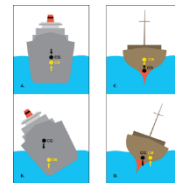


Rutgers: (For AR Videos) <https://marine.rutgers.edu/4hchallenge/>

Additional resources and ways to expand this year's STEM Challenge:



1. Float your Boat: Transporting Agriculture activity: <https://4-h.org/wp-content/uploads/2016/02/Float-Your-Boat.pdf>
2. For older youth Transportation and Ship Design and looking at the Center of Gravity of a ship and the Center of Buoyancy and how they affect stability: <https://manoa.hawaii.edu/exploringourfluidearth/physical/navigation-and-transportation/transportation-and-ship-design> (For those that might have done rocketry and learned about the Center of Pressure and Center of Gravity it is similar, but in this case you want the two points closer together.)
3. NYSD 4H2O - Dig into CO₂, nutrient runoff and your carbon footprint to expand on the theme. <https://ucanr.edu/sites/MarinLEAP/files/213751.pdf>
4. Grab objects and have youth experiment with things that sink and float - what do they know already of density and buoyancy?
5. Tie in Healthy Lifestyles with "Sink Your Drink" and look at sugary drinks and density.
6. Lots of resources around to bring in a special guest speaker.
7. Make a Cartesian Diver <https://coolscienceexperimentshq.com/bottle-diver-science-experiment/> using a few simple supplies and a water bottle. Just one model shown.



Add a clover with some clear tape.

Use a bendable straw – air tank

Add weight and test in a cup of water so it still floats (Neutral Buoyancy)

Fill bottle, add diver, cap and then squeeze sides

Water compresses air – increases density and it will sink

Steve Spangler Video - <https://fb.watch/f7u635twgu/>

- Teach buoyancy and about density (ideal gas law - https://en.wikipedia.org/wiki/Ideal_gas_law)
- Air bubble gives buoyancy - <https://www.youtube.com/watch?v=QukS1pxoezY>
- Could tie into plastics/polymers <https://www.4hpolymers.org/contact> or weather <https://www.extension.purdue.edu/extmedia/4h/4-h-441-w.pdf>

Notes:

"Ocean Literacy Concepts: <https://marine-ed.org/ocean-literacy/overview>

- For Ocean Communicator – Facilitators Guide pages 30-31 has links to resource to support discussion and research on the challenges.
- For Educators the tie into the Next Generation of Science Standards (NGSS) can be found on page 37 of the Facilitators guide
- Kits can be ordered from <https://shop4-h.org> or borrowed from your local office
- US Navy FLIP (Floating Instrument Platform) - <https://fb.watch/f8LOMiRQXi/>

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