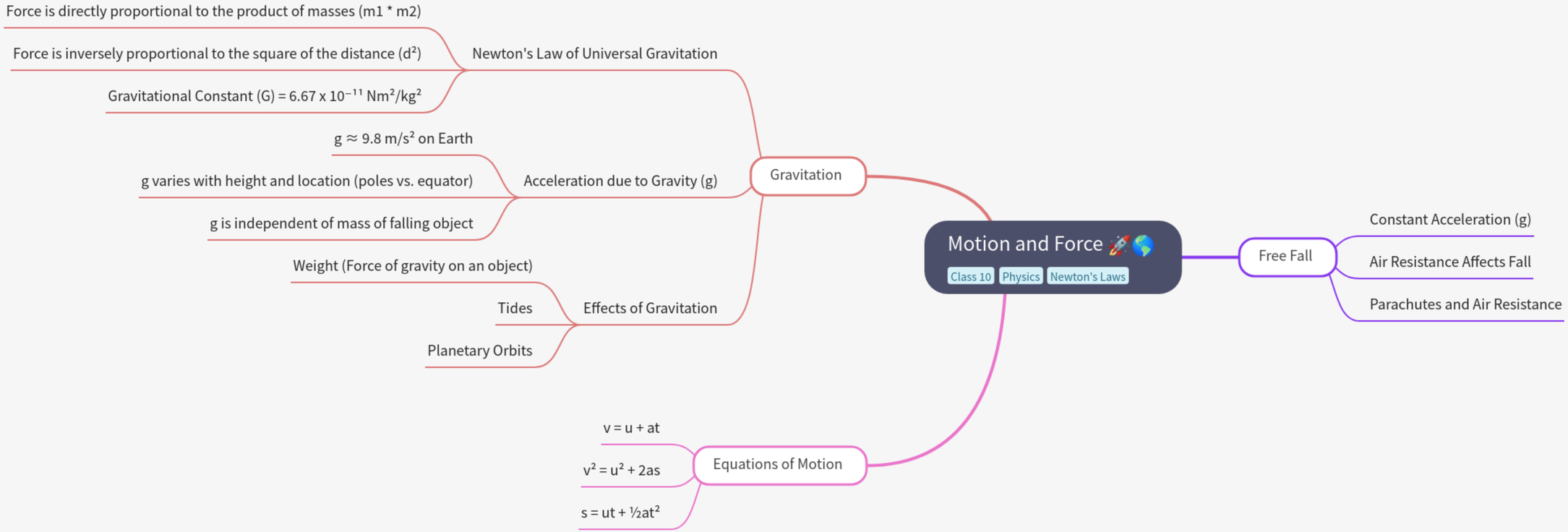
Motion and Force 🚀🌎
Class 10
Physics
Newton's Laws
Gravitation
Newton's Law of Universal Gravitation
Force is directly proportional to the product of masses (m1 * m2)
Force is inversely proportional to the square of the distance (d^2)
Gravitational Constant (G) = 6.67 x 10^{-11} Nm^2/kg^2
Acceleration due to Gravity (g)
g ≈ 9.8 m/s^2 on Earth
g varies with height and location (poles vs. equator)
g is independent of mass of falling object
Effects of Gravitation
Weight (Force of gravity on an object)
Tides
Planetary Orbits
Equations of Motion
v = u + at
$v^2 = u^2 + 2as$
$s = ut + ½at^2$
Free Fall
Constant Acceleration (g)
Air Resistance Affects Fall
Parachutes and Air Resistance