
Take Off

This problem gives you the chance to:

- work with speed, time, and distance
-

1. A space rocket needs to move at 11.2 kilometers per second to escape from the earth's gravitational pull. This is called escape velocity.

An Indy car races at up to 370 kilometers per hour.



How many times faster would an Indy car have to move to reach escape velocity?

Give your answer correct to the nearest whole number.

Show your work

2. Sound travels at about 340 meters per second.
Light travels at almost 300,000,000 meters per second.

If you **watched** a space rocket take off from a distance of 3.5 kilometers how much later would it be before you **heard** it take off?

Give your answer correct to the nearest second. _____ seconds



Explain how you figured it out and show your calculations.

8

Task 5: Take Off	Rubric	
The core elements of performance required by this task are: <ul style="list-style-type: none"> work with speed, time and distance Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives a correct answer: 109 (accept 112) Shows correct work such as: $11.2 \times 60 \times 60 =$ or $370 \div 60 \div 60 = 0.1027$ $40320 / 370$ $11.2 \div 0.1027 =$	1 1 1ft	3
2. Gives a correct answer: 10 seconds <i>Partial credit</i> Gives answer 10.29 Gives a correct explanation such as: You would see the take off straight away. 3.5 kilometres = 3500 metres $3500 / 340$	2 (1) 1 1 1	5
Total Points		8