Chapter 4-1 Notes

- Force

Force

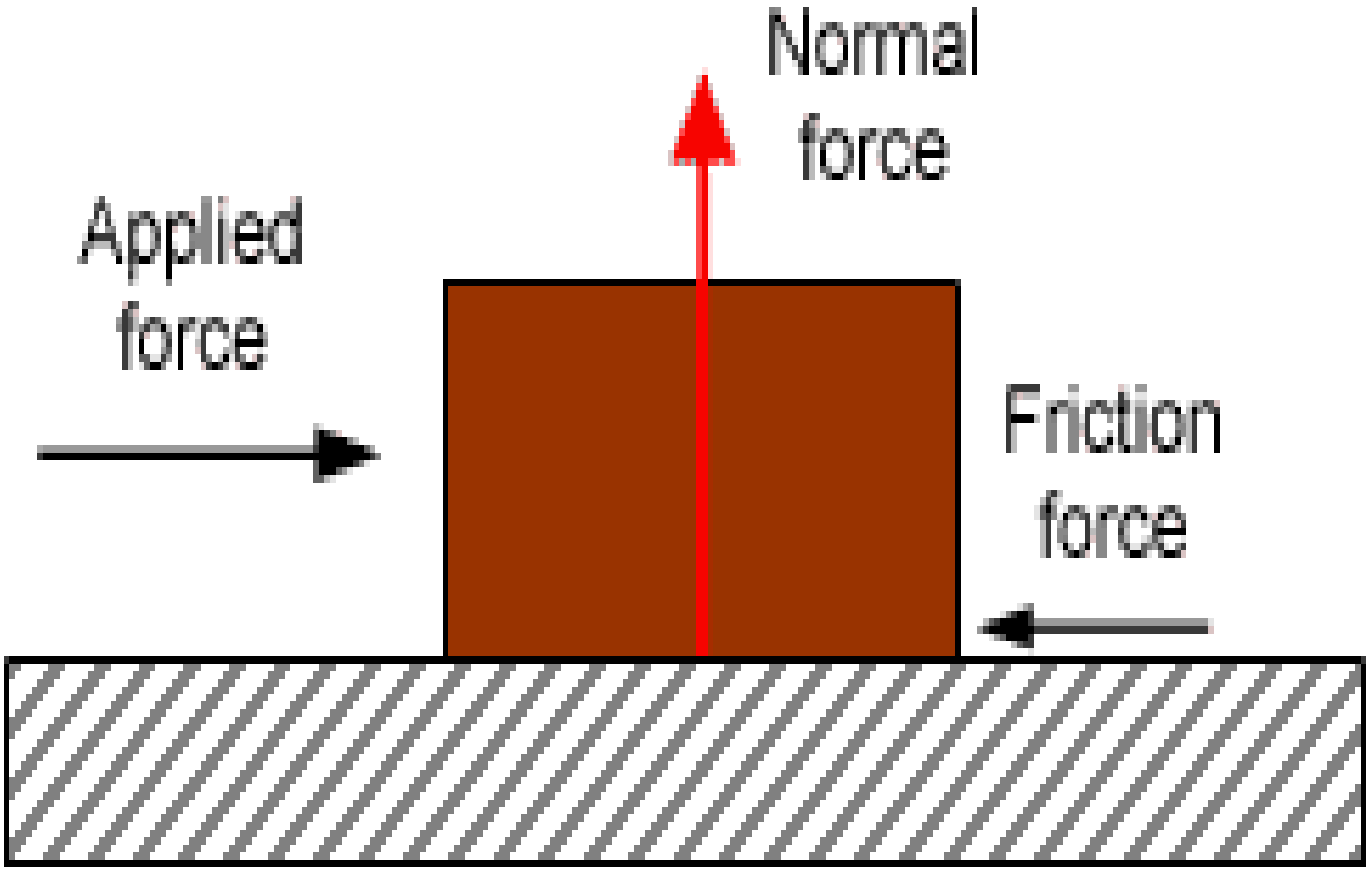
- Force is a push or pull exerted on some object.
- Forces cause changes in velocity.
- The SI unit for force is the Newton.
- 1 Newton = 1 kg m/s^2

2 types of forces

- Contact Force – physical contact between two objects
- Field Force – does not involve physical contact between two objects. Example is electrical forces

