

Separating Mixtures part2

Purpose (Learning Target) Students will demonstrate how to use a physical property to separate a mixture.

Hypothesis: How could you use a physical property to separate a mixture?

If one of the substances has a physical property of being magnetic, then when bringing the magnet over the sample mixture it will physically separate the mixture.

Materials:

1. Petri dish (15.8g)
2. Sample mixture (69.9g)
3. Two paper Dixie cups (1.7 g each)
4. Scale (Acculab) gram scale

5. 1 magnet

Procedure: Develop a procedure to test your hypothesis. Continued on next page.

1. Weigh the petri dish on the scale and record the data.
2. Next weigh the petri dish with the sample mixture in it and record the data.
3. Then subtract the weight of the petri dish from the weight of the mixture with the dixie cup.

Data/Results/Observations: Data Table needed for analysis question 3

Procedure	Weight
Petri dish	15.8 g
Petri w/sample mixture	86.3 g
Sample mixture	70.5 g
Dixie cup 1.	1.7 g
Dixie cup 2.	1.7 g
Substance 1. + cup	23.4 g
Substance 2. + cup	49.9 g
Substance 1.	21.7 g
Substance 2.	48.2 g
total	69.9 g

Analysis (Levels 1-4 are required)

Level 1: Define Physical Property. A physical property is any characteristic of a substance that can be observed without changing the substance. For example, color, odor and size are characteristics.

Level 2: Explain how you can use a physical property to separate mixtures.

A mixture can be separated by using a physical property. For example, iron filings and sand are a mixture. The physical properties of magnetism and size allow us to separate the mixture.

Level 3: Using data you collected support why using a physical property is a good way to separate a mixture. Remember it must be tangible.

Using a physical property is a good way to separate a mixture because it is a tangible property. For example, using a magnet to separate iron filings from a mixture of iron filings and sand is a good way to separate the mixture because the magnetism is a tangible property.

Level 4 Compare in detail the results of this lab to an outside occurrence.

The results of this lab compares to the occurrence of separating iron ore from taconite. Iron ore has a physical property of being magnetic. When separating the iron ore from the taconite, they use magnetism. They use the iron ore separator from the taconite to create steel. Like the iron ore separator, both have the property of being magnetic. So when separating a mixture, the magnetism is used.

Conclusion (Required)

1. Conclusions must be written in paragraph form. Do not number or bullet a conclusion.
2. Restate the purpose / question/ problem.
3. Tell whether you accept or reject the hypothesis based on the results from this experiment.
4. What did you learn in this lab?
5. Now I wonder? (What are possible further experiments or questions that you could ask based on this experiment?)

The objective of the separating mixtures in part II is to demonstrate how to use a physical property to separate a mixture. My hypothesis was that if a mixture of iron filings and sand are magnetic then when bringing the magnet over the mixture it will physically separate the mixture. I would accept my hypothesis because one of the mixtures was magnetic and when bringing the magnet over the mixture it did separate the mixture. In our experiment the weight of the mixture and the color of the combined change. We had lost 0.6 grams of the mixture because we may have spilled some while pouring the substances. In this lab I learned that physical properties can separate a mixture. Now I wonder what I can have happened if we had added another substance to the mixture?