

## Separating a Mixture Using Sieving and Magnetism

**Florida State Standard:** SC.5.P.8.3 – Investigate and describe how materials can be separated based on physical properties.

**Florida State Benchmark:** SC.5.P.8.4 – Identify the properties of materials and determine methods of separation based on those properties.

### Objective:

- Students will learn how to separate a mixture of iron filings, sand, and small stones using magnetism and sieving techniques.

### Materials:

- 1 cup of iron filings
- 1 cup of sand
- 1 cup of small stones
- Sieve or colander
- Magnet
- Plate or shallow dish
- Bowl or container

### Safety Precautions:

- Always handle the magnet carefully to avoid pinching fingers.
- Keep magnets away from electronic devices to prevent potential damage.
- Maintain a clean, organized workspace and clean up any spills immediately to prevent slipping hazards.
- Supervise children at all times to ensure they follow proper safety protocols.

### Procedures:

1. **Prepare the Mixture:** Combine 1 cup of iron filings, 1 cup of sand, and 1 cup of small stones in a bowl and mix them well.
2. **Use the Magnet to Remove Iron Filings:** Hold a magnet over the mixture to attract and collect the iron filings. Move the magnet through the mixture until all iron filings are removed. Place them on a separate plate.
3. **Sift the Remaining Mixture:** After removing the iron filings, use the sieve or colander to separate the sand from the small stones. Shake the sieve gently to allow the sand to pass through while the small stones remain in the sieve.
4. **Collect the Separated Components:** Collect the sand that falls into the dish and place it in a bowl. Collect the small stones remaining in the sieve into a separate container.

### Note: Clean-up

Ensure that all materials are properly disposed of or stored after the experiment. Clean the

magnet by wiping it gently with a cloth to remove any filings. Sweep up any remaining sand or stones from the work surface, and wash all utensils and containers used during the experiment.