

Module 3  
Lesson 3.6  
1 hour

# Scalars and Vectors

Scalars  
Vectors

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# Scalars

Definitions  
Examples

<https://www.physicclassroom.com/class/1/learn/lesson-1/Scalars-and-Vectors>  
<https://www.bbc.co.uk/bitesize/guides/zgqz793/revision/1>  
<http://study.com/learn/lesson/Scalars-and-Vectors-Definitions.html>

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# Scalars: Definition

Quantities fully described by a magnitude alone.

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## Magnitude: Definition

The size of something.

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## Examples

Mass	Kilogrammes	kg
Time	Seconds	s
Speed	Kilometres per Hour	km/h
Distance	Kilometres	km
Temperature	Degrees Celsius	°C

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## Question for Discussion

Why is weight not a SCALAR?

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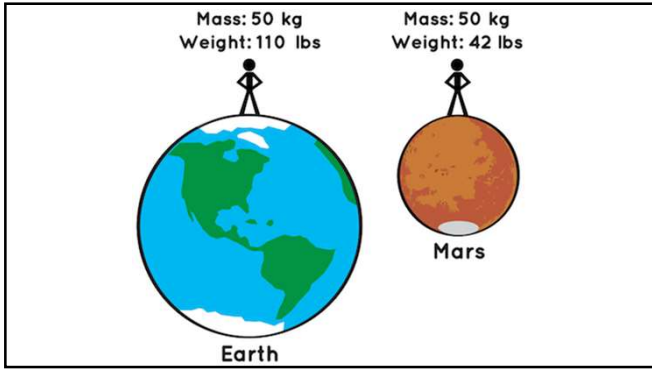
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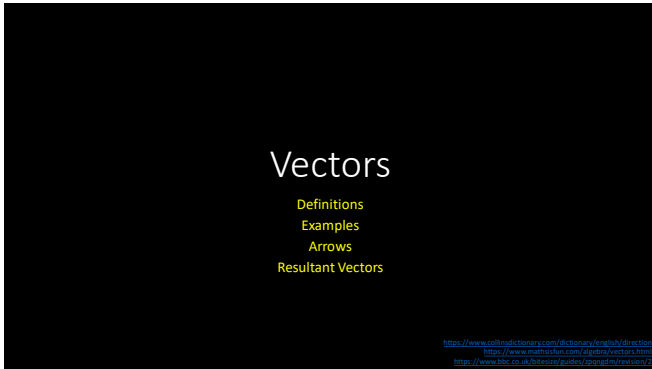
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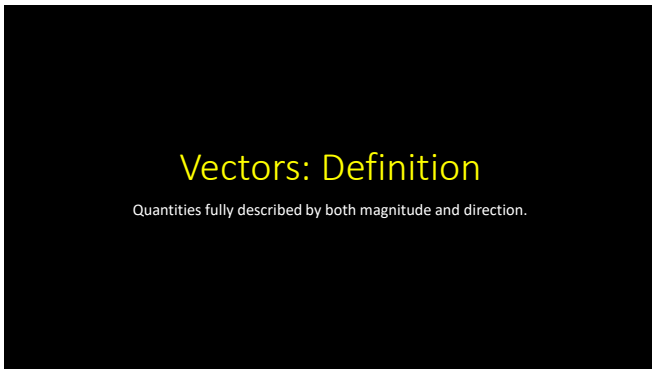
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## Magnitude: Definition

The size of something.

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## Direction: Definition

The line that someone/something is moving or pointing towards.

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## Examples

Force	Newtons	N
Weight	Newtons	N
Velocity	Metres per Second	m/s
Momentum	Kilogram Metres per Second	kg m/s
Displacement	Tonnes	t

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## Question for Discussion

Why are both weight and force measured in Newtons?

