

HELLO! WELCOME TO
THE HOMESCHOOL SCIENTIST



Foil Boat STEM Challenge Cards

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WELCOME! HOW TO USE THIS RESOURCE

Print the card pages and cut out the cards along the dotted lines.

Gather foil (we use dollar store foil), straws, and any other building materials you choose to give students. You might need to gather other common materials, depending on the challenge card.

You can add extra fun to these challenges by:

- Giving your child/student a blindfold to wear while completing the challenge.
- Challenging your child/student to only build with one hand.
- Adding a timer on the challenge, in other words, they have to complete the challenge in a specified period of time, i.e. one minute, two minutes, etc.
- If you are doing these challenges in pairs or as a team, they have to switch builders every 30 seconds.
- Can only build the boat using tweezers (or tongs)
- Poke a hole in the sheet of foil they are given.

BONUS

Challenges



Enjoy!

Foil Boat STEM Challenge

Cargo Boat

How much weight can your foil + straw boat hold before sinking? Test with coins, marbles, or small objects.

THSS

Foil Boat STEM Challenge

Rescue Mission

Design a boat that can carry a "passenger" (like a LEGO figure or paperclip person) safely across the water without tipping. (Your child can also make a human figure or animal figure out of foil.)

THSS

Foil Boat STEM Challenge

Waterproof the Deck

Modify your boat so the passenger area stays dry even when splashed. Bonus points for creativity! (You might need to provide additional materials depending on the waterproof method!)

THSS

Foil Boat STEM Challenge

Navigate the Rapids

Design a foil + straw boat that can travel down a gutter, water hose stream, or DIY "river." Can it stay upright and reach the end? You may need to construct a "river" in the backyard using the hose and other materials.

THSS

Foil Boat STEM Challenge

No Walls

Build a flat boat (no walls or edges allowed).

THSS

Foil Boat STEM Challenge

Wave Test

Your boat must **survive a wave test** (cup of water splash).

THSS

Foil Boat STEM Challenge

Timed Boat Build

Build a boat in 60 seconds or less.

THSS

Foil Boat STEM Challenge

Animal Design

Make a boat that looks like an animal that lives in the ocean, lake, pond, or stream.

THSS