Zip Line Egg Challenge.

This is a fun challenge to see how far or fast you can make your eggs travel. You are going to help the Easter Bunny deliver eggs to different people by creating a zip line with a carrying basket.

If you would like an egg-stra challenge you can create a way of getting the basket back to the Easter Bunny after you have delivered the eggs!

1. Design and make your egg basket. You can use any materials for this but remember it needs to be able to travel along your zip line.
2. Find a piece of string or wire to make your zip line from. Put it in place. Please ask for permission before attaching the zip line and make sure people know it is there so they don't walk into it!
3. Test your egg will fit into your basket safely and attach it to the zip line before launching. You may want to use hard boiled or chocolate eggs for this challenge!
4. Launch your egg and see if it makes it to the desired place. You can make this even more egg-citing by making the basket travel faster (steeper line, different materials for the zip line or material used to attach it). You could try different weights in the basket to see if it will go faster!
5. Remember to take lots of egg-cellent pictures.
6. Egg-tra challenge can you return the basket (now empty) back to the Easter Bunny still using the zip line?

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The science behind it:

Gravity is what makes the basket with the egg travel down the line. You can test out if a heavier object travels faster or slower than a lighter object.

Where the connection touches the zip line though creates friction which slows an object down. Does more mass (weight) mean more friction?

The fastest lines will have less friction so think about how you can reduce this. Possibly adding a straw over the line??

Take it further:

Things you could try:

1. Testing rough string and smooth wire.
2. The mass of the egg and basket (heavy or light)
3. The tension of the zip line (tight or baggy)
4. The length of the zip line (long or short)
5. Aerodynamics of egg and basket
6. Position of the egg in the basket (direction or high up/low down)

Let me know of any other things you tried and I will add these to this list!