

THE DEFIER

A NEW AGE ROLLERCOASTER THAT DEFIES
GRAVITY

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THE DEFIER!!

This new rollercoaster has never before seen heights!

Our rollercoaster travels 7meters in a mere 2 seconds!

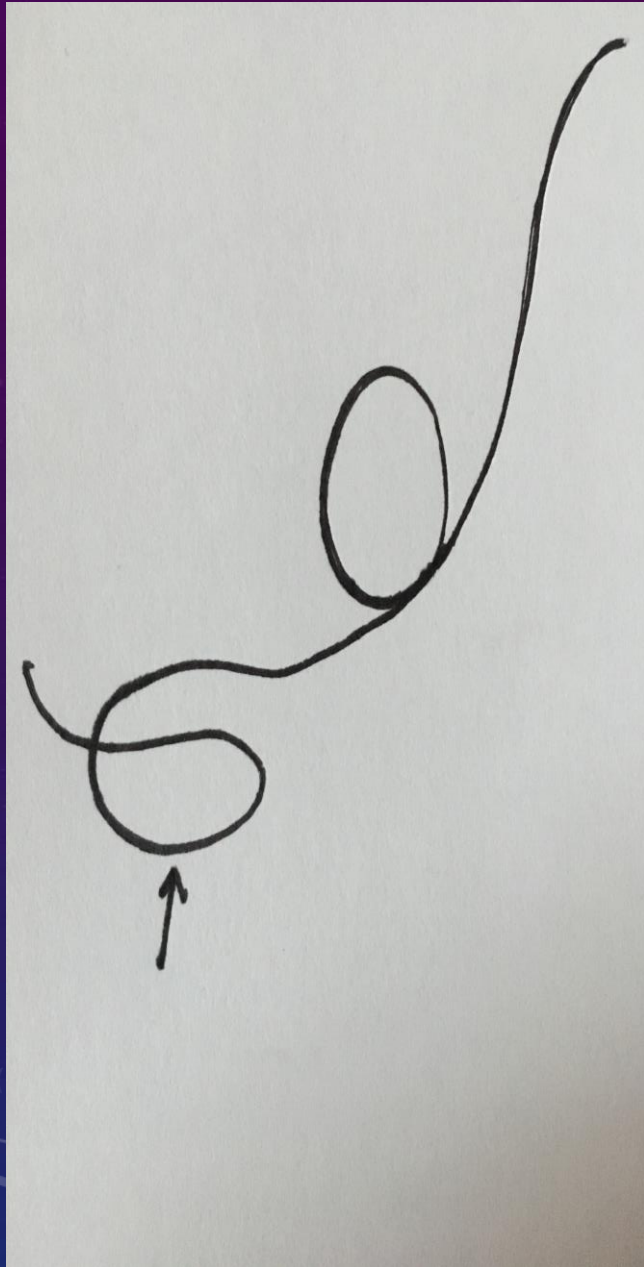
With dazzling heights and uncharted speeds, you will have so much fun that you will even forget that you are scared half to death!

Join the fun as you defy gravity on the newest rollercoaster...

The Defier!!!

THE DEFIER IN ACTION





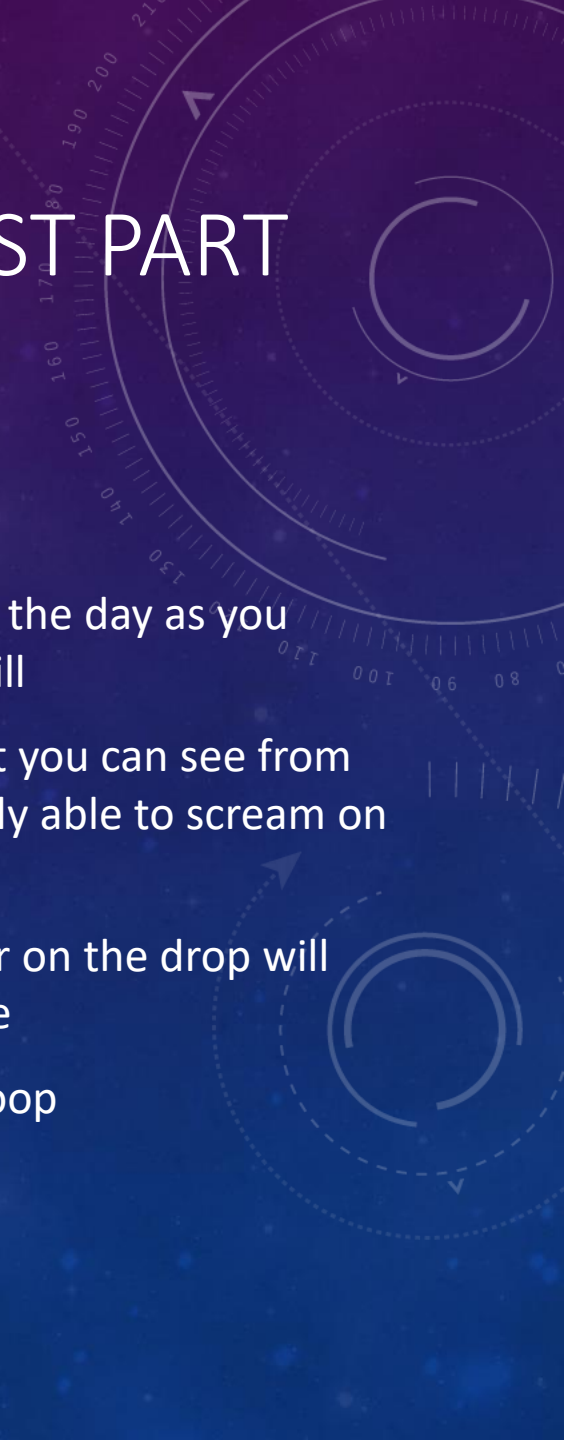
THE DEFIER

- The gyroball will allow you to travel almost perpendicular to the ground (visual in video)
- You will feel as if you are flying
- The track allows the gyroball to defy gravity!!



