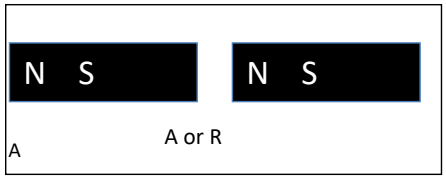
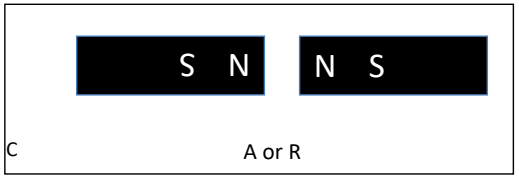
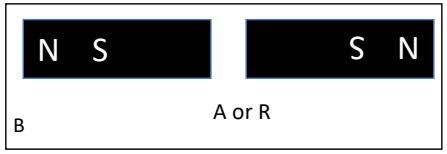
Guided Practice

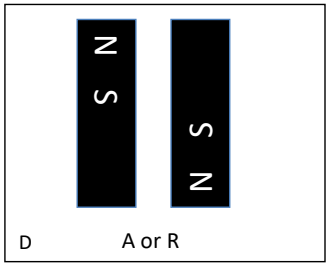
Name: _____ Date: _____

Directions: Draw arrows to show the force field direction in each of the scenarios. Circle **A** if the force field is an attraction and **R** if the force field is a repulsion.

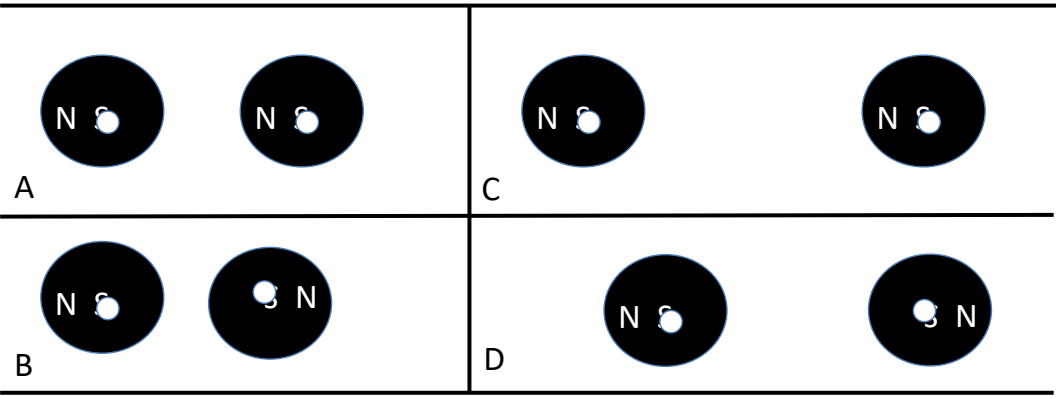








Directions: Rank the following scenarios in order from the greatest magnetic force field to the least force field.



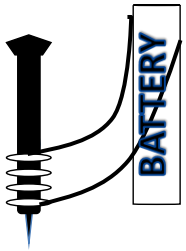
1 ___ 2____

3____ 4____

greatest → least

8.11 Electromagnetic Forces

Guided Practice

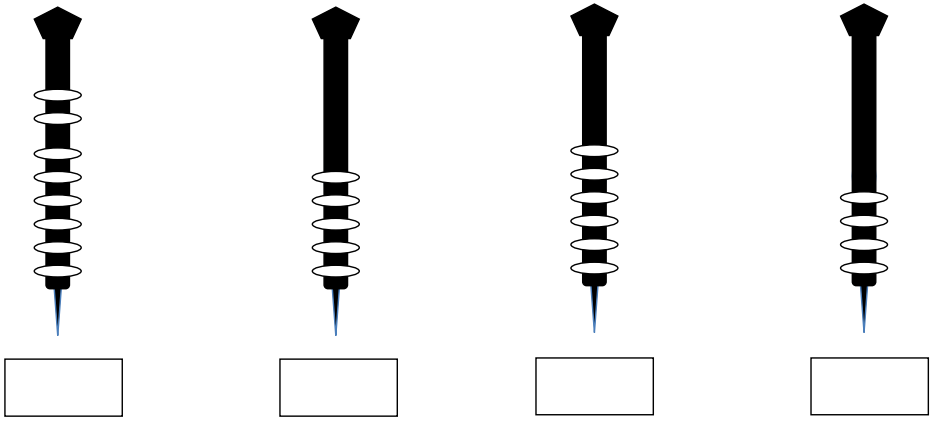


Study the picture to the left. When copper wire connected to a battery is wrapped around a nail, an electromagnetic force is created.

