

FERMI QUESTIONS

Enrico Fermi was one of this country's greatest physicists. among his accomplishments were the 1938 Nobel Prize for nuclear and particle physics and the title "Father of the Atomic Age" for his role in building the first nuclear reactor. He had a rare talent as both a gifted theorist and experimentalist. One of his legacies is the "Fermi Question," an insightful question requiring both an understanding of physics principles and estimation skills.



Enrico Fermi
1901-1954

The Fermi Questions given below require information gathered for this workbook, estimation, and some clever thinking.

1. How many gallons of water flow in Rattlesnake Rapids to produce the waves for the riders? The ride is 1,625 feet long and lasts 5-6 minutes.
Hint: $1 \text{ ft}^3 = 7.5 \text{ gallons}$
2. How tall would the Rocket need to be for the riders to experience weightlessness for a full 10 sec?
3. What diameter would the carousel need to be to fit everyone attending Physics Day at Lagoon on the ride at one time?
4. How many meters of metal is the Colossus constructed with?