LESSON 12:

TAKE HOME ROCKETS

SUPPLIES

PENCIL BOX

- Pencils - 15
- Scissors
- Clear Tape
- Markers
- Glue Sticks

HANDOUTS FOLDER

- Rocket Parts Template - 8
- Construction Paper

MAIN BIN

- Cardboard Tubes - 15

OBJECTIVES

- ☑ Talk about basic rocket design
- ☑ Wind down the class with what we learned today

HOOK

3-5 min

- Today, you are a rocket scientist! NASA has selected you to help engineer their newest space technology. Before we blast off, we need to figure out what components help get our rocket off the group and into outer space!

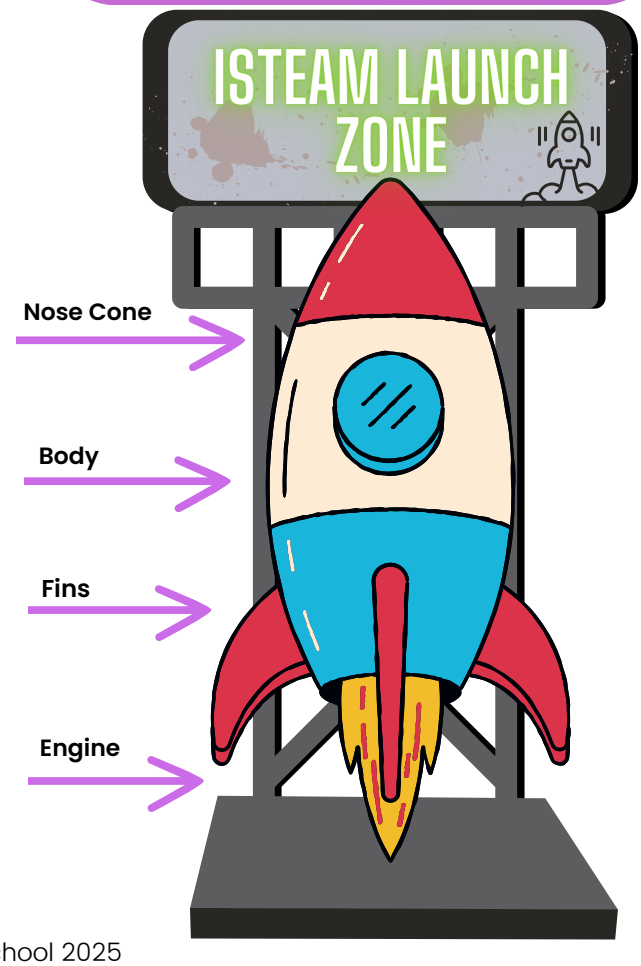
INTRODUCTION

3-5 min

Previous lessons have taught us how to launch a rocket ship into space. Now, lets make our own model rocket ships and discuss the different components that go into the design.

To begin, rocket ships are made with a few important components. These parts include, but are not limited to, the body, fins, nose cone, and engine.

- The nose cone is the pointed front end of the rocket that helps reduce air resistance and streamline its movement through the air.
- The body of the rocket is like its skeleton, providing structure and housing all the components needed for flight.
- Fins are attached to the body to help stabilize the rocket's flight path.
- Finally, the engine is the powerhouse of the rocket, providing the thrust needed to propel it into the sky.



TAKE HOME ROCKETS

PROJECT SUPPLIES

1. Pair students up or put them into groups of 3. Pass out the rocket template sheets. (1 template has 2 rockets)

2. Pass out supplies for each group to share when creating their rockets
   - Construction paper
   - Scissors
   - Glue sticks
   - Markers
   - Pencils
   - Cardboard tubes

3. Instruct students to trace trace template pieces onto the color construction paper they want.
   - Cut out the traced materials.

4. Now have them place a cardboard tube on the color paper they want their body of the rocket to be.
   - Students will now draw lines edge to edge to of the cardboard tube to the ends of the paper.
   - Cut out the strip of color paper.

5. To make the nose of the ship, roll the opened edges of the cut out together so that the middle of the cut circle forms a point at its end.

