



[gpb.org/camp](http://gpb.org/camp)

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Camp GPB: Egg Drop Challenge

**Guiding Question:** What design works best for protecting an egg if it is dropped?

**Learning Targets:** I can...

- define human needs and wants (define the problem).
- plan and carry out investigation(s) about design(s) that might work best for protecting an egg if it is dropped.
- analyze and interpret data from test results to refine the design, and then test the new design.
- use investigation data to construct an argument about the best design for protecting an egg.

**Engage:** Use your scientific lens to observe the properties of an egg. If you do not have a magnifying lens, then diligently observe with your naked eye. What do you notice?

Record observations about the properties of an egg:

<b>Properties (Characteristics) of an Egg</b>

These easily observed properties are called physical properties. Physical properties include:

- |                                  |                                   |                                     |                                      |
|----------------------------------|-----------------------------------|-------------------------------------|--------------------------------------|
| <input type="checkbox"/> Color   | <input type="checkbox"/> Mass     | <input type="checkbox"/> Length     | <input type="checkbox"/> Hardness    |
| <input type="checkbox"/> Texture | <input type="checkbox"/> Strength | <input type="checkbox"/> Absorbency | <input type="checkbox"/> Flexibility |

Did you observe for all these things? Place a  beside everything you recorded.

What about the things you did not observe? Try to add as many of these into your observation table as possible. Place a  beside any new observations you can record.

How might these properties of an egg create a need to innovate, or develop something new?

At [Camp GPB](#), what are Ashlyn’s reasons to innovate something new?



Would these be good reasons for you to innovate as well?

Good engineering designs, define a **design problem** that can be solved. Write a complete sentence that defines the design problem.

What might work? When you are **designing solutions**, develop and use models of your idea.

1. Begin with a model of the problem. Include labels for everything you understand about the problem. **Include scientific information:**

- Force of Gravity  
(Note: Gravity is a force that pulls objects toward Earth.)
- Balanced and Unbalanced Forces  
(Note: A long arrow means more force. A short arrow means less force.)
- Properties of Eggs

Model of the <b>Problem</b>	Model of the <b>Solution</b>
  	

2. Now develop and use a model to communicate your idea for a solution. If you need inspiration, use Ashlyn’s first idea that she shared in the Egg Drop Challenge episode of Camp GPB.

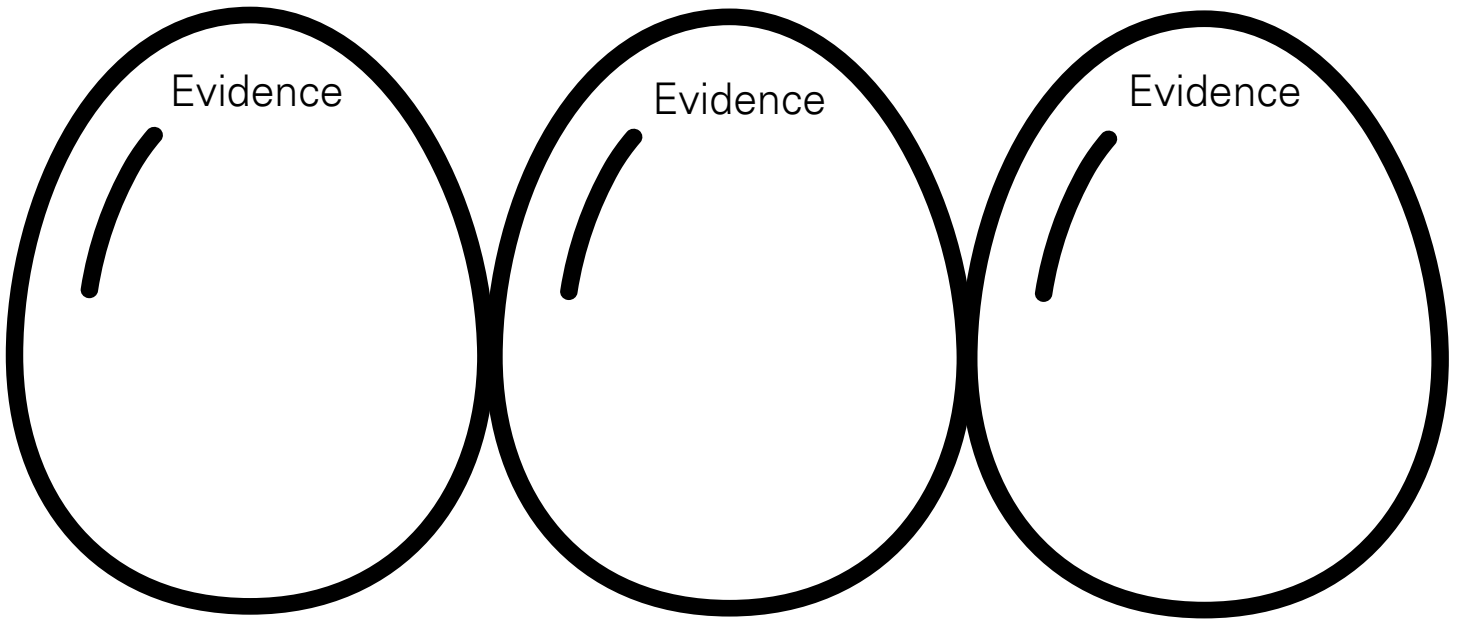
**Test** your idea. Did your design work to protect the egg? \_\_\_\_\_

What worked well?	What needs to be optimized or improved?

**Analyze and interpret data** from the outcomes to **refine the design**.

Model of the **Optimized Solution**:

Which design is best for protecting the egg? Construct an argument to support your decision. Use evidence from your own investigation and/or watching Ashlyn's investigation on [Camp GPB](#).



Evidence

Evidence

Evidence

CLAIM with FINAL MODEL of working design

