

Parent/Guardians Information Sheet

Dear Parents/Guardians,

Thank you for supporting our workshop! We are so glad your child actively participated and enjoyed the activities. This information sheet provides a summary of the workshop and instructions for further exploration. If you would like, you can continue STEM learning at home with your child.

In **Workshop 5**, we explored the physics behind rocket flight and use real engineering principles to refine your designs. Our young engineers designed and built their own paper rockets, which were launched using air pressure rocket launchers. We competed for the highest altitude and/or longest flight time and learned how to calculate the rocket's maximum height using simple Pythagorean math. Perfect for aspiring engineers and curious minds, this session offers a practical, high-flying introduction to the science of flight.

We encourage you to support your child if they'd like to explore further and experiment with different designs or other space exploration projects at home. Thank you for being part of this exciting journey! If you have any questions/suggestions/feedback, please feel free to contact us through email/WhatsApp/Instagram or **give comment on our website blogs**.

Kind regards,

Zhuoqun Zhang & Try Five+ Team

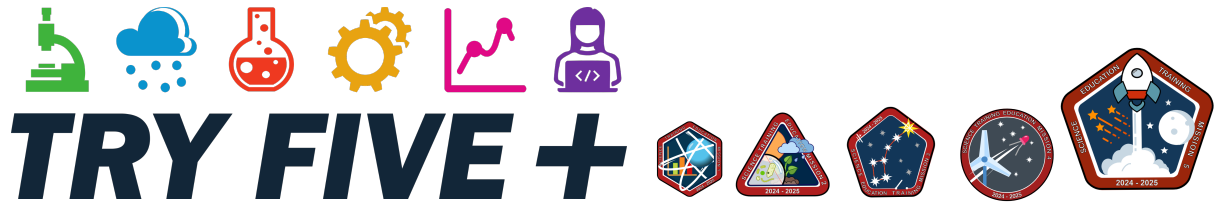
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ROCKET SCIENCE

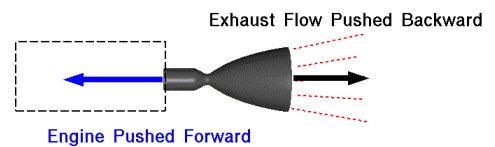
1. Third Law of Motion

“For every action (force) in nature there is an equal and opposite reaction.”

A force is an influence that can cause an object to change its velocity unless counterbalanced by other forces. Forces can make things move, stop, or change direction.

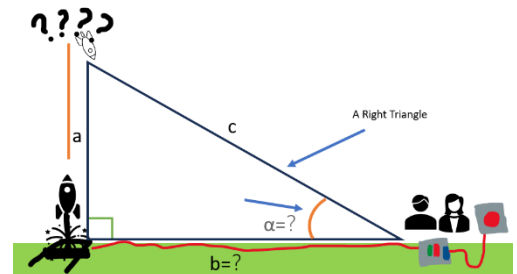


Rocket Engine Thrust



2. Cool Math to Measure the Height

If we know $\angle \alpha$ and the distance **b**, we are able to draw a right triangle. Then we can measure the height **a**!



3. DIY ideas and explore at home

1) Explore the Function of Fins

Try changing the shape, material or number of fins. Observe how this changes the rocket's flight path, distance, or height.

2) Try Different Launch Methods

Please supervise closely and be safe, especially for outdoor launches.

a. Alka-Seltzer Rocket (*Outdoor only*)

- Add water and part of a tablet to the can.
- Quickly snap the lid on and place it upside down on the ground.
- Step back — it will launch in a few seconds!

b. Balloon Rocket

- Tape a balloon to the rocket.
- Blow up the balloon (don't tie it).
- Release the balloon and watch the rocket zoom forward!

c. Stomp Rocket

- Connect a plastic bottle to a tube.
- Place the rocket over the tube.
- Stomp on the bottle to launch!

