**Scalar versus Vector**

Quantities in nature come in two form: vector and scalar.

**Vector**: a quantity with both magnitude and direction, represented with an arrow over the variable.

 e.g.

**Scalar**: a quantity with magnitude, but not direction.

 e.g.

Relationship: Vector = Scalar + Direction

Representing direction:

1. Compass:

 North [N], south [S], east [E], west [W]

 e.g.

1. Integer sign:

Positive = Up and left

 Negative = Down and right

 e.g.

3. Arrows

 e.g.

Operations with vectors

🡪Vectors can only be added/subtracted if they are parallel

|  |  |
| --- | --- |
| **Scalar** | **Vector** |
| Distance | Displacement |
| Speed | Velocity |

E.g. You walk 2 blocks [N], 14 blocks [E], and finally 2 blocks [S]. What is your total distance? What is your total displacement?

Conclusion: