# Newton's Notions

1. **DESCRIPTION**: Teams will be assessed on their knowledge of forces and motion.

2. **ESSENTIAL STANDARDS ALIGNMENT**: 3.P.1, 5.P.1

3. **TEAM OF UP TO**: 2

4. **MAXIMUM TIME:** 60 min.

5. **TEAMS**: Teams must bring a writing instrument. No other resources are allowed.

6. **EVENT LEADERS**: Will provide paper and all necessary materials.

7. **SAFETY REQUIREMENTS**: None.

8. **IMPOUND**: No

9. **THE COMPETITION**: This event may be run in a station or lab format. Teams will use the materials provided to:
   a. Identify the following types of simple machines: inclined plane, lever, pulley, screw, wedge, & wheel and axle, in pictures or everyday objects.
   b. Explain how factors such as gravity, friction, and mass affect the motion of objects.
   c. Illustrate the motion of an object using a graph to show a change in position or speed over a period of time.
   d. Evaluate the relative speeds of objects given the time and distance traveled.
   e. Determine whether forces are balanced or unbalanced in a situation and describe the resulting motion of objects.
   f. Set up and operate simple machines to perform a task and then describe the advantages and disadvantages of the simple machine.

10. **SCORING**: Points will be awarded for the accuracy of responses. Ties will be broken by the accuracy or quality of responses to pre-selected questions chosen by the event leader.

11. **EVENT RESOURCES**: See the Event Resources tab on our website (ncscienceolympiad.ncsu.edu) for instructions, videos and more.