*Free Body Diagrams (FBDs) and Newton’s Second Law (N2L)*

Using N2L and our technique for finding the net force on an object, we can now determine the object’s acceleration when a net force is applied to it.

Ex. A 35.0kg box is being pushed forward with a 455N force. If the box is experiencing a 402N frictional force, what is the box’s acceleration?

Ex. A 165g hockey puck has been shot along the ice. If the coefficient of kinetic friction is 0.006;

1. What is the acceleration rate of the puck?
2. If the puck begins with an initial velocity of 45.0m/s, how far will it slide before coming to a stop?

Ex. Kevin Martin won the gold medal at the Olympics for men’s curling. In one of his shots, he needed to “draw the button” which means he had to throw a stone so it perfectly landed in the middle of the centre ring. If the coefficient of kinetic friction on the ice is 0.0168, and he needs to throw the rock exactly 28.35m, what should the initial velocity of the stone be?