Egg Drop with Science Girl!

Hello Lab Assistants (That's You!),

I'm Science Girl and welcome to my Lab! Usually, I would be on Main Street showing you amazing smoke-bubbles or having you flip water upside down. This year at the Virtual NM State Fair, I get to show you experiments that you can do right at home! Are you ready to harness the forces of nature to safely drop an egg? As long as you promise not to scramble all of them for breakfast, I think we will be just fine!

⚠ LAB NOTE ⚠: Make sure you document the fun with pictures and/or videos and send them into the Virtual NM State Fair and Science Girl's Lab!

Here are the Materials that you will need!

1. 1-3 Raw Eggs (…. And a few more… just in case!)
2. Metal Pie Pan and/or Plastic Lunch Tray
3. 1-3 Glass Cups
4. Water
5. 1-3 Toilet Paper Tubes
6. 1-3 Tennis Balls
7. Paper Towels/Clean-up Supplies
8. Confidence of Steel
9. Safety Glasses
10. Adult Supervision (with a camera!)

⚠ LAB NOTE ⚠: A good scientist ALWAYS reads through the instructions BEFORE doing the experiment.

Here is the experiment Procedure:

1. Find an Adult: Find an adult to watch you do this experiment. Experiments are WAY more fun (and safer!) with an audience.
2. Clear a Space and Cover It: You will need a counter or a table to do this experiment.
3. Dress Up: Put on those safety glasses.
4. Place and Fill: Put one of the glasses on the table and fill it about ¾ of the way up with water.
5. Balance: Place the pie pan on top the glass of water.

6. Place: Put a toilet paper tube vertically on the pan so that it stands on one end. IMPORTANT!! Make sure the toilet paper tube lines up with the glass underneath.

7. Place: Take an egg and place it on top of the tube.

8. Deep breath: You are going to need it!

9. Set Up: Place your hand right next to the pan so that your palm is facing the pan, then back it up about 10 inches.

10. Knock it out: Count down from 5 and then hit the pan on the side so that it is knocked off of the glass. Watch what happens (Make sure that camera is rolling!) IMPORTANT!! Make sure that your hand STOPS before hitting the glass of water…. Just knock the pan.

11. OPTIONAL: Do it again: This time put the phone camera in slow-motion and observe the footage!

12. Clean Up: Throw away the eggs, wash your hands, wipe up the table, and water the plants with the water! Put away the materials.

⚠ LAB NOTE ⚠: Now that you have read the science experiment, go ahead and read these questions and answer them BEFORE you watch the video of Science Girl doing it!

BEFORE VIDEO QUESTIONS

1. Predict what you think will happen to the eggs when you knock out the pan:

   _____
   _____
   _____

2. Why do you think that? (i.e. I think this because the experiment said….. ; This is because I have seen….)

   _____
   _____

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3. What is ONE question about this experiment that you want to answer?

   _____
   _____

WATCH: Go watch the video of Science Girl performing this experiment!!!

POST-VIDEO QUESTIONS:

4. What happened when Science Girl knocked out the pan from the glass?

   _____
   _____

5. Look back at your answer to question 1. Was your prediction correct? How was it the same/different from what happened in the video?

   _____
   _____
   _____

6. Based on the video, write down the reason for the results: Why is this happening?

   _____
   _____
   _____

7. Write down what Science Girl challenged you to do with your own experiment:

   _____
   _____
   _____

YOUR TURN!!!

Now it is time to do your own experimenting! Let's get started:

PRE-EXPERIMENT QUESTIONS:

8. What is the ONE thing you are going to change in your experiment? Be specific about your answer. (i.e. I am going to put ____ more/less of ____ than the experiment says.)

   _____
   _____

9. Predict how the change might affect the results of your experiment. Do you think something might go wrong compared Science Girl's experiment? Will the results be different?

_____
_____
_____

TIME TO SCIENCE:

Do the experiment by using the procedure written above but with your ONE change to the experiment. Make sure to get documentation!

POST-EXPERIMENT QUESTIONS:

10. Look back at question 9. Was your prediction correct? How was the result the same or different than what you thought would happen?

_____
_____
_____

11. Based on your answer in question 6, explain why your results were or were not different than Science Girl's experiment.

_____
_____

12. What do you want to try next?

_____
_____

SHARE YOUR RESULTS:

1. Write 3-4 sentences about what you (1) did in the experiment, (2) what you changed in your experiment, and (3) what happened to the results.
2. Share the results along with any (1) Photos, (2) Videos, and/or (3) Drawings to:
    a. Virtual New Mexico State Fair Website/Social Media
    b. Science Girl's Lab Website (www.sciencegirlslab.com/contact-1)
    c. Science Girl's Lab Facebook Page (https://www.facebook.com/sciencegirlslab)
    d. Teachers
    e. Classmates
    f. Family

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VOCABULARY:

Show off your vocabulary skills! Match the vocabulary word with its definition. (Hint: Science Girl used these words in her video. Go back and see if you can figure it out!)

___1. Force

___2. Newton's First Law of Motion

___3. Gravity

___4. Motion

___5. Acceleration

a. The action or process of moving (changing placement)
b. The act or process of moving faster.
c. It changes the motion of an object
d. The force that every object has to draw another object to itself.
e. An object at rest tends to stay at rest and an object in motion stays in motion until acted upon by an outside force

I hope you had a great time doing this experiment. I know I had a blast! Make sure to check out my YouTube Channel and other social media so that we can stay connected. Please send me messages and emails! I want to hear from you because you matter so much to this community. Remember to Go Be Awesome!

Website: www.sciencegirlslab.com
Facebook: https://www.facebook.com/sciencegirlslab (@sciencegirlslab)
Instagram: https://www.instagram.com/sciencegirlslab/ (@sciencegirlslab)
YouTube: https://www.youtube.com/channel/UCXeadkZB1tUxRT6cVbUw1iw (Science Girl's Lab)

Teacher's and Parent's Notes:

One of my goals is to support you as you try to create experiences for your students and/or children during virtual learning. We want to support you as an essential part of the New Mexican community. That is why the New Mexico State Fair Virtual Team and I decided to add more educational aspects to this experiment.

MAIN CONCEPT LEARNED: Newton's First Law of Motion, Forces in Nature.

Student Outcomes	CCSS Connection
Students will be able to ask and answer questions from the experiment using key details from their observations	RI.K.1., RI.1.1, RI.2.1, RI.3.1, RI.4.1
Students will be able to recall and write key details presented in the experiment and from their observations.	RI.K.2, RI.1.2, RI.2.2, RI.3.2, RI.4.2, RI.5.2
Students will be able to use visuals, pictures, and/or drawings to provide details of their observations and experiments.	SL.K.5
Students will describe and write about main ideas and details using diverse media (i.e. video)	SL.2.2, SL.1.2, SL.3.2, SL.4.2, SL.5.2
Students will be able to recall information from experiences to answer a question	W.K.8, W.1.8, W2.8
Students will be able to determine and answer vocabulary questions based on details from the video.	RI.K.4, RI.1.4, RI.2.4, RI.3.4, RI.4.4, RI.5.4