Title: Conservation Laws

Objectives: Students will describe how conservation laws apply to a real situation.

Instructions: The TA will play a series of video clips and animations, some of which you’ve already seen in a different context in class. You will analyze what is happening using conservation laws.

1. The Boatman. What conservation law can be used to describe his motion? Why?

2. The Ice Skater with the rope. Explain what happens in terms of energy. What types of energy are present in the beginning? What energy transformation processes take place? What type of energy do you end up with?

3. The Ice Skater spinning. What conservation law applies here? Why does she speed up? Where does the energy come from?

4. The Charged Balls. Describe the energy changes that take place when the balls are released.


6. The Exploding U. What conservation laws apply to the U from the perspective of the astronauts? What about the frame of ground control? What is the difference between the two perspectives?