Experimental Design!

Name: _____

Date: _____   Period: ____

Design and conduct your own experiments with projectiles!

Log onto http://phet.colorado.edu/simulations/sims.php?sim=Projectile_Motion *Press **RUN NOW** button.

1) Write your best understanding of the word projectile:

_____

_____.

2) Name all of the factors you think affect projectile movement (try to list at least <u>five</u> factors):

Experiment 1:

3) With your lab partner, choose **one** of the factors you've just listed above and propose a question to test that factor. Your goal is to hit the target!

   a) Factor: _____

   b) Question:

_____

_____.

4) Write your hypothesis regarding how the factor you've chosen will affect your ability to hit the target (If…then…because):

_____

_____.

5) What is your test variable? _____ Outcome variable? _____

6) What variables should you keep constant? _____

7) Once you have put all variables in place, fire away! Did you hit your target? Write a conclusion statement explaining your results.

_____

_____.

Experiment 2:

1) With your lab partner, choose a **<u>different</u>** factor than the one above and propose a question to test that factor. Your goal is to hit the target!

   a) Factor: _____

   b) Question:

   _____

   _____.

2) Write your hypothesis regarding how the factor you've chosen will affect your ability to hit the target (If…then…because):

   _____

   _____.

3) What is your test variable? _____ Outcome variable? _____

4) What variables should you keep constant? _____

5) Once you have put all variables in place, fire away! Did you hit your target? Write a conclusion statement explaining your results.

   _____

   _____.

Experiment 3:

1) With your lab partner, choose a **different** factor than the one above and propose a question to test that factor. Your goal is to hit the target!

   a) Factor: _____

   b) Question:

   _____

   _____.

2) Write your hypothesis regarding how the factor you've chosen will affect your ability to hit the target (If...then...because):

   _____

   _____.

3) What is your test variable? _____ Outcome variable? _____

4) What variables should you keep constant? _____

5) Once you have put all variables in place, fire away! Did you hit your target? Write a conclusion statement explaining your results.

   _____

   _____.

   Which factor appears most important in projectile motion? Explain your answer!