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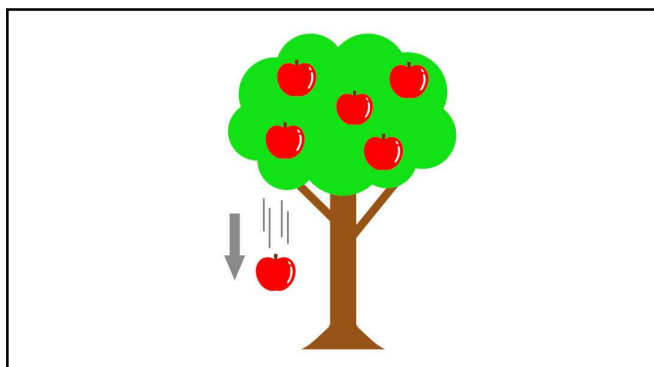
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## Arrows

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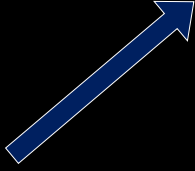
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Vector



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Vector with less magnitude



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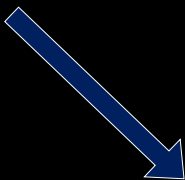
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Vector with different direction



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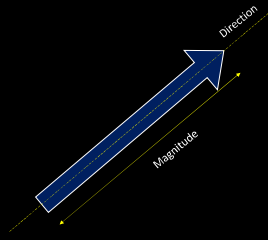
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# Vector



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# Resultant Vectors

The result of multiple vectors.  
One vector that produces the same effect as multiple vectors collectively.

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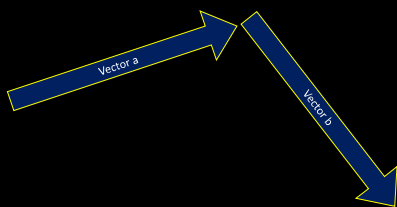
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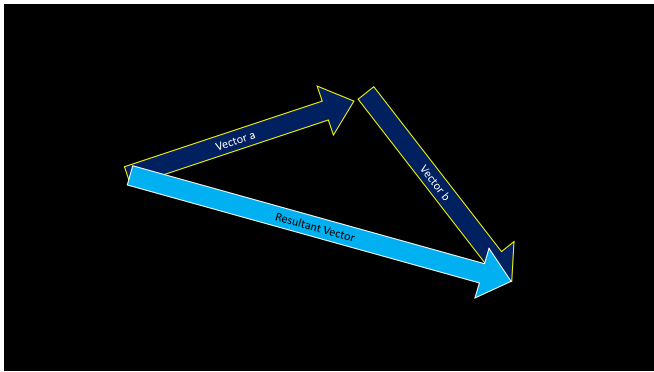
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**Question**

- A person travels North for 3 kilometres.
- They then adjust their course and travel East for 3 kilometres.

What could they have done instead?  
E.g. What is the magnitude and direction of the resultant vector?

Sketch it. Calculate it.

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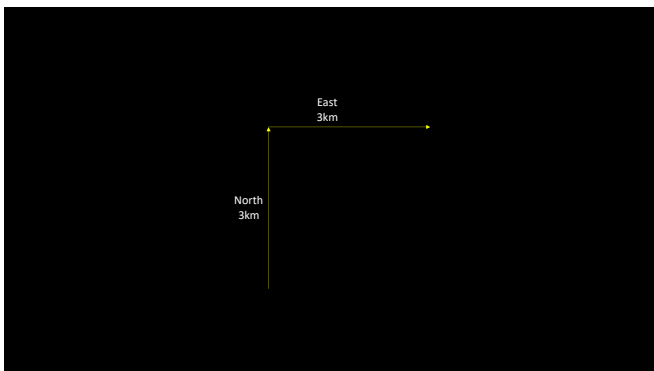
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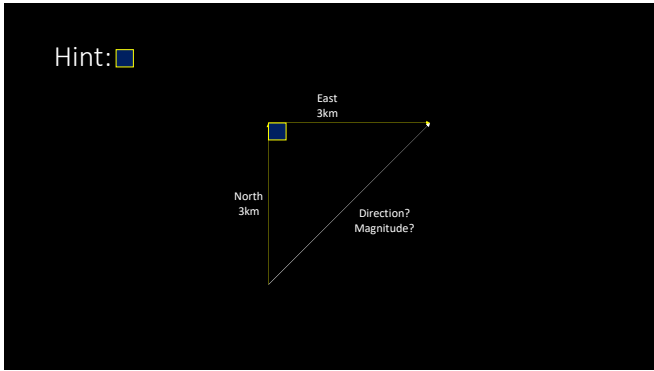
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Recap and Questions

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