

Balloon Powered LEGO Car

Steps/Supplies

1. Supplies—Balloons & LEGOs
2. Design and build your LEGO car
3. Show your child how you can build a hole to stick the balloon through.

Remember Engineers are constantly designing, building, redesigning, rebuilding.
*** You won't have the perfect car the first time.

We built our cars at night, the next morning we redesigned our cars again and again before adding the balloons!

4. Blow up the balloon and hold the end shut .
*** Place balloon in the hole of the car

5. Let the LEGO car/s go and see which car can travel the farthest!

*** Check out things to think about on the next page.
May help answer some questions you may have! ***



Things to Think About....

⇒ Does the weight of the LEGO bricks impact how far the car may travel?

⇒ What do you need to change if your car keeps flipping over?

⇒ What design works best for a LEGO car

- Low, flat, and long?

- Tall and short?

- What size hole if needed for the balloon to fit the best?

***Think of force from the balloon and moving the car forward

⇒ Blow up the balloon bigger. Does the car go faster? Farther?

⇒ Try racing the cars on a different surface (i.e. carpet vs. wood floor).

⇒ Place the balloon higher up or lower down on the LEGO car.

*** How does the placement of the balloon impact how the car moves?

How/Why does this work...

It's all about the physics of force and motion!

Newton's first law states that "every object will remain at rest or in uniform motion in a straight line unless compelled to change its state by the action of an external force." (<https://www.grc.nasa.gov/www/k-12/airplane/newton1g.html>)

Notice that the LEGO car by itself will not do anything. It's not until you release the air from the balloon and apply external force on the car that it starts to move.