Name:_____ Period:_____ #:_____

Acceleration is the _____ at which _____ changes.

Newton's 2nd law of Motion is _____

_____

This law can be written as an equation, write that equation here. _____

If the force stays the same, explain the relationship between MASS and ACCELERATION

If the MASS is increased, then the ACCELERATION will _____

If the MASS is decreased, then the ACCELERATION will _____

Problem:

What is the effect of _____ on _____ of the ball?

Hypothesis:

If _____, then _____,

because _____

Materials:

You will be given 1 straw per table. One person is responsible for using the straw.
You be given 3 different sized balls.
Use your timers on your cell phones to measure the time.
Use ruler or meter stick to measure the distance.
Masking tape
Scale

Procedures:

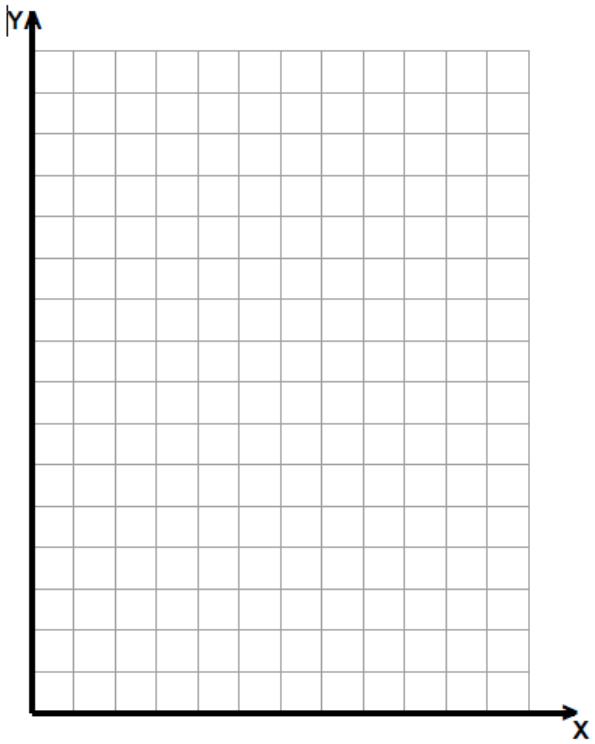
1. Use the masking tape to mark a starting line and a finish line on your desk. This will be your course.
2. Get one of the three balls. Write the type of ball in the space provided in the data table. Write the mass of the ball in the space provided using the scales.
3. Measure the distance of your race track using a ruler or meter stick. Write this number in your data table.
4. Using the straw, gently blow through the straw, moving the ball from the starting point to the finish line. Try to keep your breath constant. Only use the air from the straw to move the ball. Use your timer to record the time it takes to complete the race.
5. Repeat step 4 for trials 2 and 3.
6. Complete steps 4 and 5 for the remaining balls.
7. Find the average acceleration for each ball.

$$\text{Velocity} = \frac{\text{Distance}}{\text{Time}}$$

$$\text{Acceleration} = \frac{\text{Final Speed} - \text{Initial Speed}}{\text{Time}}$$

Name:_____ Period:_____ #:_____

	Type of ball	Mass (g)	Distance travelled (cm)	Time (s)	Velocity - final (cm/s)	Velocity - initial (cm/s)	Acceleration (cm/s/s)
Trial 1							
Trial2							
Trial 3							
Average							
Trial 1							
Trial2							
Trial 3							
Average							
Trial 1							
Trial2							
Trial 3							
Average							



Graph your results. Make sure you Title your graph and label each axis. The Independent Variable goes on the X Axis. The Dependent Variable goes on the Y Axis. You can use a bar graph.