SHM - Repeated periodic motion of a particle about a mean position

DYNAMICS | KINEMATICS

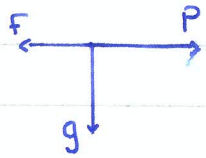
For any situation ie set of forces acting on a particle, we want to write down a set of formulae which will predict the motion of the particle in the future. Predicting the future means having formulae for acceleration, speed and position in terms of time or each other.

This group of formulae is called the kinematics of the situation.

Dynamic of a problem - how its force is linked to the effect.

The key to working out the kinematic is to work out the forces acting and to connect them to the acceleration by N II (link cause and effect)

CAUSE | LINK | EFFECT



$F = ma$ | accel.

from physics

FORCES of sit.] DYNAMIC

↓ N II

$a = 6x$

$\frac{dv}{dt} = 6x$

$v\frac{dv}{dt} = 6x$

$\int v\,dv = \int 6x\,dx$

ACCEL] CALCULUS

↓ (calculus)

SPEED DIST TIME] KINEMATIC

FORMULAE