In the pictures below, different amounts of wire are wrapped around each of the nails. When the copper wires were connected to a battery, the four nails picked up one of the following numbers of paper clips.

30 - 45 - 60 - 75

Study the nails and decide which nail picked up which amount of paper clips. Record the appropriate number in each box.



Guided Practice

Graphic Organizer

Directions: Use the terms in the word bank to complete the graphic organizer below.

WORD BANK:

More copper wire increases force field

Magnetic

Decrease distance, increases force field

Push

Attractions

Repulsion

Force created with moving electrons in a copper wire

Same poles

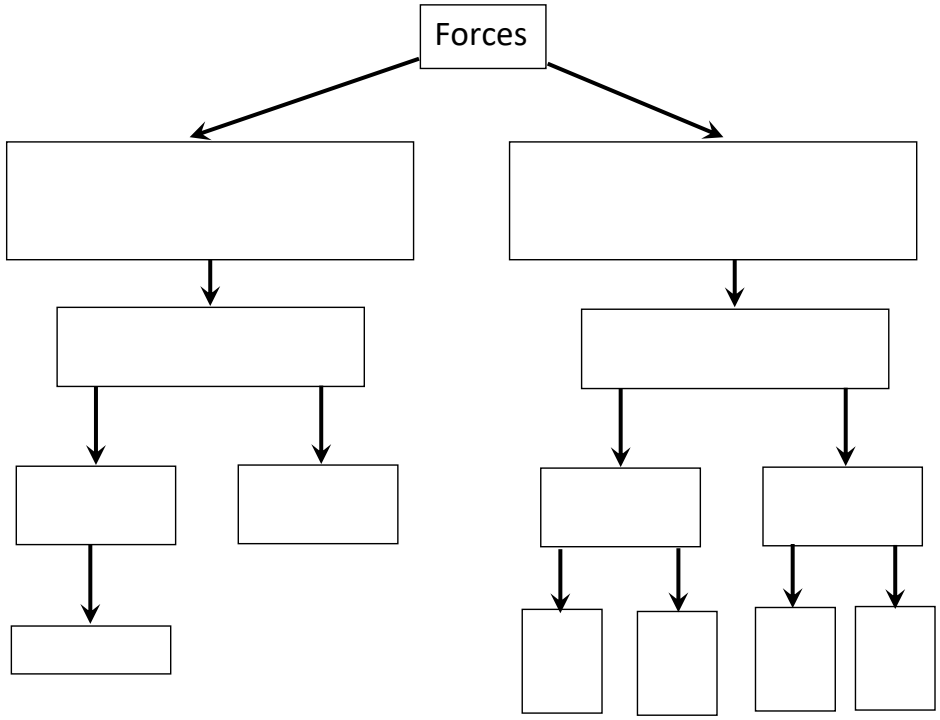
Opposite poles

Pull

Pul

Electromagnetic

Attraction



Guided Practice

Check Understanding

Directions: Fill in the blanks using the word bank below.

Word Bank

force	decrease	electrons
repulsion	copper	towards

Electromagnetic forces are created due to the movement of _____ in copper wire. Adding the amount of _____ wire will increase the _____ field, while decreasing the amount of copper wire will _____ the force field. Metal is pulled _____ the force field due to magnetic attraction. If the same poles are present,_____ will occur. This will push the metal away.

Directions: Answer the questions below using complete sentences.

1. Create a step-by-step list in creating an electromagnet.
   A. _____
   B. _____
   C. _____
   D. _____

2. Describe a purpose for an electromagnet in a real-life situation.
   _____
   _____
   _____