

Static Power



Grade Levels:
K-3

Background:

When coal is burned in a power plant, small particles of pollution called soot are produced. Static electricity can be used to capture soot before it leaves the power plant.

Question:

Can a mixture of salt, sugar and pepper be separated using static electricity?

Possible Hypotheses:

A mixture of salt, sugar and pepper can/cannot be separated.

Materials:

Sugar, salt, and pepper
Small plate
Plastic comb
Piece of wool

Procedure:

1. Stroke the comb with wool to give it an electric charge.
2. Put small amounts of sugar, salt, and pepper on a plate. Do not mix them together. Beginning a few inches above the plate, move the comb closer to the particles. Observe to see if one type of particle reacts before the others.
3. Record your observations.
4. Repeat the experiment with the salt, sugar, and pepper mixed together.

Analysis and Conclusion:

Are the particles attracted to the comb at different heights above the plate?

Can you separate a mixture of salt, sugar, and pepper using static electricity?

Could static electricity be used to clean the air at a coal-burning power plant?

