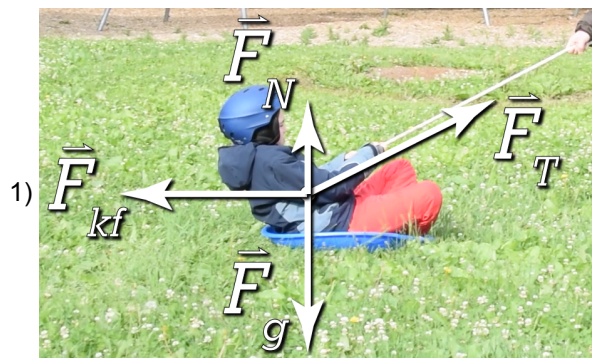




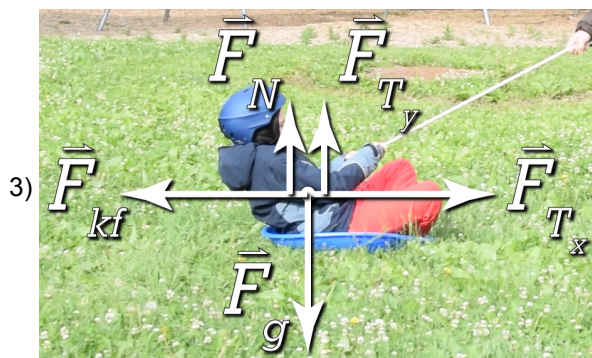
Flipping Physics Lecture Notes:  
5 Steps to Solve any Free Body Diagram Problem

- 1) Draw the Free Body Diagram
- 2) Break Forces into Components
- 3) Redraw the Free Body Diagram
- 4) Sum the Forces ( $\sum \vec{F} = m\vec{a}$ )
- 5) Sum the Forces (in a direction perpendicular to the one in step 4).

For example:



2)  $\sin \theta = \frac{O}{H} = \frac{F_{T_y}}{F_T} \Rightarrow F_{T_y} = F_T \sin \theta$  &  $\cos \theta = \frac{A}{H} = \frac{F_{T_x}}{F_T} \Rightarrow F_{T_x} = F_T \cos \theta$



4)  $\sum F_y = F_N + F_{T_y} - F_g = ma_y$

5)  $\sum F_x = F_{T_x} - F_{kf} = ma_x$