THIRD TERM
WEEKLY LESSON NOTES
WEEK 6

Week Ending: 04-08-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces & Energy	
Class: B8	**Class Size:**	**Sub Strand:** Magnetization & Magnetic Force	
Content Standard: B8.4.4.1 Demonstrate the production of magnet, domestic and industrial application of Magnetic force and its relationship with Newton's Second law of motion and in everyday life	**Indicator:** B8.4.4.1.1 Demonstrate simple ways of making magnets and show how magnetic force can be applied in domestic and industrial activities	**Lesson:** 1 of 2	
Performance Indicator: Learners can demonstrate simple ways of making magnets and show how magnetic force can be applied in domestic and industrial activities		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 74			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on the previous lesson. *Engage the learners by asking questions such as: "What are magnets used for?" and "How do magnets work?"* Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Divide the learners into small groups. Provide each group with iron nails, paperclips, and screws. Instruct the learners to rub the magnets along one direction on the materials provided. They should repeat this process several times. Conduct several demonstrations to showcase the power of magnetic force: a. Use a compass to demonstrate how a magnet aligns with Earth's magnetic field. b. Show how a magnet can attract small metal objects from a distance. c. Demonstrate how the poles of magnets repel or attract each other. Lead a class discussion on the concept of magnetic force and its applications in everyday life and industry. Some guiding questions include: • How can magnetic force be used in domestic activities, such as hanging up refrigerator magnets or securing cabinet doors? • In what ways is magnetic force used in industrial activities, such as manufacturing or transportation? Provide real-world examples to illustrate the applications of magnetic force, such as:	iron nails, paperclips, screws, small magnetic objects

	• Magnetic levitation trains (Maglev trains) that use magnetic force for propulsion. • Electric motors that convert electrical energy into mechanical energy using magnets. • Magnetic separators used in recycling facilities to separate magnetic and non-magnetic materials. Learners demonstrate some application of magnetic force in domestic and industrial activities (E. g. compass, alarms, loud speakers, etc.). Explore other industrial and domestic applications of magnetic force and present findings.	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

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Duration: 100mins		**Strand:** Forces & Energy
Class: B8	**Class Size:**	**Sub Strand:** Magnetization & Magnetic Force

Content Standard: B8.4.4.1 Demonstrate the production of magnet, domestic and industrial application of Magnetic force and its relationship with Newton's Second law of motion and in everyday life	**Indicator:** B8.4.4.1.2. Explain the relationship between magnetic force and Newton's Second Law of motion; and show the law's application to life	**Lesson:** 2 of 2

Performance Indicator: Learners can explain the relationship between magnetic force and Newton's Second Law of motion	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:

References: Science Curriculum Pg. 74

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Begin by reviewing Newton's Second Law of Motion, explaining that it states that the acceleration of an object is directly proportional to the force applied and inversely proportional to its mass. Ask the learners to recall examples of forces they have learned about, such as gravity or friction.	
PHASE 2: **NEW LEARNING**	Show a magnet to the learners and explain that magnets can exert a force on certain materials, causing them to move. Demonstrate the concept by using a magnet to move small metal objects, such as paperclips or toy cars. Discuss how the magnet's force affects the motion of the objects, and how the strength of the force can be adjusted by changing the distance between the magnet and the object. Divide the learners into small groups. Provide each group with a toy car and a magnet. Instruct the learners to place the magnet on the car and observe the effect on the car's motion as they move the magnet. Encourage the learners to vary the force applied by adjusting the distance between the magnet and the car. Have the learners record their observations and discuss the relationship between the magnetic force applied and the resulting acceleration of the car. Lead a class discussion on the relationship between magnetic force and Newton's Second Law of Motion. Explain how the force exerted by the magnet can accelerate or decelerate an object depending on the direction of the force.	iron nails, paperclips, screws, small magnetic objects

	Ask the learners to brainstorm and share real-life examples where magnetic force and Newton's Second Law of Motion are applied, such as: • Maglev trains that use magnetic forces to levitate and propel the train forward. • Electric motors that utilize magnetic forces to convert electrical energy into mechanical energy. • MRI machines that use powerful magnets to generate images of the body. <u>Assessment</u> Perform an experiment to show the relationship between force and motion using magnetic force, and the principle of Newton's Second Law of Motion. Materials: *1. A small magnet (such as a neodymium magnet)* *2. A flat surface (e.g., table or desk)* *3. A piece of string* *4. A small object (e.g., a paperclip or a lightweight metal object)* *5. A ruler or measuring tape* Procedure: *1. Place the flat surface (table or desk) in a stable position.* *2. Tie one end of the string to the small object (paperclip or lightweight metal object).* *3. Position the small magnet on the flat surface, so it is stationary.* *4. Place the small object near the magnet without touching it.* *5. Mark the initial position of the small object on the flat surface.* *6. Gently pull the free end of the string horizontally, so the small object moves towards the magnet.* *7. Observe and record the distance traveled by the small object before it comes to a stop.* *8. Repeat the experiment several times, pulling the string with different amounts of force each time.* *9. Measure and record the distance traveled by the small object for each force applied.*	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	