

Origami Frog Experiment

Project Make

Due: 4th period, Monday 2/1/21 midnight

3rd & 7th, Tuesday 2/2/21 midnight

Last week we made an origami frog. Find that frog, we're going to jump it today.

Some of you did not manage to make the frog, either because you were absent, or you couldn't figure out how to make it, or you just didn't do it. If you fall into this boat, you have a choice today: go back and make the frog from last week, or make a paper football to use for today's experiment. [Here is a link to making a paper football.](#)

If you made the frog last week, but you'd rather do today's experiment with a paper football, that's fine, too, go ahead and make a football.

The experiment:

1. Pick a place where you will try to cover some distance with your paper object. We want a distance that will require four or five hops or more (if you're using a frog) or four or five kicks (if you're using a paper football). The football distance might be much farther than a frog distance. For example, if you have a long kitchen table or counter, that might be perfect for the frog. On the other hand, if you are using a football, you might use a hallway in your home, or a long sidewalk outside (if it's not raining).
2. Keep a notebook handy. Start at one end, and see how many hops/kicks it takes to get from one end to the other end. Write this number down.
3. Repeat 4 more times so that you have 5 trials altogether. For example, maybe the frog made it to the end in three hops one time, 5 hops another, 6, another, and 4 the other two times.
4. Add up the five numbers (that is, how many hops it took to reach the goal each time), and divide by 5. This is the average number of hops/kicks for your initial round.
5. Think up a way to make a new and improved frog or football. Examples of ways to change the object might be to use a different size of paper, a different weight of paper (thicker or thinner, heavier or lighter), or to add a weight or other material to the frog or football to make it heavier or to make it jump or kick differently. **Either make a new and different frog or football or modify your frog or football in some way that you can clearly describe. You are making a change and then seeing through experience if that change makes a difference in the experiment.**
6. Run five trials with the new frog or football on the same course. Write your results down in your notebook. Again, add them up and divide by 5 to get a new result.
7. Did your change have an effect on your object's performance?

Write up your results in a Google Doc and turn it in. Include the following:

- A photo of your first frog or football.
- A description of your course, that is where you jumped or kicked your object.
- The results of round 1 (five values, then the average value)
- A description of the change that you made to your object (point 5 above)
- The results of round 2 (five values, then the average value)
- A brief discussion of the results. Did the change you make have the effect you expected? Do you have a theory as to why or why not? Please make an effort to explain your results.

Turn the Google Doc in on the Google Classroom.