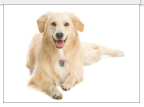
Force Fields Worksheet

Integrated Science

Gravitational Fields

Object	Mass	Distance from Dog (m)	Distance from Cat (m)	Distance from Dainty Lady (m)	Distance from BIG Man (m)
Dog	20 kg	———	15	14	10
Cat	10 kg	15	———	14	10
Dainty Lady	50 kg	14	14	———	5
BIG Man	100 kg	10	10	5	———



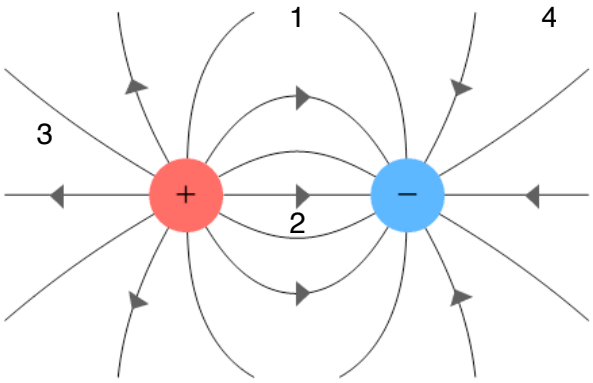
1. Which object <u>creates</u> the greatest gravitational force on the other objects? How do you know?

2. Which object is <u>receiving</u> the greatest gravitational force? Explain how you know.

3. Which two objects would exert the least amount of gravitational force on one another? Explain how you know.

4. Draw some gravitational field force arrows for the BIG Man below.

Electrical Field



1. Imagine that Object 1 is a positively charged particle. Describe its motion and direction and explain how you know where it will go.

2. Imagine that Object 1 is now a NEGATIVELY charged particle. Describe its motion and direction and explain how you know where it will go.

3. Object 2 is a positively charged particle. Determine its motion.

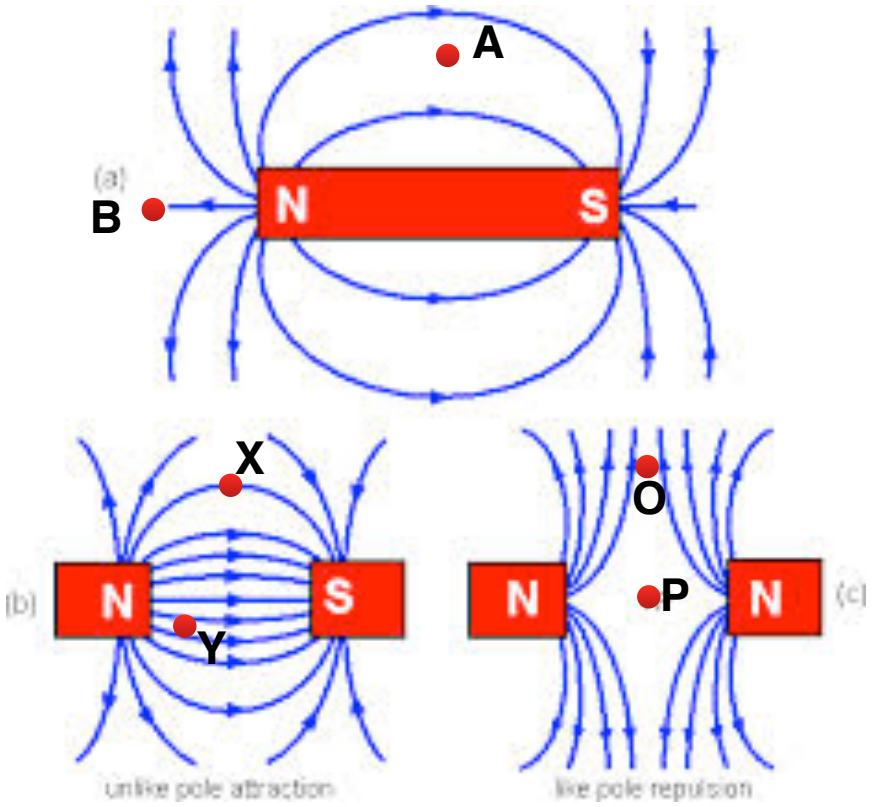
4. Object 2 is a negatively charged particle. Determine its motion.

5. Object 3 is a positively charged particle. Determine its motion.

6. Object 3 is a negatively charged particle. Determine its motion.

7. Object 4 is a negatively charged particle. What is its motion?

Magnetic Field
(In all examples, the field generated by each pole is equally as strong)



1. How would Object A move if it has a North polarity?
2. How would Object B move if it had a south polarity? How about a North Polarity?
3. How would Object X move if it were a North Polarity?
4. How would Object Y move if it were a south polarity?
5. Draw a force diagram for Particle P, and describe its motion if it has a N magnetic polarity.

6. Draw a force diagram for Particle P, and describe its motion if it has a South magnetic polarity.
7. How would particle O move if it were a North polarity? South Polarity?
8. Imagine that you shoved particle P (North polarity) towards the right. How would it move?
9. Imagine that you shoved particle P (South polarity) towards the right. How would it move?