

# THE PHYSICS OF A SLIDING RIDER

## POTENTIAL

$$E_p = mgh$$

The total energy a rider potentially has at the top of the slide.

This is converted to kinetic energy.

E  
N  
E  
R  
G  
Y

## KINETIC

$$E_k = 0.5mv^2$$

The total energy resulting from a rider's movement

Kinetic energy is lost through friction.



*For a sliding rider to stop, all energy must be removed*

## SLIDING

Occurs when one surface passes over another.

*Examples:*

- *tube on flume*
- *bathing suit on flume*

F  
R  
I  
C  
T  
I  
O  
N

## VISCOUS

Occurs when an object passes through a fluid.

*Examples:*

- *rider in flume stream*
- *rider entering catch pool*

More water means more friction = slower ride

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POTENTIAL

E  
N  
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R  
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Y

KINETIC

SLIDING

F  
R  
I  
C  
T  
I  
O  
N

VISCOUS

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# WATERSLIDES

Safety Concerns	Safety Concerns	Safety Concerns
Common Rules	Common Rules	Common Rules
Safety Concerns	Safety Concerns	Safety Concerns
Common Rules	Common Rules	Common Rules
Safety Concerns	Safety Concerns	
Common Rules	Common Rules	

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# WATERSLIDES



## LIFEGUARDING CONSIDERATIONS



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Acceleration through a curve -

Hydrostatic Braking -

Somersaulting -