

FORCES **NOTES**

1. **Forces** always get **ADDED** together. (MOST IMPORTANT)

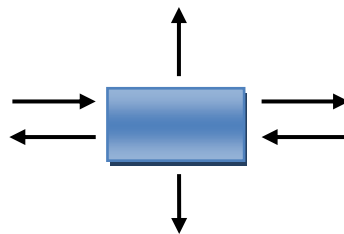
2. **Forces** are **VECTOR** quantities. (**Despicable Me:** *VECTOR*)

- They have a **MAGNITUDE** (size)
(like a magnitude 5.5 earthquake)
- And they have **DIRECTION**
(up, down, left, right, north, east, south, or west).

3. **DIRECTION** of FORCES:

a. **Up, Right and Forward** are “**POSITIVE**”

b. **Down, Left and Backwards** are “**NEGATIVE**”



The **DIRECTION** the **arrow** is **pointing** is the **DIRECTION** of the force,
(NOT the side the **arrow** is on...)

4. To determine the **NET FORCE** (resulting force on an object) **add** together all the forces acting on the **same object**.

***THE NET FORCE IS ALWAYS A POSITIVE QUANTITY.**

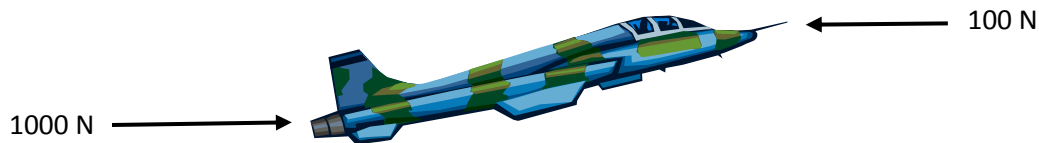
THE NEGATIVE SIGN HELPS DESCRIBES THE DIRECTION THE FORCE IS ACTING

(see plane example below)

How to calculate the Net Force on an object:

1. Draw the force diagram
2. What is the **net force** acting on the object? (**show your work** & include unit (Newton))
3. Are the forces **balanced** or **unbalanced**? (**YES** or **NO**)
4. **Which way** will the object move? (**Left, Right, Up, Down, or Stay Still**)

1.



2.

$$1000 \text{ N} + -100 \text{ N} = 900 \text{ N} \quad (\text{The Net Force is } 900 \text{ N})$$

3.

UNBALANCED

Since answer is not zero the forces are UNBALANCED

4.

RIGHT

Since the answer is "positive" plane moves to the right