Demonstration Explanations
Comprehension Questions

The following statements are either true or false. On a separate paper, write "true" or "false" **and explain why**.

1. Even when the stream of air from the leaf blower is tilted at a 45 degree angle, the ball does not fall. This is because, along with the air coming directly from the leaf blower, the air that goes around the underside of the ball pushes it upward.

2. The reason the Van De Graaff generator works is that protons stick to metal and they fall off anything that's white. Protons then jump to your body because they are attracted to the metal on your jewelry, braces, fillings, and clothing.

3. A balloon deflates when it is put into liquid nitrogen. This is because liquid nitrogen makes tiny holes in the rubber, which allows all the air to escape. Some liquid nitrogen enters the balloon through the holes, which makes the balloon expand when it is taken out.

4. Electromagnetism has nothing to do with how high voltage is created in the Tesla coil. Inside of the Tesla coil small parts rub against each other, like rubbing your feet on the floor, which creates high voltage. It makes things glow so that people know it's turned on.

5. The hovercraft is an anti-gravity device. The blower fan is there to keep the complicated circuitry from overheating.

6. Inside the smoke ring cannon is an inner tube out of an old car tire. The inner tube gets filled with smoke. When the smoke is let out, it keeps the shape of the inner tube—it looks like a big donut. This shape stays together just like a real donut if you throw it across the room.

7. Normally the atmosphere only pushes down on our heads and our shoulders, that's why sometimes our feet and legs get sore and we need to eventually sit or lay down. Inside the vacuum bag demonstration, the atmosphere pushes on every inch of our body.