

The family tree of forces

force performs the same kind of action that we could do with a push or a pull — but the agent is often not us

contact forces

warp forces

frictional forces

non-contact forces

labels, identification guides and family likeness

tension

environment stretched

compression

environment squeezed

buoyancy

in a fluid

slip

sliding over a solid

grip

preventing movement over solid

drag

moving through fluid(s)

gravity

near a large mass

electric

charged and near another charge

magnetic

magnetic and near another magnet

always push or pull at right angles to the surface

always oppose motion between object and

often described as mediated by fields

drawing and modelling

arrow always drawn with tail at surface, where the contact is

arrow always drawn with tail at centre

you focus on a single object and describe the forces acting on that object as a result of its interactions with its surroundings