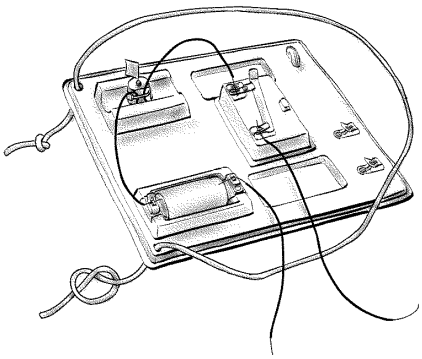
LETTER TO PARENTS

Cut here and paste onto school letterhead before making copies.

SCIENCE NEWS

Dear Parents,



Our class is beginning a new science unit using the **FOSS Magnetism and Electricity Module.** We will investigate permanent magnets, build electric circuits powered by D-cells (flashlight batteries), and explore electromagnetism.

You can increase your child's understanding and interest in magnetism and electricity by asking him or her to talk about the investigations we are doing at school. Also, watch for Home/School Connections sheets that I will be sending home from time to time. These activities describe ways the whole family can look more closely at magnetism and electricity around your home. You may find **magnets** holding notes on the refrigerator or keeping cabinets closed; **electricity** powering lamps, telephones, and flashlights; and **electromagnets** in motors and speakers. It can be lots of fun to make inventories of magnets and electric appliances.

To help your child investigate circuitry, you could provide an old broken small device for him or her to take apart. You can explore the device together to discover how it is wired and where connections are made.

One thing we will stress in our study of magnetism and electricity at school is safety. You may want to review your home safety rules for magnetism and electricity as well.

- Never put any object other than a certified plug into wall sockets.
- Do not open the case of an electric device that has a power cord.
- Do not bring magnets near computers, videotapes, or audio recordings.

We are looking forward to many weeks of exciting investigations with this Magnetism and Electricity Module. If you have any questions or comments, or have expertise you would like to share with the class, please drop me a note.

To learn more about the FOSS Magnetism and Electricity Module and how it is aligned to the California Science Content Standards, go to www.fossweb.com/CA and click on the grade four modules. There are a number of resources available on-line for you and your child.

Name _____

Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 1: THE FORCE

MAGNETS AT HOME

How are permanent magnets used around your home?

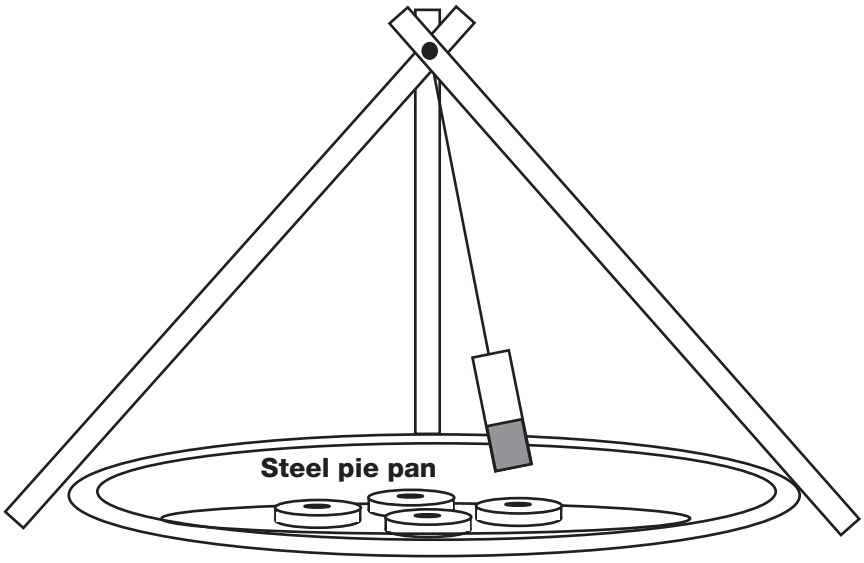
Places to check for magnets:

- Compasses
- Note holders on the refrigerator
- Cabinet and refrigerator door closers
- Toolboxes

Can you think of another way to use magnets around the house?

Can you invent a magnet game?

Talk over some ideas with your family and try some games out if you can. Draw a picture of your invention to share with the class. Write a paragraph explaining what your invention does.



Swinging magnet game

Name _____

Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 2: MAKING CONNECTIONS

WHERE IS THE ELECTRICITY?

Where is the electricity in your home? Take a tour and count the number of

- Lights

- Appliances that use electricity

- Wall outlets where you can plug things in

- Wall switches for turning on lights

Be sure to talk with your family about safety when using electric appliances. Write your family safety rules below.

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Name _____

Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 3: ADVANCED CONNECTIONS

WHAT IS INSIDE AN ELECTRONIC APPLIANCE?

Do you have an old, broken radio, portable tape player, calculator, cassette player, remote control, or walkie-talkie? Or what about most anything else that works on electricity? Take a look inside. Look for advanced circuits to see where your knowledge of electricity can lead you.

Safety Rules

- Get approval from a parent before taking a device apart.
- Make sure the device is unplugged and batteries are removed.
- Get help opening the case. Remember, safety first.
- NO televisions, please. They can be dangerous to explore.

Things to look for and do

You may be surprised to find very few wires. What kind of conductors are used in modern circuits instead of wires? Can you draw an example?

Can you find any familiar components like motors and lights? What function do they serve in the device?

Make drawings of one or two of the most common components you find.

NOTE: What if you do not have an old device to take apart? Draw a schematic of *one circuit* with two lightbulbs in parallel *in series with* a third lightbulb. Think about it...it can be done.

Name _____

Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 4: CURRENT ATTRACTIONS

Safety Note

Ask an adult to help you with this activity. Be sure to follow safety rules about electricity. Just look, don't touch!

FUSES AND CIRCUIT BREAKERS

Home electricity is provided by the electric utility company in your community. One large wire brings the electricity into your home. The wire can come to your home from a power line strung on poles, or from a cable underground. Can you find where the main electricity wire comes to your home?

You may have several wires coming to your home. Which one is the electricity? The trick is to look for the electric meter. The main wire always comes to the electric meter first. Why is there a meter on the electric line?

The electricity next goes to a fuse box or circuit-breaker box. The electricity divides and goes to several locations in your home. Each fuse or circuit breaker is included in a different circuit. How many circuits are in your home?

Wires are hidden inside the walls of your home. We connect our electric lights and appliances to the electric power in the walls by plugging them into electric sockets. How do you think plugging a lamp into a socket completes a circuit to light the lamp? Draw a schematic to show how you think it might work.