

## PhysiXplore Session 1 – Newton's Second Law

### **Materials:**

1. Atwood machine apparatus
2. Hanging masses
3. String
4. Pulley
5. Motion sensor

### **Procedure:**

1. Set up the Atwood machine by suspending a pulley from a fixed support and passing a string over it.
2. Attach masses to the ends of the string (two known masses)
3. Measure the mass of the cart by using a balance
4. Release the system and start the motion sensor as soon as you let it go
5. Calculating the acceleration by using velocity-time graph (calculating the slope)
6. Repeat the experiment 3 times
7. Calculating the tension ( $F=ma$ )
8. Repeat steps 2-7 but change the hanging masses

### **Comparing experimental & theoretical value:**

1. Calculating the theoretical acceleration
2. Calculating the theoretical tension
3. Compare it with the experimental results from the procedure
4. Is it bigger/smaller?