



# THE GREAT OUTDOORS

## Lesson: Egg Drop

### CURRICULUM REFERENCE: Flight

#### LESSON OBJECTIVE

A test to see if you can keep an egg from cracking with the use of household materials.

**VIDEO:** <https://youtu.be/y9ckItBKmtU>

#### THE SCIENCE BEHIND

The egg drop is a competition to see what is stronger: the forces of gravity or the strength of the eggshell. To give the eggshell a chance, we need to minimize the kinetic energy created during the egg's fall and/or disperse that energy upon impact so it doesn't go directly into the egg. We can do that by slowing the egg during its decent with a parachute or cushioning its impact with soft items.

**VIDEO:** <https://youtu.be/sFGTgkV9M9E>



#### FOLLOW-UP QUESTIONS

1. How does your device use the principles of flight? How does it oppose flight?
2. What forces will affect the results of the egg drop?
3. Can we predict the landing zone? Why or why not?

#### LEARNING OUTCOMES

- Use technological problem-solving skills to design, build, and test a flying device.
- Identify the properties of air that make flight possible.
- Describe ways in which flying devices or living things use unbalanced forces to control their flight.



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### MATERIALS (PER PERSON)

- Eggs
- Cardboard tube
- Newspaper
- Tape
- Glue
- Straws
- Rubber bands
- Popsicle sticks
- Sandwich bags
- Balloons

### INSTRUCTIONS

1. Using the household items in the materials list, use your creative minds to make an apparatus that will keep an egg from cracking even after being thrown off a tall height.

TIP: Think about what will slow down the egg's falling speed and/or cushion the egg inside your apparatus. Watch the videos from NII Explore instructors for some ideas!

### VIDEOS:

Conner: <https://youtu.be/guECtB7r3jM>

Danielle: <https://youtu.be/QoeS0LdCgQM>

Luke: <https://youtu.be/HloNKfYUtRQ>

Virat: <https://youtu.be/zAO2gRDG-XA>

