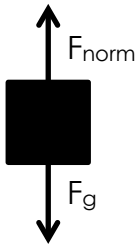
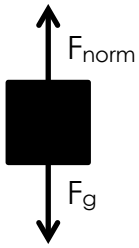
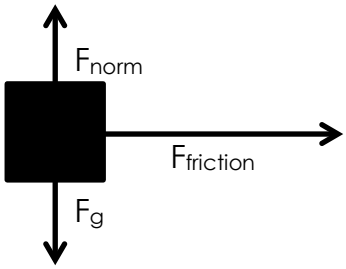
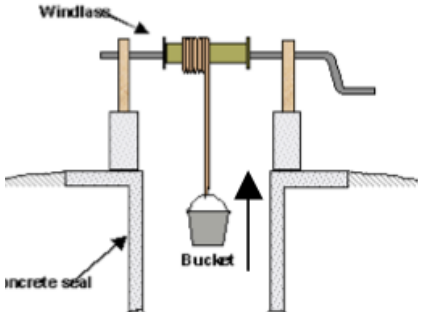
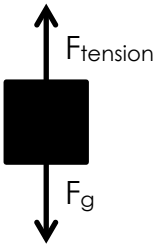
G – How do forces determine the motion of objects?

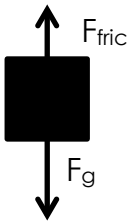
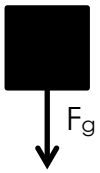
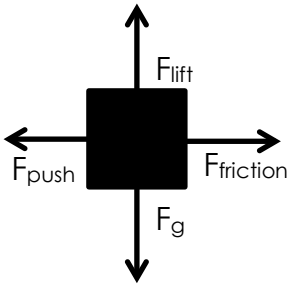
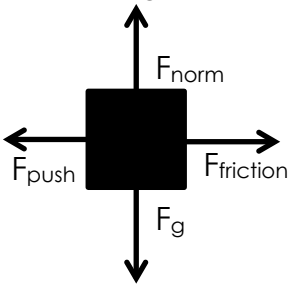
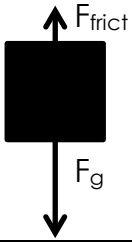
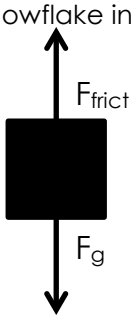
ACTIVITY 1

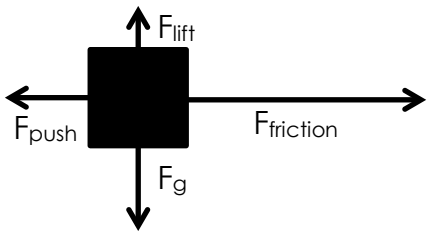
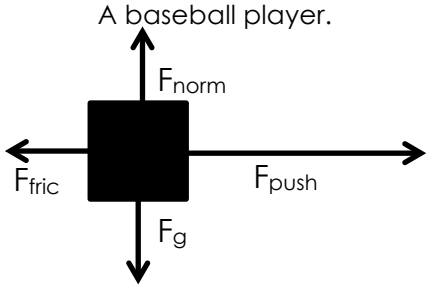
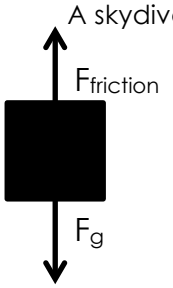
Complete the chart…

By the end of this activity, you should be able to…
- describe the motion of an object from its free body diagram.

Tip 1: Train your brain to look at left/right separately from up/down
Tip 2: Longer arrows = larger force!
Tip 3: Balanced forces = no change (stays still or continues at constant velocity)
Tip 4: Unbalance forces = acceleration in the direction of the net force.

Situation	Free Body Diagram
1. A bird sitting motionless on its perch. 	
2. A hockey player moving at a constant velocity across frictionless ice. 	
3. A baseball player skids to a stop as he reaches home base. 	
4. A bucket of water that is being raised at a constant velocity. 	

5. A skydiver who just jumped out of a plane and is accelerating towards the ground. 	
6. A basketball in the middle of a free throw. 	
7. An airplane flying at a constant velocity. 	
8. The rock is not moving or is moving at a constant velocity.	A large rock. 
9. The snowflake is accelerating down.	A snowflake in the air. 
10. The snowflake is falling at a constant velocity	A snowflake in the air 

11. **The airplane is landing (slowing down and falling down)**	An airplane. 
12. **The player is accelerating to the right.**	A baseball player. 
13. **The skydiver is falling at a constant velocity.**	A skydiver 
14.	Create your own
15.	Create your own

REFLECT

Can you describe the motion of an object from its force diagram?

.....