

ZIP LINE CHALLENGE

6th Grade S.T.E.M. - Due September 30th, 2019

A zip line is an inclined cable or rope with a suspended harness, pulley, or handle, which a person slides down for amusement. Ziplines were used in mountainous countries as a way of transportation, and then replaced with bridges. During wars, zip lines were used to transport food, mail, and supplies to troops. When proper training, supervision, and maintenance is kept, zip lines are fairly safe. In 2012, there were 3600 reported injuries due to zip lining accidents.

Design a zip line using only these materials:

- 3 sheets of computer paper (8 ½ x 11).
- 4 bendable drinking straws.
- 1 roll of scotch tape

Your zip line must contain:

- 1) A way to move along the given wire (min. of 5 ft. and max. of 10 ft.)
- 2) A way to carry blocks of wood approx. 85 grams each

Each student must individually:

- Complete a sketch of their unique zip line.
- Complete a build of their unique zip line.
- Test a completed & working zip line in class.

To get the highest score, your zip line must hold the most or maximum amount of weight without breaking.

WORKSHEET

1) A person can ride on a zip line at a speed of _____ mph.

2) The longest zip line is located in _____ and is _____ ft long.

3) Define *speed*.

4) Define *acceleration*.

5) What factors affect the speed and acceleration of an object on a zip line?

6) What factor(s) needs to be changed in order for a rider on a zipline to move slower?
