

Separating Salt and Pepper

The Action

Separating the pepper from a mixture of salt and paper using a ruler.

Grade Level

Grade 6 - Energy in Our Lives

Grade 9 - Using Electricity

Materials

- Table salt
- Ground pepper
- A piece of paper
- A plastic ruler
- Wool (100% if possible)

Instructions

- On the piece of paper, sprinkle a pile of salt and pepper. Make sure the salt and pepper are mixed. Ask, "How can I separate the pepper and the salt?"
- Rub the plastic ruler with the wool. Hold the ruler close to the paper and watch the pepper stick to it.

Safety

No safety concerns. Allergies to wool and pepper may need to be considered.

Hints

Make sure the ruler is well charged. You should be able to hear the static building. Hold the ruler fairly close to, but not touching, the paper. If it is too far away, the experiment will not work.

Science Principle

When the ruler is rubbed with the wool, the electrons from the wool are left on the ruler. The negatively charged ruler passes near the neutral pepper particles and becomes positively induced. The pepper particles "fly" up to the ruler. If you listen closely, it sounds like static electricity.

NOTE: Another way to separate the salt and pepper is to put the mixture in a beaker of water. The salt will sink and the pepper will float.