



Float & Flow

BUOYANCY, WIND FORCE + ENGINEERING DESIGN

What Students Do

Students design, build, and test miniature sailboats using foam hulls, wooden masts, and paper sails. They establish a baseline, test with a consistent wind source, change one design variable, and use evidence to determine whether the redesign improves speed, straightness, stability, or reliability.

24

STUDENTS

90

MINUTES

3-6

GRADES

1

SHARED AI DEVICE



KNT Classroom Pack Includes

- Teacher Guide and facilitator resources
- Student Sailboat Design & Data Sheets
- Closed-cell foam hull bases and support pieces
- Wooden dowel masts and paper/cardstock sail blanks
- Optional keel/centerboard pieces for stability testing
- Printed KNT AI Prediction backup card for blocked/no-internet settings

Students Learn To

- Explain buoyancy, wind force, drag, and stability
- Identify the hull, sail, mast, and keel/centerboard
- Build and test a sailboat that floats and moves
- Conduct repeated fair tests using a consistent wind source
- Change one design variable and compare performance
- Use evidence to judge whether an AI prediction was supported

How It Works

1**BUILD**

Create a baseline sailboat with a foam hull, mast, and sail.

2**FLOAT**

Confirm the boat floats upright before performance testing.

3**TEST**

Complete two baseline trials using the same wind source and start point.

4**REDESIGN**

Change one variable, retest, and compare the evidence.

AI Can Predict. Designers Test. Evidence Decides.

AI is used as a facilitator-controlled source of a design recommendation or prediction. Students test the actual boat in water, compare baseline and redesign results, and let real-world evidence determine whether the prediction was supported.

Pairs with KNT curriculum, classroom kits, staff training, and expanded-learning implementation.

Kids N Technology

Hands-on AI + STEM learning for schools, afterschool, summer, and youth-serving programs.

Discuss Curriculum + Kits

kidsntechnology.net/contact