*The Oscillating Plate Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

1. Below, draw a diagram of the motion of a ball bouncing on a table.

2. Below, draw a diagram of the motion of a plate oscillating up and down.

3. On the diagram in number 2, draw (in another color) the ball’s motion on top as if the two objects do not interact.

4. Below, sketch a graph of the plate oscillating up and down and the ball interacting with the plate as it bounces. Draw each path in a different color.

5. Identify what equations will be necessary to use for the motion of each object.

6. How do the two objects interact? How can we model that mathematically?