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Science
Quarter 1 – Module 2
Lesson 4: Separating Mixtures Using Magnet

Science – Grade 6
Alternative Delivery Mode
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Introductory Message

This Self- Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises and discussion are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide your step by step as you discover and understand the lesson prepared for you.

Pre- test are are provided to measure your prior knowledge on lesson on each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator on your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self –check your learning. Answer key are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Note to the teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home- based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module do not hesitate to consult your facilitator.

Thank you.

For the learner:

Welcome to the **Science 6** Alternative Delivery Mode (ADM) Module **Separating Mixtures Using Magnet**!

This module was designed to provide you with fun and meaningful opportunities for guided and independent learning at your own pace and time. You will be enabled to process the contents of the learning resource while being an active learner.

This module has the following parts and corresponding icons:

	What I Need to Know	This will give you an idea of the skills or competencies you are expected to learn in the module.
	What I Know	This part includes an activity that aims to check what you already know about the lesson to take. If you get all the answers correct (100%), you may decide to skip this module.
	What's In	This is a brief drill or review to help you link the current lesson with the previous one.
	What's New	In this portion, the new lesson will be introduced to you in various ways; a story, a song, a poem, a problem opener, an activity or a situation.
	What is It	This section provides a brief discussion of the lesson. This aims to help you discover and understand new concepts and skills.
	What's More	This comprises activities for independent practice to solidify your understanding and skills of the topic. You may check the answers to the exercises using the Answer Key at the end of the module.
	What I Have Learned	This includes questions or blank sentence/paragraph to be filled in to process what you learned from the lesson.

	What I Can Do	This section provides an activity which will help you transfer your new knowledge or skill into real life situations or concerns.
	Assessment	This is a task which aims to evaluate your level of mastery in achieving the learning competency.
	Additional Activities	In this portion, another activity will be given to you to enrich your knowledge or skill of the lesson learned.
	Answer Key	This contains answers to all activities in the module.

At the end of this module you will also find:

References	This is a list of all sources used in developing this module.

The following are some reminders in using this module:

1. Use the module with care. Do not put unnecessary mark/s on any part of the module. Use a separate sheet of paper in answering the exercises.
2. Don't forget to answer *What I Know* before moving on to the other activities included in the module.
3. Read the instruction carefully before doing each task.
4. Observe honesty and integrity in doing the tasks and checking your answers.
5. Finish the task at hand before proceeding to the next.
6. Return this module to your teacher/facilitator once you are through with it.

If you encounter any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator. Always bear in mind that you are not alone.

We hope that through this material, you will experience meaningful learning and gain deep understanding of the relevant competencies. You can do it!

What I Need to Know

This module was designed and written with you in mind. It is here to help you master techniques in separating mixtures using a Magnet. The scope of this module permits it to be used in many different learning situations. The language used recognizes the diverse vocabulary level of students. The lessons are arranged to follow the standard sequence of the course. But the order in which you read them can be changed to correspond with the module you are now using.

The module is about:

- Describing techniques in separating mixtures using a magnet.

After going through this module, you are expected to be able to

- describe techniques in separating mixtures by using a magnet and
- apply the technique in everyday life.

What I Know

Direction: Choose the letter of the best answer. Write your answers on your Science Journal.

1. Iron fillings in sawdust can be separated by means of _____.
   a. decantation
   c. filtration
   b. magnetic separation
   d. sifting

2. How will you separate mixture of metal and nonmetal objects?
   a. by decantation
   c. by using a magnet
   b. by winnowing
   d. by filtration

3. What method of separating mixtures is being illustrated below?

   a. magnetic separation
   b. distillation
   c. filtration
   d. decantation

4. Which of the following objects can be separated by using a magnet?
   a. chalk powder
   b. paper
   c. rubber
   d. coins

5. The following mixture of materials can be separated by a magnet, **EXCEPT**:
   a. flour and paper clips
   b. water and flour
   c. pins in sand
   d. talc powder and needle

Put a check ✓ if the mixtures can be separated by a magnet and **X** if not. Write your answers on your Science Journal.

_____ 6. oil and water
_____ 7. flour and pins
_____ 8. staple wire and tissue paper
_____ 9. thumb tacks and bits of paper
_____ 10. talc powder and bond paper

Separating Mixtures Using Magnet

Have you experienced that your pins mixed up with your talc powder? What technique of separating the pins from the talc powder? Have you tried using a magnet in separating them?

