

FUTURE DEFINING

Customer. Community. Environment.

AeroVironment continues to support local communities through its IMPACT! Corporate Social Responsibility Program

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Did you know that the Ingenuity Mars Helicopter has a terrestrial sibling? It's true — meet, Terry Earth Copter — specifically designed for research and educational purposes.

Recently, the AeroVironment Mars team embarked on an opportunity to connect with various YMCA summer camp groups in the Simi Valley, CA area as part of their STEAM program. In July 2021, Sara Langberg, aeromechanical engineer; Matt Keennon, MacCready Works Advanced Solutions project manager; and Jeremy Tyler, senior aeromechanical engineer, spoke with the Adventure Awaits summer program youngsters. The team conducted a total of eight demonstrations at four locations with campers in grades K-8.

The Mars team kept the talk simple and utilized toy gliders and balloon helicopters to describe Terry's technical concepts in an understandable way. They presented interesting facts about Ingenuity and demonstrated Terry's capabilities. Each presentation included an overview of Ingenuity and Terry, images from Mars, and – the pièce de résistance – a flying demonstration of Terry itself.

"Most of the kids went pretty wild with excitement and wonder at the demos," Keennon commented.

You may be familiar with STEM (science, technology, engineering, and mathematics) in



Matt Keennon explains how Terry works at the Simi Valley YMCA, July 2021

academics but have you heard of STEAM? The STEAM concept aims to incorporate the arts into STEM education. The YMCA has already begun incorporating STEAM curriculum into their existing structure.

STEAM opens the door to the arts and is meant to aid in the process of turning critical thinking into critical making. Studies have shown that students with a strong foundation in arts perform

Facts:

- Terry's blades spin at ~ 400 revolutions per minute, while Ingenuity has to spin 6 times faster on Mars.
- Ingenuity's flight count to date is 13.
- Ingenuity's first flight on Mars was April 19, 2021
- Ingenuity's time spent on Mars to date is over 7 months

PROCEED WITH CERTAINTY

better academically as a whole. Supporting the expansion of STEM to STEAM, one can imagine how capable, creative, and well-rounded future engineers and community leaders will be.

Hopefully, there will be future occasions to further share the scientific marvel of interstellar helicopter drones. As always, AeroVironment is proud to serve and connect with the future thinkers of our exceptional community.



Sara Langberg and Matt Keennon give YMCA summer campers a presentation about Ingenuity at the Simi Valley YMCA, July 2021.

TECHNICAL SPECS	INGENUITY	TERRY
MASS	1.8 kg	1.4 kg
WEIGHT	4 lb on Earth; 1.5 lb on Mars	3.1 lb on Earth; 1.1 lb on Mars
WIDTH	Total length of rotors: ~4 ft (~1.2 m) tip to tip	
POWER	Solar panel charges Lithium-ion battery, providing enough energy for up to 170 seconds of flight time	No Solar Chargeable Battery: 3 cell lithium battery pack
BLADE SPAN	Just under 4 ft (1.2 m)	
FLIGHT RANGE	Up to 2,050 ft (625 m)	Up to 65 ft (20 m)
FLIGHT ALTITUDE	Up to 33 ft (10 m)	Up to 23 ft (7 m)
FLIGHT ENVIRONMENT	Thin atmosphere, less than 1% as dense as Earth's	Earth: up to 5,000 ft in standard configuration Earth: up to 10,000 ft w/modified configuration <i>Able to operate in a Mars-like environment w/modifications.</i>