6. For the body, glue or tape the strip of color paper from before, onto the cardboard roll.

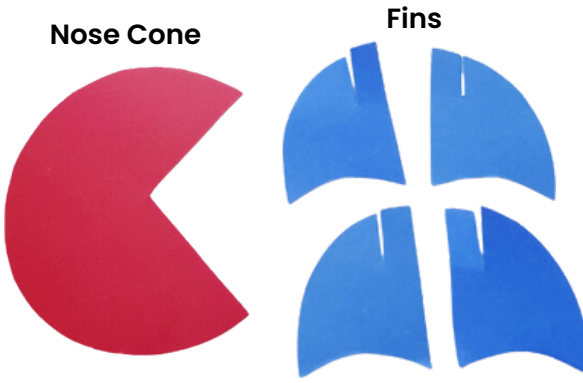
7. Cut 4 evenly spaced vertical slits at the bottom of the carboard tube.

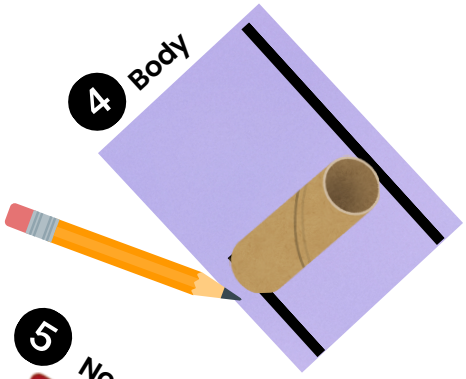
8. Cut a vertical slit in each fin template you cut out to match the cardboard tube cuts.

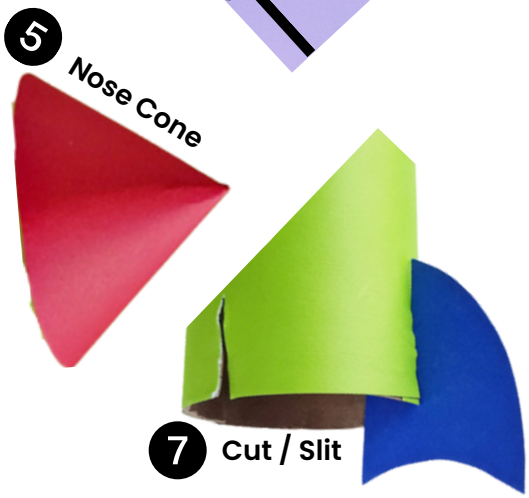
9. Slide the fins on and use tape or glue for durability.

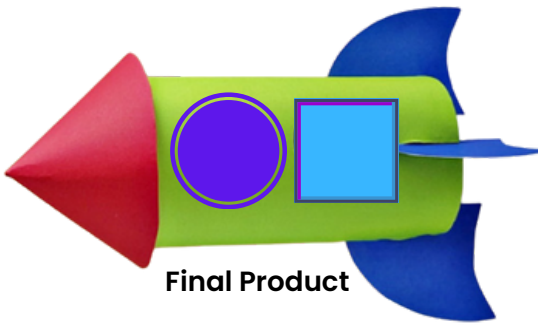
10. Lastly, attach the nose cone to the top of the tube and glue or tape it to help keep it in place.

