

Egg Drop Challenge Part 2: Test, Analyze & Present

Name: _____ Date: _____

LEARNING OBJECTIVE

Students will analyze experimental results and present a clear, evidence-based explanation of how their design applied all three of Newton's Laws.

MATERIALS NEEDED

- egg-drop container from Week 8
- notebook
- poster board or paper
- markers
- measuring tape
- stopwatch (optional)

HANDS-ON ACTIVITY

1. Re-test your design from Week 8 at its maximum successful height plus one additional increment, recording pass/fail and any design changes made.
2. If your design failed at any point, redesign one specific part (add or change one cushioning material) and re-test, recording what changed and the new result.
3. On a poster, create a 3-column chart labeled Newton's 1st Law, Newton's 2nd Law, and Newton's 3rd Law, writing under each a specific sentence explaining how your design applies that law.
4. Calculate the approximate speed of your container just before impact for your best successful drop height, using a free-fall relationship your teacher provides or an online calculator, and record the height and resulting estimated speed.
5. Present your final design and data chart to a family member, explaining in under 2 minutes how each of Newton's three laws influenced a specific design choice.

QUESTIONS

1. **What design change, if any, did you make between Week 8 and Week 9, and what was the result?**

2. **Explain how your design applies Newton's Third Law.**

3. What was your final maximum successful drop height, and what estimated impact speed did you calculate for it?

4. Across this whole quarter's experiments, which single demonstration best convinced you Newton's Laws are real, and why?
