag vectors to form a triangle. How many ways are there to do this? Which vector is the sum? Repeat with vectors *d*, *e*, *f*.

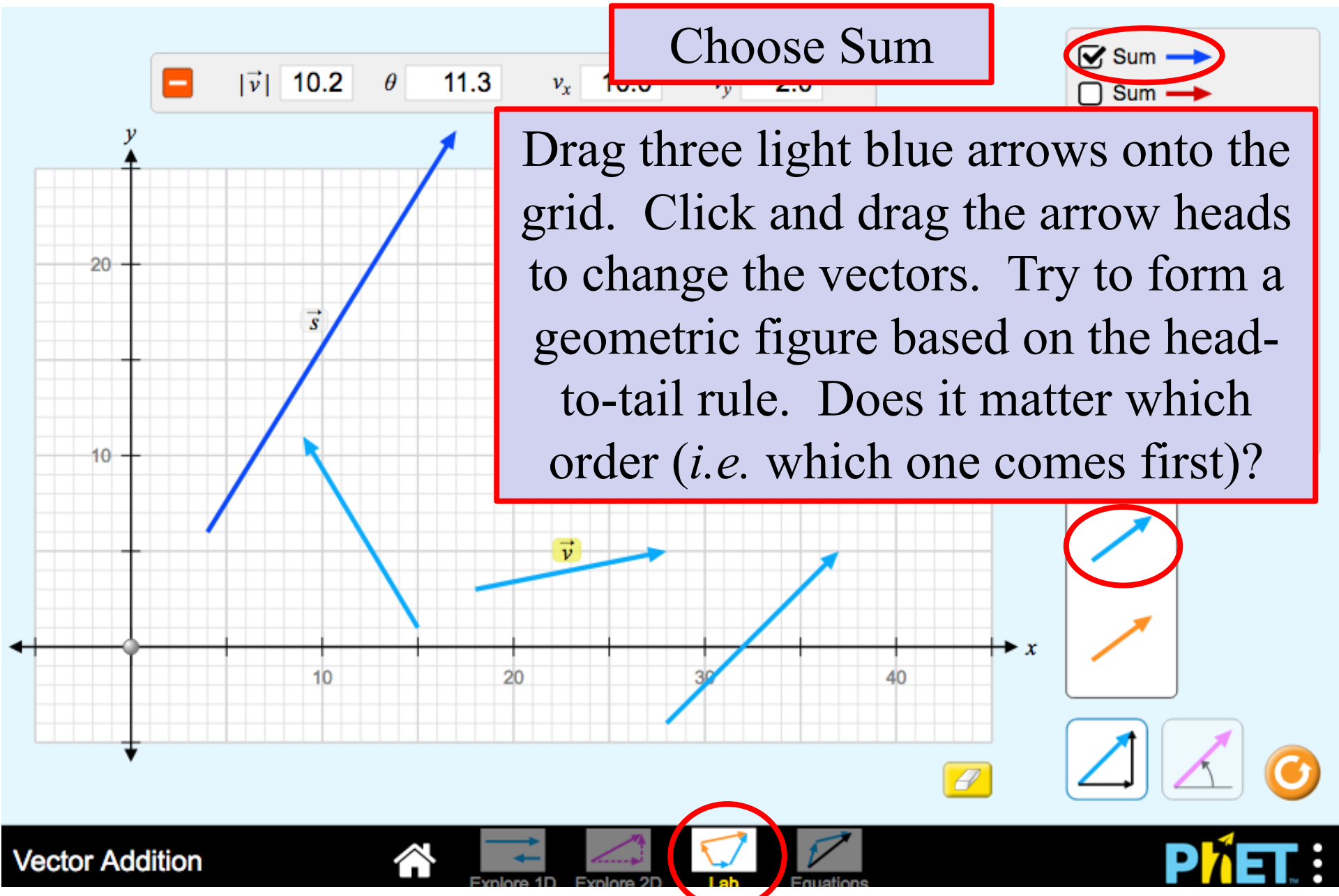


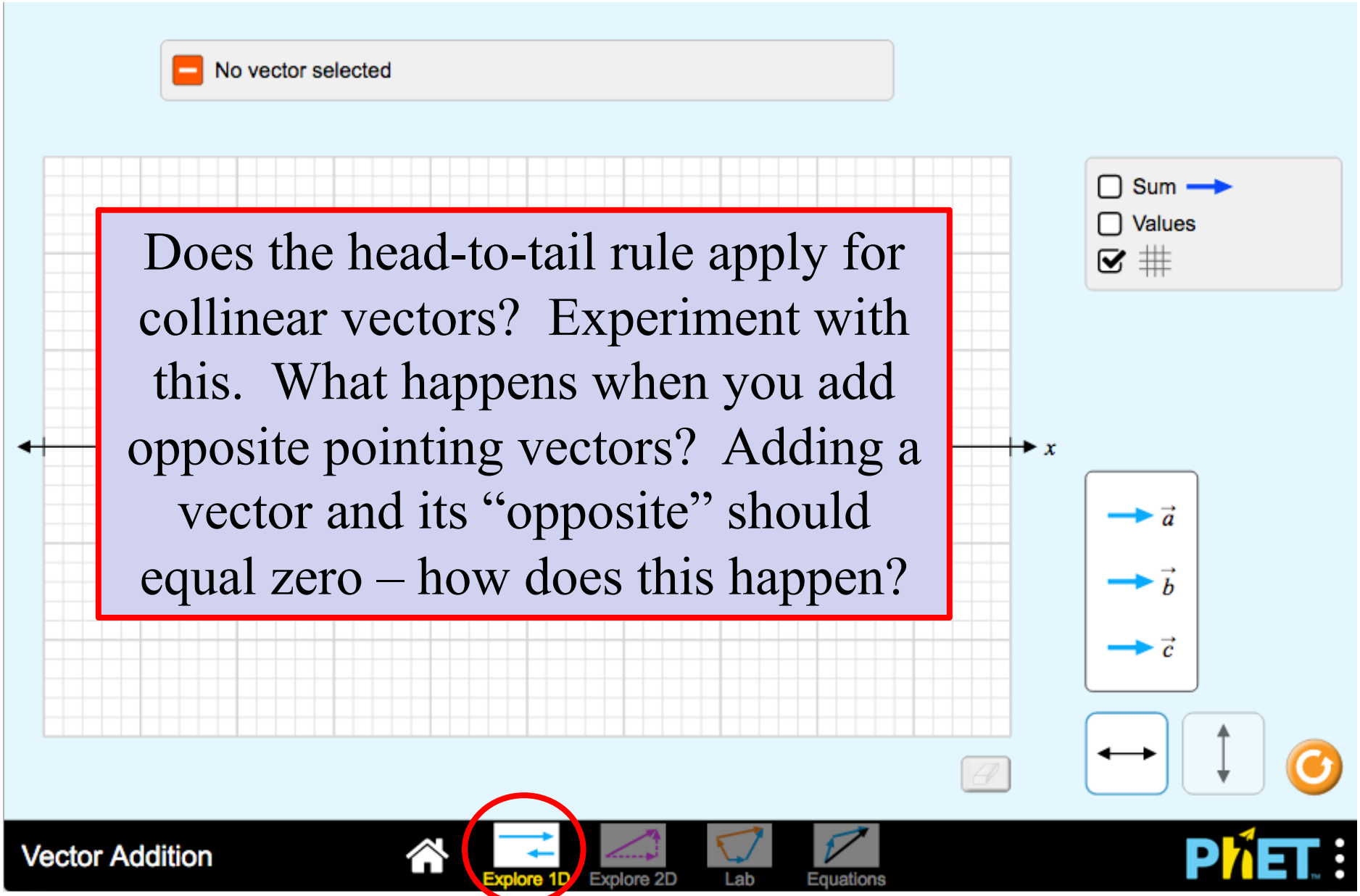
$\vec{c}$
Values
θ
Components
Base Vectors
Reset

