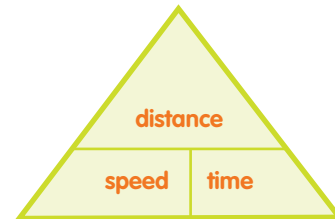


WHY USE TREE TOP ADVENTURE TO DEVELOP STUDENTS' KNOWLEDGE AND UNDERSTANDING OF PHYSICS?

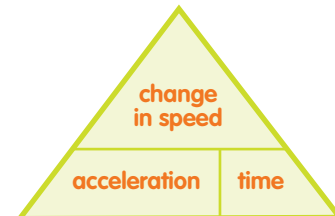
How better to appreciate air resistance than to feel it in affect as you jump into a Tarzan Swing? Imagine how much simpler it would be to understand friction as you feel your carabiner whizz down a zip wire? Use the Go Ape experience to answer the physics questions below.

GO BITESIZE

- Discuss how friction affects the movement of the person on the zipwire.
- Calculate the speed of a person using the zip wire by using the formula 'speed = distance ÷ time'.



- Work out acceleration using the formula 'acceleration = change in speed ÷ time' e.g. if a person accelerates down the zip wire from 0 m/s to 12 m/s in 10 seconds, their acceleration rate is $12\text{m/s} \div 10\text{s} = 1.2\text{m/s}^2$.



- Calculate the force required to move a person down a zip wire using the formula 'force = mass x acceleration'.
- What properties do the materials used on the course have, which make them ideal for their use?
- Calculate the tensile stress on the zip wire using the formula 'stress = force ÷ area'.
- What is the effect on the tensile stress on the cables when force is applied to them?

GO PROJECT

Your task is to create a scale model of a zip wire in the classroom using a wire and a weight. Experiment with different variables and assess their effects on the speed of the weight e.g. how will adding more weight affect speed, or how will a thinner or slacker wire affect the amount of force required to make it down the wire?