Part I: Keeping Total Mass Constant

For this part of the experiment you will keep the total mass used constant, but move weights from one side to the other. The difference in masses changes.

1. Since the Atwood's machine apparatus is already set up, you won't need to do anything physical. That's good as you wouldn't want to drop any masses on your foot. It might break your toe.
2. Start with 160 g on the left side (Mass 1) and 150 g on the right side (Mass 2). Use the arrows to change the mass.

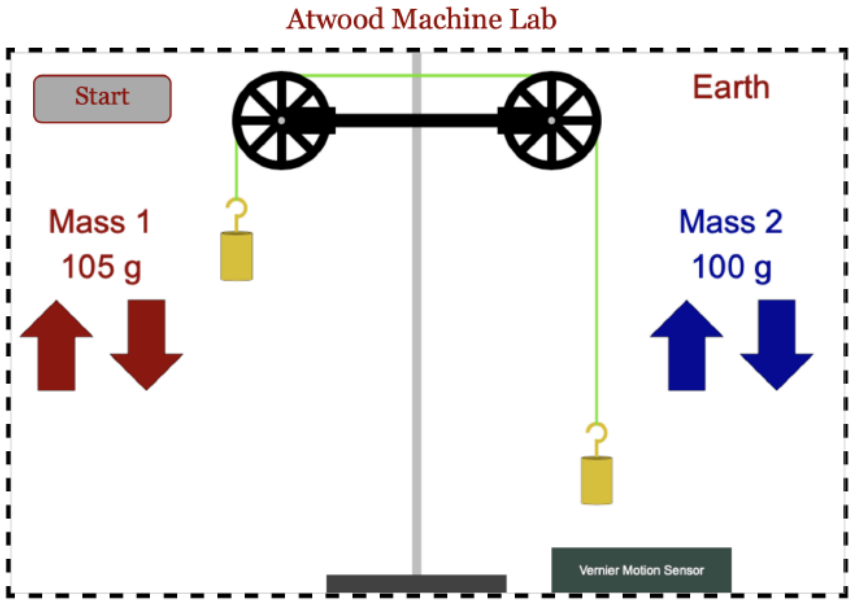

Figure 6.2: Atwood's machine simulation lab.

3. Record the two masses in the data table.
4. Click the"Start" button to run the simulation.
5. Two graphs will be created at the bottom of the simulation. The first graph is a position vs. time graph. The second graph of velocity vs. time is VERY useful. You need to find two points on the graph and find the slope. Is the slope acceleration?
6. Record the acceleration in the data table.
7. Reset the simulation by pressing the "Reset" button just above the apparatus.
8. Move 5 g from Mass 2 to Mass 1. Record the new masses in the data table.
9. Repeat steps 4–8 until you get at least five different combinations.

Total Mass Constant					
Trial	m_1 (g)	m_2 (g)	Acceleration (m/s^2)	Δm (g)	m_T (g)
1					
2					
3					
4					
5					

Total Mass Constant

Trial	m_1 (g)	m_2 (g)	Acceleration (m/s^2)	Δm (kg)	m_T (kg)
1	160 g	150 g	.315 m/s^2	.01 kg	.31 kg
2	165 g	145 g	.647 m/s^2	.02 kg	.31 kg
3	170 g	140 g	.964 m/s^2	.03 g	.31 kg
4	175 g	135 g	1.26 m/s^2	.04 g	.31 kg
5	180 g	130 g	1.58 m/s^2	.05 g	.31 kg