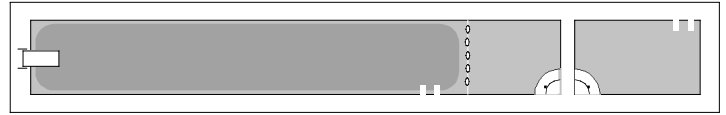


# PHYZ SPRINGBOARD: FIELDS



## CONCEPT CONSTRUCTION

1. Does the Earth have an influence on things around it? (For example, does the behavior of a dropped pen depend on the presence of the Earth?) \_\_\_Yes \_\_\_No.

2. a. What is the name of this influence? \_\_\_\_\_

b. What does the Earth have that allows it to have this influence? \_\_\_\_\_

c. What do other objects have that allow them to be influenced by the Earth? \_\_\_\_\_

d. How far does the Earth's influence extend? \_\_\_\_\_

3. Suppose an elephant and a peanut find themselves suspended near the surface of the Earth.

a. Which has a greater gravitational force acting on it? \_\_\_Elephant \_\_\_Peanut \_\_\_Same for both.

b. Which would undergo a greater acceleration if dropped? \_\_\_\_\_

c. What is the ratio that defines the value of this quantity?

d. What is another name for this ratio? \_\_\_\_\_

e. What is the symbol for this quantity and what are the units of measure for it?

## AND NOW FOR SOMETHING COMPLETELY DIFFERENT

1. Does a charged Van de Graaff generator dome have an influence on things around it?  
\_\_\_Yes \_\_\_No.

2. a. What is the name of this influence? \_\_\_\_\_

b. What does the dome have that allows it to have this influence? \_\_\_\_\_

c. What do other objects have that allow them to be influenced by the dome? \_\_\_\_\_

d. How far does the dome's influence extend? \_\_\_\_\_

3. Suppose a small charge and a large charge find themselves suspended near the dome.

a. Which has a greater electric force acting on it? \_\_\_\_\_

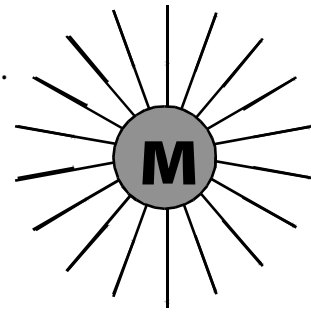
b. What ratio is the same for both charges?

c. What is the name for this ratio? \_\_\_\_\_

d. What is the symbol for this quantity and what are the units of measure for it?

**DRAW THEM**

1. The Earth's gravitational field can be represented graphically as shown.

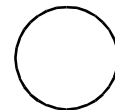


a. What might the lines represent? What is indicated by the direction of the arrows?

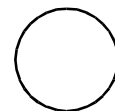
b. What happens to the density of the lines as you go farther and farther from the Earth?

c. What does the field line density indicate about the Earth's actual gravitational field?

2. a. Using a scheme like the one above, how could the electric field around a charged object be represented?



b. What about an oppositely charged object?



c. Which way should the arrows go?

d. What happens to the strength of the electric field as you move farther away from the charge?

e. How would you draw the electric field between two oppositely charged plates?