11. Allow students to decorate beyond this with words, shapes, or doodles!









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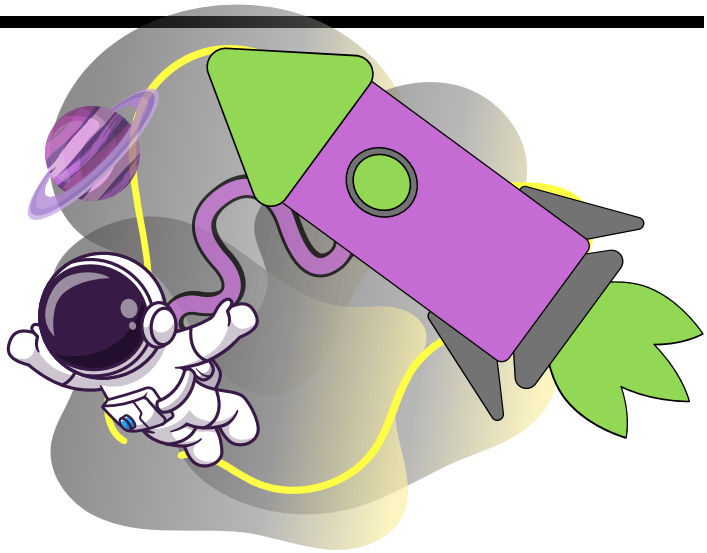
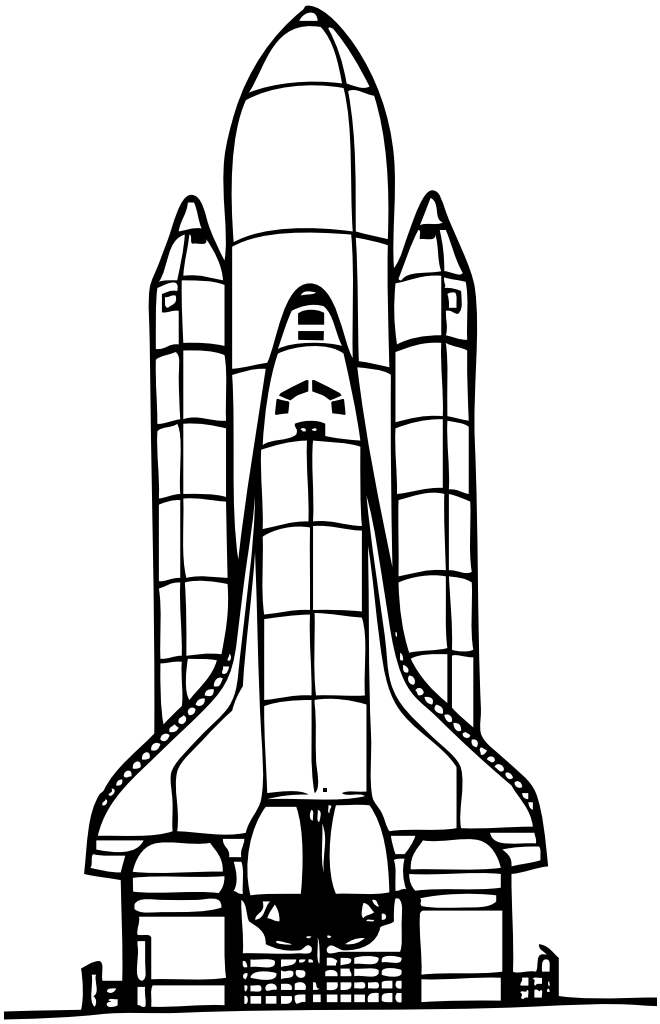


EXPLANATION

There is a ton of scientific planning and testing involved in rocket creation, from designing the intricate components to conducting rigorous tests to ensure safety and efficiency.

The process of rocket creation is a complex and fascinating journey. Engineers and scientists work tirelessly to push the boundaries of what is possible, constantly seeking innovation and improvement.

We have touched on the simplest parts of the rocket creation process, but every aspect is important.



LETS REVIEW THE PARTS

Nose Cone: is the pointed front end of the rocket that helps reduce air resistance and streamline its movement through the air.

Body: holds the other rocket components that require important balancing acts.
Examples:
shock cord, recovery system, parachute string, wadding, centering rings, the engine block, motor mount tube, and the engine hook or an alternative engine retainer.
The important take away is that there is always a balancing act going on when creating a rocket, even just the weight of everything must be accounted for.

Fins: are attached to the body to help stabilize the rocket's flight path.

Engine: is the powerhouse of the rocket, providing the thrust needed to propel it into the sky.

Fuel Pod: carries the rocket fuel required to launch the rocket into space. The initial lift off is particularly important for the structuring of the rocket as too little or too much weight could impact the entire launch sequence.

TAKE HOME ROCKETS

ROCKET PARTS TEMPLATE