

Engineer Inside

Hints and Tips

Launch an Object Challenge

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Hi everyone, I'm Phil.

Now if you were going to launch an object, let's say a piece of paper. You wouldn't try and throw it like this, would you? It just doesn't go anywhere and doesn't work. There's too much air to move out of the way. We need to make the shape more aerodynamic before it will fly.

But can we use all of that air to our advantage? If I blow on this car, it will move, but not very far! So I need to store up more energy than I can hold in one lungful of breath.

We can store energy by blowing up a balloon. That contains more than one breath of air. Then with just the right trigger... Bang. We can let all of that energy go at once.

My tips to you then, are to go out and find some objects that you can launch. We're looking for things that are aerodynamic they don't put a lot of resistance up to the air. So we're looking for things that are pointy so they will move through the air nicely

You're looking for something with quite a bit of weight - if it's too light it will just get blown about by the wind. With paper aeroplanes you might notice that there is lot of weight at the front. The wings are at the back, the weight is at the front and that...is what makes them fly quite nicely.

Find an object that you think will fly well and then when it comes to launching it, my idea that I'm going to chase is using a big gust of air, so I need something that's going to give me a lot of air all at once. And for that, I've got a bike pump I'm going to use the end of the bike pump that I can put into a needle, and then I'm going to use something like a cork to try and store up the energy and release it one big burst.

Things for you to try out while you do this, have an experiment with it.. You could the shape of your object, you could change how heavy it is, and see if that can affect how well it launches. You could change the angle you launch it at. So let's say my piece of paper if I just threw it straight, like that. If I threw it straight up, like that. Or if I threw it in the middle.. Which one do you think would go the furthest?

Can you test it out? Can you measure how far they've gone? And measure the angle that you launched it at? We're looking for ways that we can measure the object and ways that we can measure how far it was launched.

My big hypothesis my big idea that I'm going to test is that if I take a lighter object it will take less momentum less energy to travel, so it will go further. If I launch it at an angle somewhere in the middle, so not 0 degrees, not 90 degrees but somewhere in the middle, let's say 45 degrees, that will go the furthest.

That's my idea. See what you've got around the house, have a good and then check out the Expert Creations video down below to see what we made.

Good luck!