Vector Addition
Explore 1D
Explore 2D
Lab
Equations
PhET

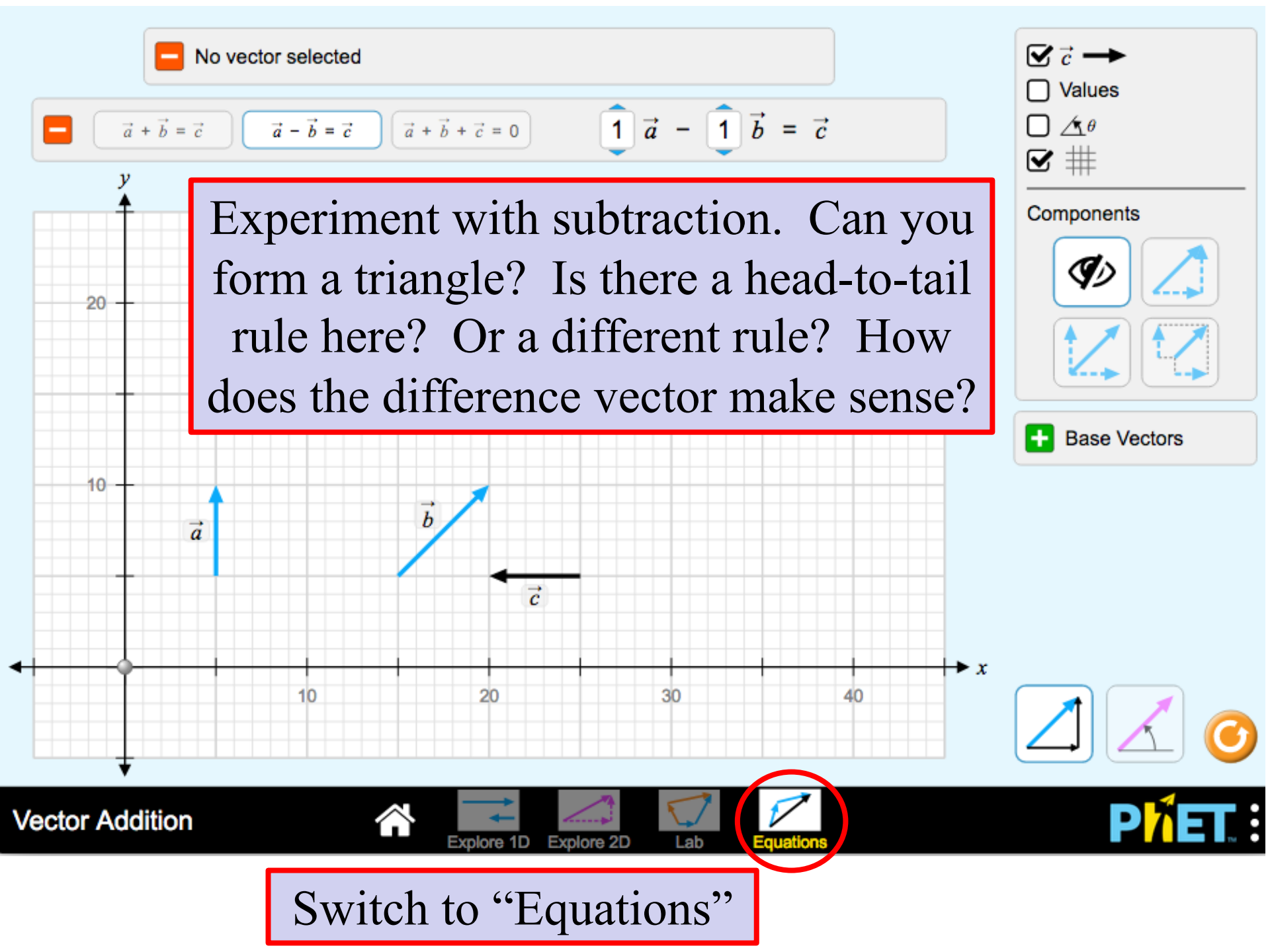

https://phet.colorado.edu/sims/html/vector-addition/late
Most Visited
Getting Started
School
Daily Info
Physics
No vector selected
$\vec{d} + \vec{e} = \vec{f}$
$\vec{d} - \vec{e} = \vec{f}$
$\vec{d} + \vec{e} + \vec{f} = 0$
1 $\vec{d}$ + 1 $\vec{e}$ = $\vec{f}$
Values
Components
Base Vectors
Experiment with scalar multipliers – can you form triangles in the same way as before?
y
x
20
10
10
20
30
40
$\vec{d}$
Vector Addition
Explore 1D
Explore 2D
Lab
Equations
PhET


https://phet.colorado.edu/sims/html/vector-addition/late
Most Visited
Getting Started
School
Daily Info
Physics
|e| 8.0
θ 65.0
e_x 3.4
e_y 7.3
d + e = f
d − e = f
d + e + f = 0
1 d + 1 e = f
f
Values
θ
Components
y
x
20
10
10
20
30
40
d
e
f
Experiment with magnitude and direction and again arrange to form triangles
Base Vectors
|d| = 8
θ_d = 175
|e| = 8
θ_e = 65
Vector Addition
Explore 1D
Explore 2D
Lab
Equations
PhET


Choose Sum
Sum
Sum
$|\vec{v}|$ 10.2
θ 11.3
v_x
Drag three light blue arrows onto the grid. Click and drag the arrow heads to change the vectors. Try to form a geometric figure based on the head-to-tail rule. Does it matter which order (*i.e.* which one comes first)?
y
x
20
10
10
20
30
40
$\vec{s}$
$\vec{v}$
Vector Addition
Explore 1D
Explore 2D
Lab
Equations
PhET
Switch to "Lab"


No vector selected
Sum
Values
Does the head-to-tail rule apply for collinear vectors? Experiment with this. What happens when you add opposite pointing vectors? Adding a vector and its "opposite" should equal zero – how does this happen?
x
$\vec{a}$
$\vec{b}$
$\vec{c}$
Vector Addition
Explore 1D
Explore 2D
Lab
Equations
PhET

Switch to "1D"


No vector selected
$\vec{a} + \vec{b} = \vec{c}$
$\vec{a} - \vec{b} = \vec{c}$
$\vec{a} + \vec{b} + \vec{c} = 0$
1 $\vec{a}$ − 1 $\vec{b}$ = $\vec{c}$
$\vec{c}$
Values
θ
Components
Base Vectors
Experiment with subtraction. Can you form a triangle? Is there a head-to-tail rule here? Or a different rule? How does the difference vector make sense?
y
x
20
10
10
20
30
40
$\vec{a}$
$\vec{b}$
$\vec{c}$
Vector Addition
Explore 1D
Explore 2D
Lab
Equations
PhET
Switch to “Equations”