**AP Physics – Faraday’s Electromagnetic PhET Lab**

Today, you will use the Faraday’s Law PhET lab to bar magnets, permanent magnets and a generator.

**Part 1 – Bar Magnet**

1) Open the Faraday’s Electromagnetic PhET simulation. Begin on the “Bar Magnet” tab. What can you change about the simulation?

2) What happens to the compass as you move it around the magnet?

Draw a picture of what you see below

|  |
| --- |
|  |

3) What do you notice about the arrows the further they are from the magnet? What do you think this means?

**Part 2 – Pickup Coil**

4) Find two ways to make the light bulb light up. Describe them in the table below.

|  |  |  |
| --- | --- | --- |
| Method | Picture | Description |
| 1 |  |  |
| 2 |  |  |

5) Select one of your methods and now try to increase the brightness of the bulb by changing the properties of the pickup coil.

|  |  |
| --- | --- |
| Item | How it influences the brightness of the bulb |
|  |  |
|  |  |

6) Why do you think it is called a pickup coil?

**Part 3 – Generator**

6) Using what you have learned with the pickup coil, you will now design the best generator ever (that the sim will allow!). Make a list of the characteristics you think it should have below.

7) Test your ideas out using the simulation. How does the simulation accomplish what you wanted it to? Does it include anything additional?