Force Diagrams

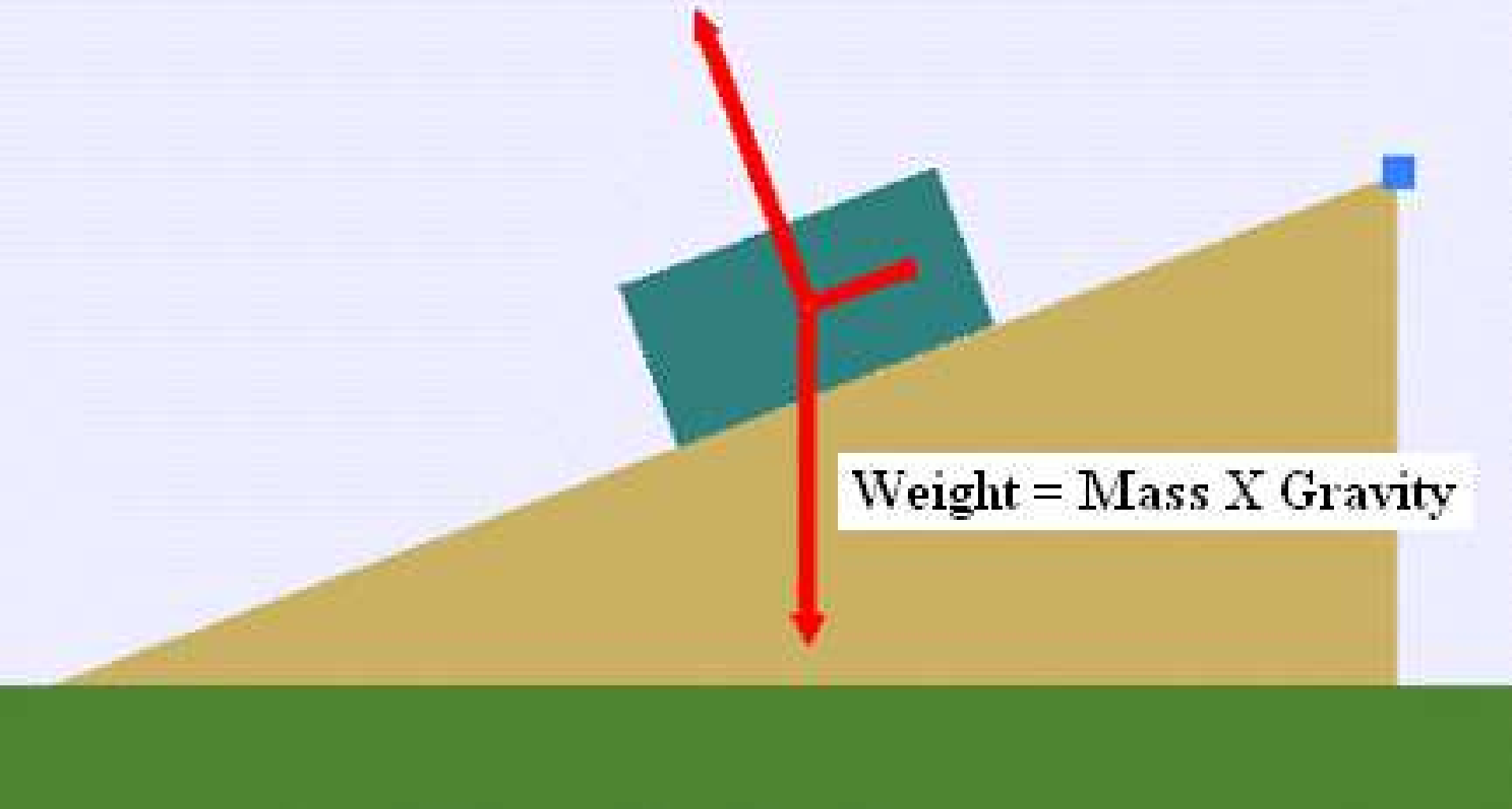
- A free-body diagram is used to analyze only the forces affecting the motion of a single object.
- Use force diagrams to find x and y components and then to find the resultant.


Normal
force
Applied
force
Friction
force

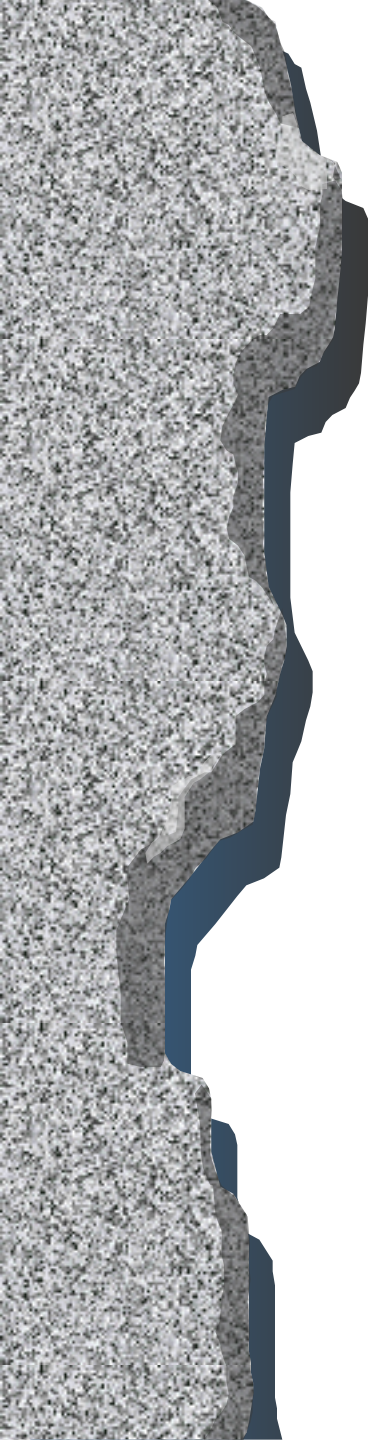
Normal Force

- Every object has an equal and opposite force.
- The weight is the first and most obvious force.
- However, the equal and opposite force is called the normal force.
- Normal force is always 90 degrees to the horizontal.

Normal Force - 90 Degrees to Horizontal



- A man pushes a car with a force of 40 Newtons and at an angle of 30 SE while another man is trying to help and pushes with a force of 60 Newtons and at an angle of 60 SE. What is the car's resultant force and direction?



Assignment

- 4.1 Worksheet