



π IN THE SKY⁸

How fast do Ingenuity's blades spin? NASA solves this real problem to explore Mars and – with pi as your guide – so can you!

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EARTH

MARS



WHIRLING WONDER

Joining the Perseverance rover on Mars is a small helicopter named Ingenuity. With twin counter-rotating blades spanning 1.2 meters, Ingenuity is a test of new technology and is designed to achieve the first powered flight on another world.

Despite Mars having less gravity than Earth, the atmosphere on the Red Planet is much thinner than it is here on our home planet. This makes it challenging to lift off the ground on Mars. To generate enough lift for Ingenuity, engineers determined that the helicopter's blades need to rotate at approximately 250 radians per second on Mars.

How fast – in rotations per minute – do Ingenuity's blades spin?

How does that compare to a typical helicopter on Earth with blades that spin at 500 rotations per minute?

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