Your task is to choose one or more of the following activities to investigate. On the back of this page, please (1) identify the activity/activities you chose to do; (2) describe your process for completing the activity; (3) report your results, including any data you collected, along with any other interesting observations or questions you may have had. Be as detailed as possible! **Please see Mr. Kearney if you need any materials.**

MAKE A PENDULUM SECOND TIMER
You can make a second timer at home with a mass, like a fishing weight or a big washer, and some string or thread. Strive to get it as accurate as possible. Fine tune it until you can call 15 seconds at the same time another family member sees the second hand on a clock hit 15 seconds.

MAKE A MINUTE TIMER
This might be a little more demanding, as pendulums tend to lose energy (because of friction at the pivot and air resistance) as they swing. What variables can you increase to improve your chances of making the pendulum swing for a minute?

RIDE THE PENDULUM
What's a playground swing but a big pendulum you can ride? Can you guess how many cycles (complete swings back and forth) a swing will make in 30 seconds? Will longer swings complete more or fewer cycles in 30 seconds? Take a ride and find out.

INVESTIGATE LINKED PENDULUMS
A double pendulum provides lots of interesting variables to investigate. Hang two equal pendulums next to each other and connect them with a straw that has been split at each end. Investigate changing the release positions, or releasing one pendulum after the other. Add more mass to one pendulum than the other, or try any other variable that might affect the outcome.

INVESTIGATE DOUBLE-DECKER PENDULUMS
Attach a second pendulum to the paper clip of the first pendulum. Observe the motion as you change variables in the system, such as mass, length of the different pendulums, and release strategies

INVESTIGATE STRINGLESS PENDULUMS
Replace the pendulum string with some kind of rigid material. Compare pendulums made with rulers, sticks, straws, paper-clip chains, or wire. Compare these pendulums with the standard swingers. Does something seem peculiar? What happens to the period the cycle of the two pendulums as the mass of the bob increases?