



SPLISH SPLASH

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WHY SHOULD YOU RIDE SPLISH SPLASH?

Complete with two turns, a steep drop, a loop, and a splash at the end, our rollercoaster will be the highlight of your afternoons!

Our target customers are anyone looking for a thrill.

This rollercoaster will be profitable because of its continuous turn, and most of all, the splash at the end.

Six Flags doesn't have many dry rollercoasters with a water ending.



WHAT DOES SPLISH SPLASH LOOK LIKE?



WHAT'S THE SCIENCE BEHIND THIS RIDE?

$(5.3)(9.8)(1.26) = \text{Max GPE} = 65.44$
 $\frac{(5.3)(2.31)^2}{2} = \text{KE} = 14.14$

Key:
■ Pool
■ Track
■ Support Tower

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Calculations
 Average Speed: 2.31 m/s
 Trial 1: $7m / 2.93 = 2.39 \text{ m/s}$
 Trial 2: $7m / 3.17 = 2.20 \text{ m/s}$
 Trial 3: $7m / 3.00 = 2.29 \text{ m/s}$
 Trial 4: $7m / 3.07 = 2.28 \text{ m/s}$
 Trial 5: $7m / 2.95 = 2.37 \text{ m/s}$

Energy Transformations:
 When the marble is released, the initial GPE is converted to KE as it rolls down the free fall. As the ball travels midway of the loop, KE changes into GPE. Then, after the marble reaches the top and passes through, GPE changes back into KE. Then, the marble goes down into a turn, which lessens the GPE, and increases the KE. Afterwards, the marble goes through another turn, which decreases the GPE, and increases the KE. Then the marble goes over a hill which increases the GPE and decreases the KE. Lastly, the marble falls into the pool, and the KE and GPE becomes 0.

During the ride, the energy that was "missing" was actually converted to sound and thermal energy.

Law of Conservation of Energy
 Our coaster models the law of conservation of energy because no energy is lost through the ride it is only converted, we know this because as the marble rolls changes result in sound and thermal energy which may not be only kinetic and potential.

WHAT WILL IT BE BUILT OUT OF / INCLUDE?

- Splish Splash will be made out of steel
- The real ride will obviously be much bigger
- The ride will include:
 - a drop at the beginning
 - one loop
 - two downhill curves
 - a small hill before dropping into the water at the end of the ride