Magnetic separation one of the ways to separate mixture of metals from non-metals.

What's In

What separation technique is used in the illustration below? Write your answers on your Science Journal.

1.
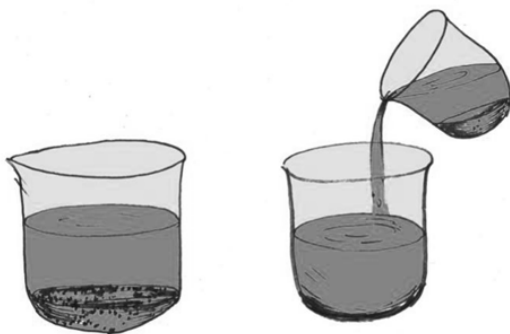
(decantation, distillation)

2.

(sieving, evaporation)

What's New

Answer the following questions: Write your answer in your Science Journal.

1. What do you usually do when a needle in your house is mixed with other nonmetal materials?

2. Have you tried using a magnet to find it?

3. How a magnet can be used to separate mixtures?

What is It

Components of mixtures can be separated in many ways. The method that is being used usually depends on the type of mixture. Metal and non-metal objects can be separated by using a magnet. There is no chemical reaction involved in the separation of components.

Metals which are made up alloy, nickel, or cobalt are easily attracted to the magnet, while non-metals are not. Iron fillings, thumb tacks, staple wire, pins, coins, and needle are some common examples of objects that are attracted to the magnet. When they mixed with non-metals, these could be separated by magnet.
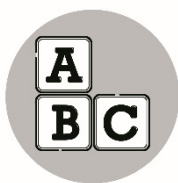
What's More

Activity

Choose from the word box the mixtures that can be separated by magnet. Write your answers on your Science Journal.

acetone and water	staple wire and paper
grains and husks	iron filling and sulphur powder
thumb tacks and paper	pins and buttons
coins and grains	soap and shampoo

What I Have Learned

Direction: Complete the statements below by choosing the correct answers from the given choices in the box. Write the complete paragraph in your Science Journal.
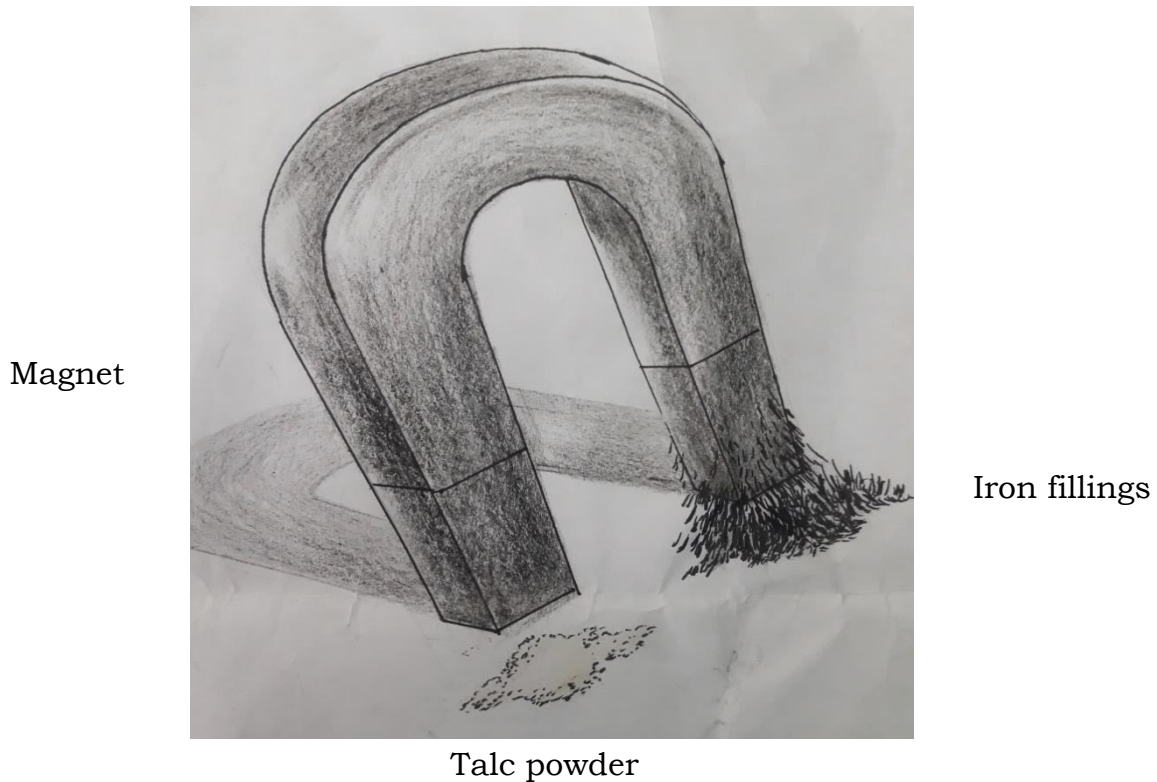
magnetic separation	magnet	metals
non-metals	paper	iron fillings

