

Mechanics Motion and Movement

FORCE
ALTERS STATE OF MOTION
PUSH
PULL

A BODY AT REST TO MOVE CAUSE CAN
A MOVING BODY TO CHANGE DIRECTION
CHANGE AN OBJECTS SHAPE.
NO MOTION WITHOUT
FORCE

WHERE LINE OF APPLICATION OF THE FORCE IS APPLIED.
SIZE OF FORCE APPLIED
DIRECTION

WHEN A FORCE ACTS UPON AN OBJECT THE RATE OF CHANGE OF MOMENTUM IS PROPORTIONAL TO SIZE OF FORCE & TAKES PLACE IN DIRECTION FORCE ACTS.
A BODY CONT. IN STATE OF REST OR UNIFORM VELOCITY UNLESS ACTED UPON BY EXTERNAL FORCE.
LAW OF INERTIA FIRST
LAW OF ACCELERATION SECOND
LAW OF REACTION THIRD
NEWTON'S LAWS OF MOTION.

"FOR EVERY ACTION THERE IS AN EQUAL AND OPPOSITE REACTION"

MOTION
LINEAR BODY
MOVES IN LINE
SAME DISTANCE
DIRECTION
SPEED
E.G. TOBOGGANIST
SHOT PUT.
ANGULAR BODY
MOVES IN A CIRCLE AROUND A POINT
E.G. SHOULDER IN SWIMMING
GYMNASTICS BAR SPIN
GENERAL
COMBO OF LINEAR ANGULAR
E.G. SPORTS WHEELCHAIR.

CENTRE OF MASS
IN ALL DIRECTIONS BODY BALANCED
MASS CONCENTRATED

4 PRINCIPLES STABILITY
CENTRE OF MASS POSITION OF ATHLETE'S (FEET)
ATHLETE'S BASE OF SUPPORT
LINE OF GRAVITY POSITION OF ATHLETE'S MASS OF ATHLETE
TO THE GROUND FROM CENTRE OF MASS
WITHIN BASE OF SUPPORT C of M IS LOWER
MORE BASES OF SUPPORT WIDER
SHORTER LINE OF GRAVITY LOWER MASS IS
GREATER
APPLICATION OF FORCE WITH RELATIONSHIPS
DIRECT FORCE = LINEAR MOTION.
ECCENTRIC FORCE = ANGULAR MOTION.

