

<b>Speed Activity</b>	
<b>Overview</b>	
<p>Speed is critical to win in any race. Professional cyclists are renowned for their speed and ability to keep a fast pace over a long distance. This activity gets students to research the top speeds of cyclists and how much power they generate, then compare it to top speeds in different sports.</p> <p>Approximate duration: 1.5-2 hours</p> <p>Resources needed:</p> <ul style="list-style-type: none"> <li>iPads or computers with Internet access</li> </ul>	
<b>Instructions</b>	
<ol style="list-style-type: none"> <li>1. Research the top speeds of professional cyclists. A great recent example is pro cyclist Ellen van Dijk, who recently broke the <a href="#">UCI World Hour Record, riding 49.254km in one hour</a>. You can also research the winning times of previous UCI Time Trial races (e.g. <a href="https://www.flanders2021.com/en/races">https://www.flanders2021.com/en/races</a>). In addition, you can research the different speeds of cyclists over various terrains, e.g. a pro cyclist can speed down a hill at 100km, or can climb at 20km/hour.</li> <li>2. As you look at speeds, research the power (watts) emitted by the athletes. Here's some information about power from <a href="#">bicycling.com</a>: <i>"Power is the rate at which energy is used (energy over time) and is measured in watts. In cycling, energy is expressed in terms of work (such as how hard you have to work to ascend a climb). It's a constant snapshot of your work rate at any given moment. It's the building block from which all power-based training flows. One cool fact: A watt is a watt, whether on a bike or powering your home. So when a pro rider unleashes 2,000 watts in a sprint, he or she could essentially power two houses at normal consumption level. Another comparison: One horsepower is equal to 746 watts."</i></li> <li>3. Research the different things cyclists could power with their speed/power e.g. how many lightbulbs could they turn on during a race?</li> <li>4. To then give a holistic view on cycling compared to other sports, compare the speeds in cycling to top speeds in other sports, such as a motor sport race, swimming, the speed of a tennis ball, the speed of a golf ball etc. How do cyclists compare with these other sports?</li> </ol>	
<b>Tips/Suggested reading</b>	
<ul style="list-style-type: none"> <li><a href="#">This video is a great example of the different speeds between beginner, amateur and pro cyclists.</a></li> </ul>	
<b>Suggested syllabus connections</b>	
Maths Stage 2	<b>MA2-1WM</b> uses appropriate terminology to describe, and symbols to represent, mathematical ideas <b>MA2-9MG</b> measures, records, compares and estimates lengths, distances and perimeters in metres, centimetres and millimetres, and measures, compares and records temperatures <b>MA2-13MG</b> reads and records time in one-minute intervals and converts between hours, minutes and seconds
Maths Stage 3	<b>MA3-1WM</b> describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions <b>MA3-9MG</b> selects and uses the appropriate unit and device to measure lengths and distances, calculates perimeters, and converts between units of length <b>MA3-13MG</b> uses 24-hour time and am and pm notation in real-life situations, and constructs timelines