     I learned that (1) _____ is a technique used to separate (2) _____ from (3) _____. Metals are attracted to the (4) _____ while non-metals are not. Mixture of (5) _____ and talc powder can be separated by magnetism.

What I Can Do

Answer the questions below. Write your answers on your Science Journal.

Magnet

Iron fillings

Talc powder

1. Based from the given illustration, what are the different components of the mixture?

2. How do the components of the mixture of talc powder and iron fillings be separated?

3. Cite specific situation that you experienced at home or in school where magnet used to separate mixtures?

Assessment

Choose the letter of the best answer. Write your answers in your Science Journal.

1. Metal and non-metal objects can be separated by using a _____.
    a. filter
    b. magnet
    c. sieve
    d. water

2. How will you separate mixture of metal and nonmetal objects?
    a. by decantation
    b. by winnowing
   c. by using a magnet
    d. by evaporation

3. Needle in sawdust can be separated by means of _____.
    a. decantation
    b. magnetic separation
    c. filtration
    d. sifting

4. How will you separate mixture of staple wire and chalk powder?
    a. by decantation
    b. by winnowing
    c. by using a magnet
    d. by evaporation

5. Mrs. Cruz's needle was mixed with bits of paper. How will she separate the needle safely from the bits of paper?
    a. by decantation
    b. by winnowing
    c. by using a magnet
    d. by evaporation

6. How will you separate paper clips and thumbtacks from flour?
    a. by using magnet
    b. by using a sieve
    c. by using a filter paper
    d. by using filter paper

7. Which of the following best describes a magnet when used to separate mixtures?
   a. It can separate metals from nonmetals.
   b. It can separate nonmetals objects.
   c. It can separate larger particles.
   d. It can separate smaller particles.

8. _____ when mixed with non-metals, could be separated by magnet.
   a. rubber
   b. plastic
   c. water
   d. metals

9. Metals which are made up of _____ are easily attracted to the magnet.
   a. alloy, nickel or cobalt
   b. paint, water or powder
   c. salt, rubber or plastic
   d. gold, ruby, diamond

10. There is no _____ involved in the separation of components in magnetism.
    a. physical reaction
    b. mechanical reaction
    c. chemical reaction
    d. acid reaction
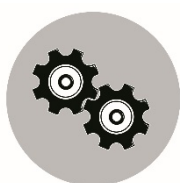
Additional Activities

Think of at least three activities in the community where magnetic separation is applicable. Write a short paragraph describing those activities. You may use illustration or pictures to further explain your answer. Do it in your Science journal.

Answer Key

What's More	What I Have Learned	Assessment
1.thumbtacks and paper	1. magnetism	1. b
2.coins and grains	2. metals	2. c
3.staple wire and paper	3. non metals	3. b
4.iron fillings and sulphur powder	4. magnet	4. c
5.pins and buttons	5. iron fillings	5. c
		6. a
		7. a
		8. d
		9. a
		10. c

What I Know	What's New	What's In
1. b		1. evaporation
2. c		2. decantation
3. a		3. sewing
4. d		4. filtration
5. b		5. winnowing
6. X		
7. /		
8. /		
9. /		
10. X		

Answer Key

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References

K to 12 Curriculum Guide in Science S6MTId-f-2

Padpad Evelyn, C. (2017). The New Science Links Worktext in Science and Technology 6. 856 Nicanor Reyes, Sr. St, Manila Philippines. Rex Book Store, Inc.