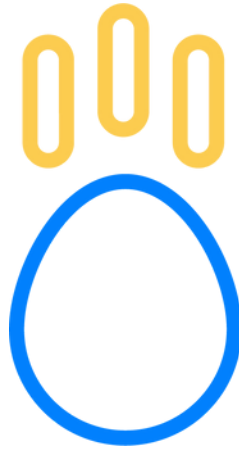


# The Egg Drop- Activity Guide



## Way #1 to protect Egg

Cushion it  
(impulse)

Describe what that means  
in your own words

~If you cushion the egg, the force gets spread out over time instead of all at once.

ie: a car crash is an example of high impulse, but if you had giant pillows surrounding each car the blow would be much less.

## Way #2 to protect Egg

Slow it down  
(Air Resistance)

Describe what that means  
in your own words

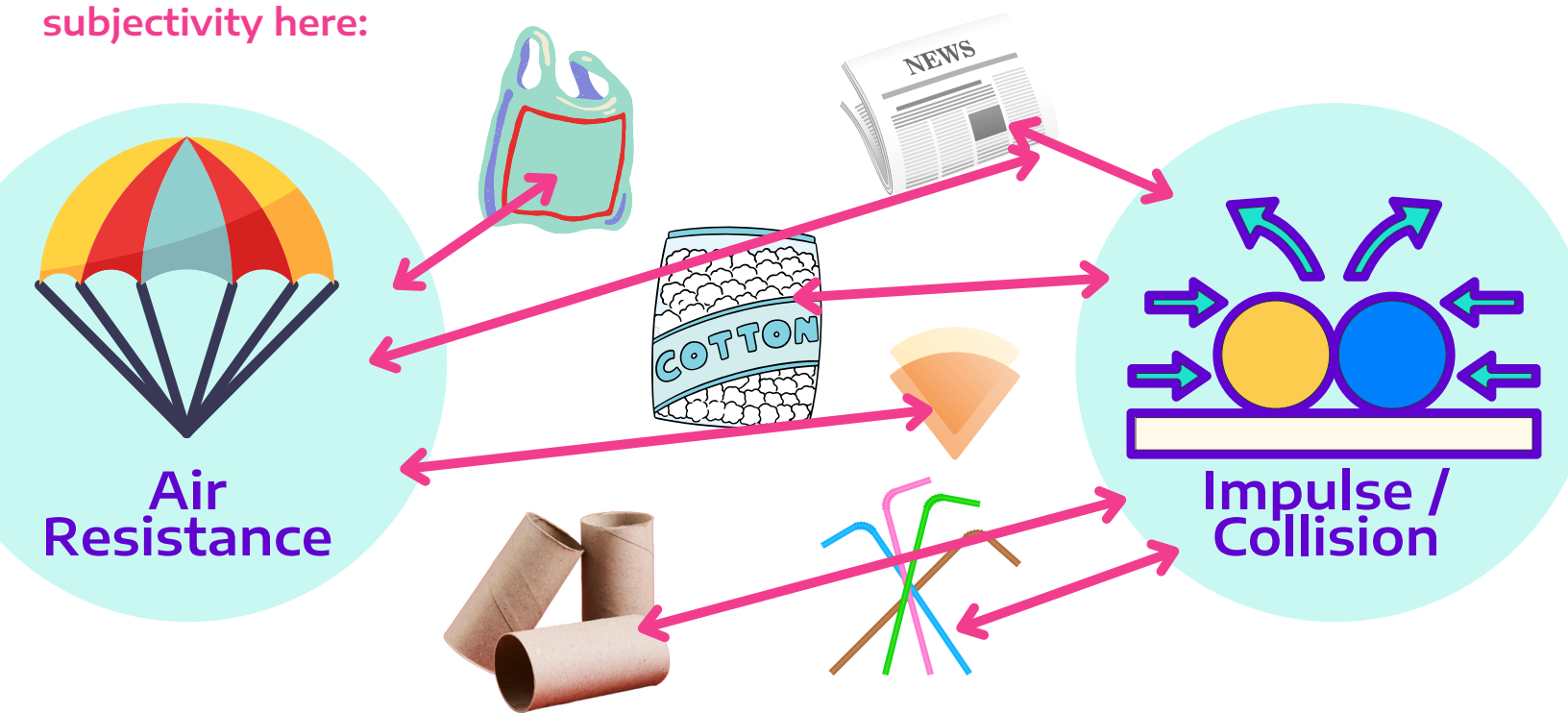
~The slower the egg is traveling by the time it hits the ground, the less force it will feel from the impact and the better chances it has of staying in tact.

# The Egg Drop- Activity Guide



Draw an arrow to the category you think these materials will help out with  
Hint: could be one or both!

There is some subjectivity here:



Use the space below to Draw / Brainstorm your Egg Drop Design!



# Quiz



## 1. Why did STIIX-Ville need a design like this in the first place?

~STIIX-Ville has had a horrible flood nearby. Unfortunately, vehicles can not travel in and out because the roads are inaccessible. They had the idea of dropping a package of food and water for the victims from a helicopter, but need to make sure it is protected so it does not break when it lands.

## 2. How/Why does NASA use some of these same concepts to protect their spaceships?

~Sometimes NASA spaceships land on planets very fast. They deploy parachutes and cushions upon landing so the rocket and expensive equipment inside is not damaged!

## 3. What is the main force acting on our egg once it is dropped?

Hint: It brings it down to the ground

Gravity

## 4. What type of energy does our egg have when it is dropped?

Potential Energy

## 5. What type of energy does our egg have by the time it hits the ground?

Kinetic Energy

## 6. Choose to describe Impulse OR Air Resistance in your own words:

~Air Resistance is doing your best to slow the egg down so it feels a smaller force when it collides with the ground.

~Impulse is when you do something like cushion the egg so the force gets spread out over time, and therefore smaller, upon impact.

## 7. What did David do for his job? (The engineer we met).

Bonus points if you remember the company he works for.  
Marquise is an Electrical Engineer for SpaceX