CENTER OF MASS (CM)

The average position of all the pieces of mass in an object

1. Objects balance at their CM.

2. When freely spun, objects rotate around their CM.

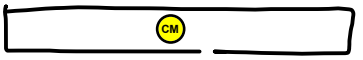
3. When hung from any point, an object's CM will be directly below the point it's hung from.

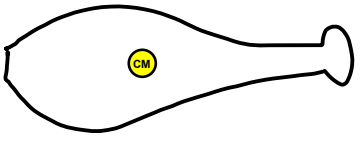
4. It's the CM that obeys all the Laws of Physics we've been learning about this year.

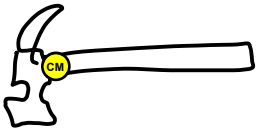
5. It can be calculated from the mass & position of the pieces.

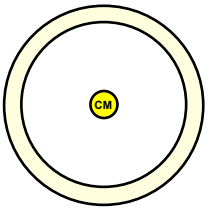
CENTER OF MASS

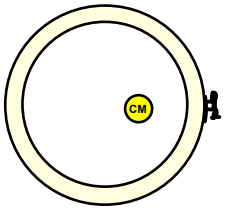
The average position of all the pieces of mass in an object











Which letters have a CM outside of themselves?

A B C D E F G H I

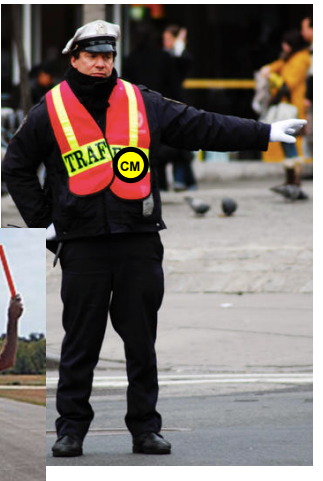
J K L M N O P Q R

S T U V W X Y Z

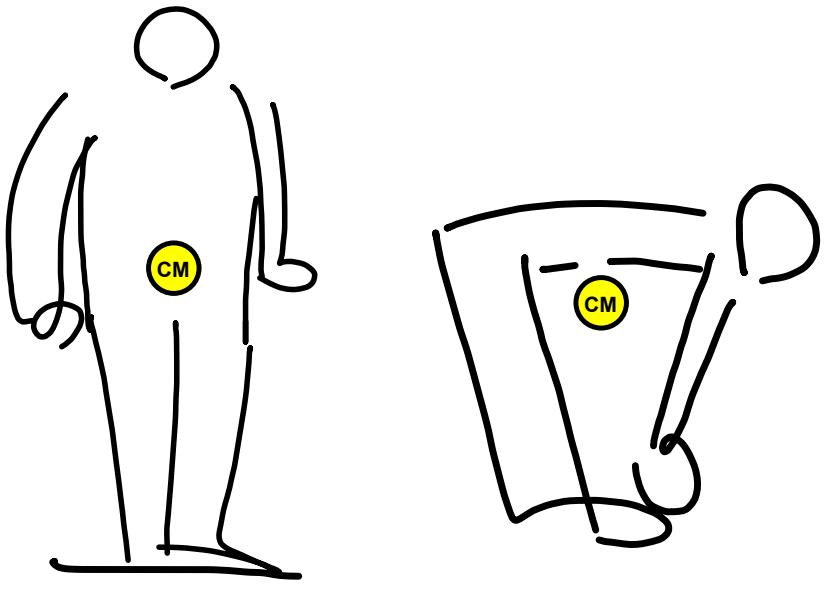
Can you shift your CM around?

CM

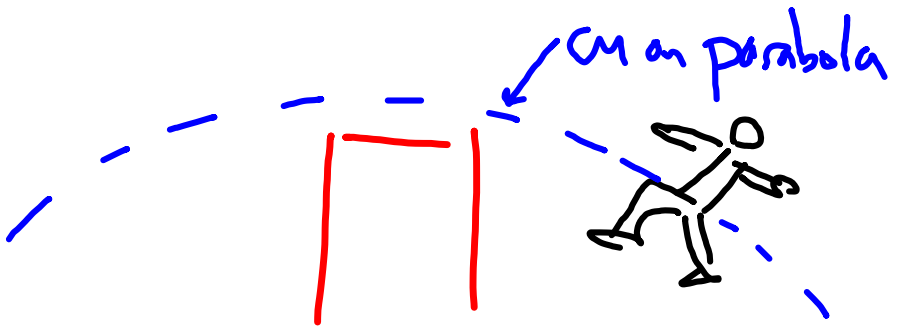
Can you shift it outside your body?



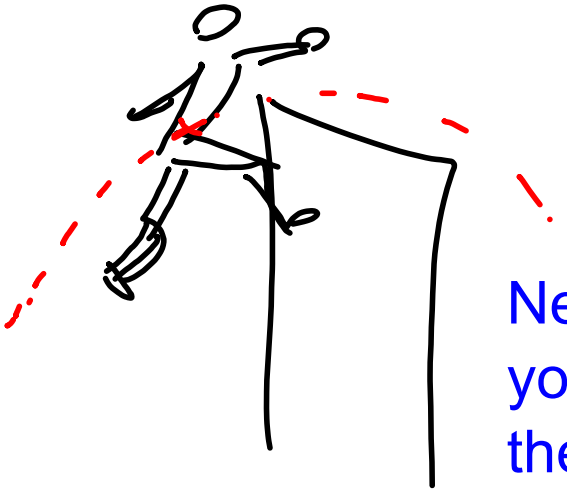
The Human CM



The Laws of Physics apply to the CM, not necessarily the whole object

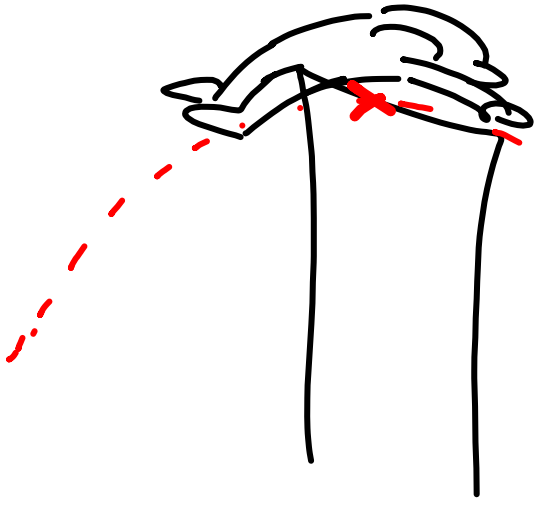


The High Jump



Need to get your CM over the bar plus extra for your legs.

The High Jump: Fosbury Flop



Your CM might hit the bar.

more efficient!