WHAT IS THE BEST PART OF THE RIDE?

- You'll forget about the rest of the day as you travel to the top of the first hill
- The almost straight drop, that you can see from the video, will leave you barely able to scream on the rest of the ride
- the butterflies you encounter on the drop will make you never want to leave
- The drop leads straight to a loop



HOW FAST DOES IT TRAVEL???

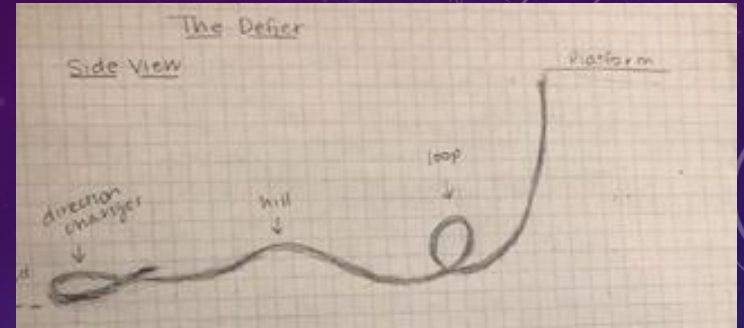
Trial #	S=d/t	S=
Trial 1	S=5.46 m/2.46 s	S=2.22m/s
Trial 2	S=5.46 m/2.72 s	S=2.01m/s
Trial 3	S=5.46 m/2.72 s	S=2.12m/s
Trial 4	S=5.46 m/2.49 s	S=2.19m/s



The average speed is:

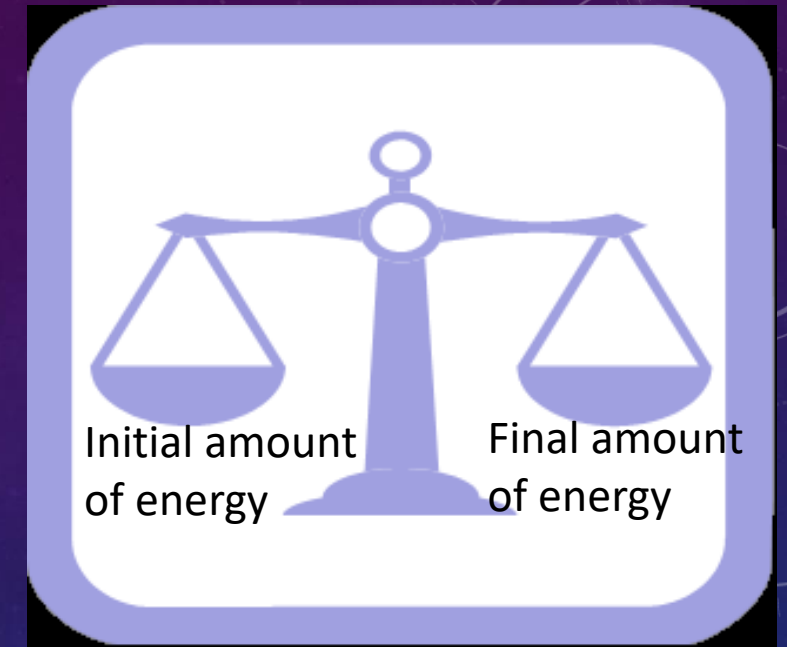
$$\begin{aligned} 2.22+2.01+2.12+2.19/4 &= \\ 8.54/4 &= \\ 2.14\text{m/s} & \end{aligned}$$

ENERGY TRANSFORMATIONS



- When the Gyro ball is at the beginning of the roller coaster, it is furthest away from the ground, so it has its maximum amount of GPE
- At the very beginning, there is an almost vertical drop, which is a rapid conversion of GPE into KE
- As it nears the ground, it continues to have lots of KE as it moves very quickly
- Afterwards, there is a loop, and since the Gyro ball is moving at one of its fastest speeds, it has enough acceleration to go nearly upside down in the loop, where it picks up more GPE at the top of the loop
- After, when the Gyro ball descends the loop, it accelerates, and this is a transformation to KE
- Once the marble leaves the loop, it still has a lot of KE, so it is able to roll up a hill
- At the top there is a conversion into GPE as it becomes further from the ground
- It is transformed into KE when descending the hill and continues to go faster
- When the Gyro ball reaches the loop turn, it accelerates as it changes directions, therefore showing KE

LAW OF CONSERVATION OF ENERGY



- The Law of Conservation of Energy states that energy cannot be lost or destroyed but turned into other forms of energy
- As you can tell from the last slide the energy of the Gyro ball was constantly changing from GPE and KE
- But the energy as always energy is always converted to another form of energy
- Some of the energy of the Gyro ball appeared to be missing, but it was transformed to the SE (sound energy) and TE (thermal energy) therefore showing the Law of Conservation of Energy

WHAT'S DIFFERENT ABOUT THE DEFIER??

- With The Defier, there is no set visual design
- This means that the Six Flags can design it to bring in the maximum amount of business
- It can be any thing that you feel will help business



WHY SHOULD SIX FLAGS INSTALL THE DEFIER??

- Six flags should install The Defier because of the dazzling heights and unique concept that will be a main attraction
- The Defier will grab everyone's attention
- We believe that The Defier could be a great step in business for Six Flags





CONCLUSION

- Thank you for your time in letting us propose the benefits of our new rollercoaster, The Defier, and we hope you consider our offer
- Thank you from the team that created The Defier, Peter Cohn, Jason Franklin, Emma Riser, and Ella Wileman