



Educational Packet

Grades 4-6



The Comet

1. The Comet was built in 1947 and has 4,200 feet of wooden track. If we replace 400 feet of the track each year, how many years will it take us to replace the whole track?
2. The Comet is a wooden roller coaster that was built in 1947. Today, many roller coasters are built with steel. Name a reason why steel might be used instead of wood.
3. The Comet must be inspected every day. If the inspectors walk 2 feet of track every second, how many minutes will it take them to inspect the entire track?

Raging River

4. A Raging River boat can hold 6 riders at a time. If each rider weighed 150 pounds, how much weight would be on the boat?
5. If Raging River has 8 boats that each hold 6 people, and each boat goes through the ride times in an hour, what is the maximum number of people that can ride the ride each hour?
6. Why does the air tube (beneath the riders' seats) on the boats need to be inspected several times a day?



Sasquatch

7. What force helps slow the ride? What direction does it work?
8. Sasquatch is made of metals. Give at least one reason why wood would not have been a good choice for this ride.
9. The force that lifts the carriage up must be large enough to overcome what force?

Flying Trapeze

10. Electrical energy powers the ride. The electricity is converted to what other form(s) of energy during the ride?
11. If the ride goes 30 miles per hour, how many miles will you go in 5 minutes?
12. Is gravity still affecting the rider when their seat is in the air?

Answer Key

- 10.5 Years
 $4200 \text{ feet} / 400 \text{ feet} = 10.5$
- Steel is more durable and/or requires less maintenance (accept either answer), can be built to higher heights etc.
- 35 Minutes
 $4200 \text{ feet} / 2 \text{ feet per second} = 2100 \text{ seconds}$
 $2100 \text{ seconds} / 60 \text{ seconds} = 35 \text{ minutes}$
- 900 pounds
- 528
 $8 \text{ boats} \times (6 \text{ people per boat}) \times (11 \text{ rides per hour}) = 528 \text{ people/hour}$
- To check for leaks but also to check the air pressure (as temperature changes throughout the day, the air pressure will change inside the tubes), for safety etc.
- Friction; it works opposite the direction of motion. All moving objects that are in contact with a surface experience friction; including objects on wheels.
- Not as durable; could splinter; not as sturdy; can't stand up to weather conditions, especially in the North-East, etc.
- Gravity The downward motion of Sasquatch is solely based on the force of gravity.
- Thermal (anytime objects increase in temperature due to friction), potential (when the swings are raised to new elevation), kinetic (when the swings are put into motion)
- 2.5 Miles
 $30 \text{ miles} / 60 \text{ minutes} = .5 \text{ miles per minute}$
 $.5 \text{ miles} \times 5 \text{ minutes} = 2.5 \text{ miles in 5 minutes}$
- Yes, the force of gravity is always affecting objects with mass on earth