Activity 8: Separating Heterogeneous Mixtures

What methods can be used for separating heterogeneous mixtures?

Hypothesis

Describe the separation method you would use for each of the following mixtures. (More than one method might be possible for each. Choose the one you think will work best.)

Mixture	Separation Method?
paper clips and marbles	
salt and pepper	
sand and water	
marbles and water	
iron shavings and salt	
paper clips and toothpicks	
toothpicks and sand	

Materials

- water
- jar or bowl
- toothpicks (wooden toothpicks work best)
- fine sand
- paper clips
- sieve or colander
- iron filings (use paper clips if iron filings are unavailable)
- magnet
- salt
- marbles
- coffee filters

Procedure

1. Make a mixture by combining some paper clips with some marbles in a small jar or bowl.

2. Try your method for separation.

3. If your method did not work, try another method.

Need a Hint?

Try another method described in the introduction: mechanical separation, flotation, filtration, dissolving, or magnetism.

4. When you find a method that works, record it on your *Observations Table* as well as how and why it worked.

5. Repeat Steps 1 to 4 for each of the mixtures described in the *Observations Table.*

Observations

Observation Table

Mixture	Separation Method Need a Hint? Did you use mechanical separation, filtration, flotation, dissolving, or magnetism?	How and why did your method work? Need a Hint? What property did your method separate the parts based on? Size? Appearance? Solubility? Magnetism? Buoyancy?
one handful paper clips and one handful of marbles		
one spoonful salt and one spoonful pepper		
one spoonful sand and 1/4 cup water		
one handful marbles and 1/4 cup water		
one pinch of iron shavings and one spoonful salt		
one handful of paper clips and one handful of toothpicks		
one handful of toothpicks and one handful of sand		

Conclusion

Compare your observations with your hypothesis.
• Which of your hypotheses did not work? Can you explain why?

• Mechanical separation is a method that can be used for many of the mixtures you made. Explain why you might choose another method instead of mechanical separation.

Based on your observations, complete the following chart to answer your Explore Question:

• What methods can be used for separating heterogeneous mixtures?

Mixture	Separation Method?
paper clips and marbles	
salt and pepper	
sand and water	
marbles and water	

Check your answers on pp. 64-65.