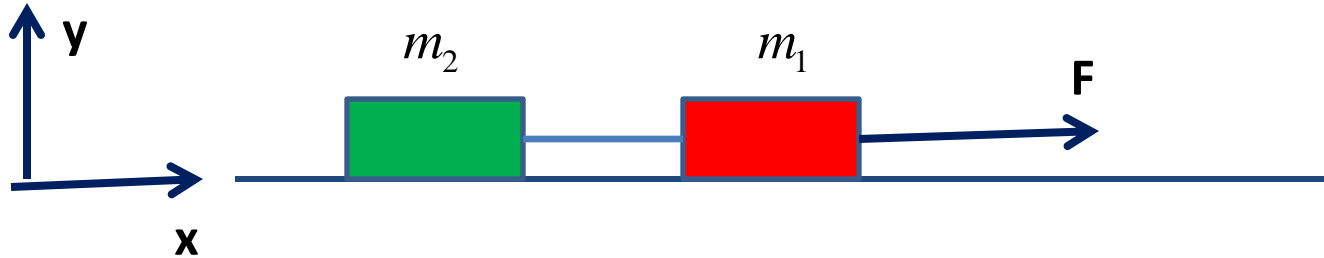
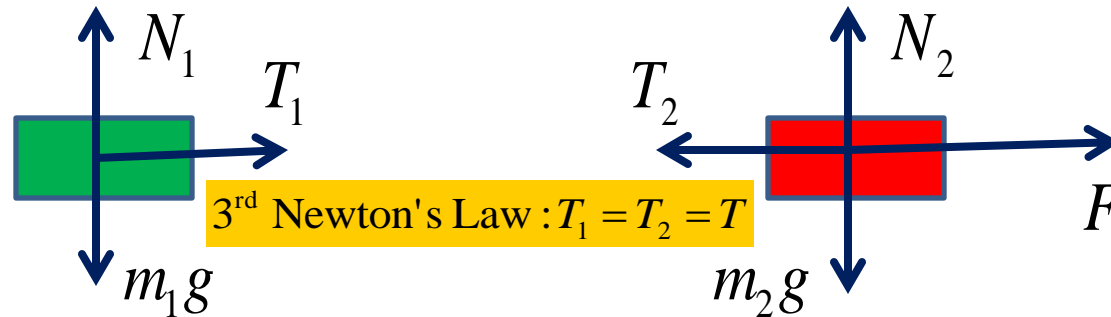


Free Body Diagram



1. Choose the coordinate system (for each object).
2. Show all forces applied to each object.
3. Write 2nd Newton's Law for each object, and each axis.
4. Solve equations to find acceleration.



x -axis: $T = m_1 a$

$F - T = m_2 a$

y -axis: $N_1 - m_1 g = 0$

$N_2 - m_2 g = 0$

$a = \frac{F}{m_1 + m_2}$

Homework

Construct free body diagrams, and find accelerations of the blocks in the figure. Masses of the blocks are $M_1=0.8\text{kg}$; $M_2=1\text{kg}$ and $M_3=0.5\text{kg}$.

Note that the tension is different between the two strings, but it does not change as a string goes around the pulley.

