

Technology and the Diversity of Limits

Materials List

Chapter 3, Testing Your Way to a Solution

Engage Materials

none

Explore Materials

For each class of 30 students, 3 to 4 teams of 3 per protocol:

- a source of water
- 1–10 large tubs or sinks (see Advance Preparation)
- 10 2.5 × 10 × 20 cm wood blocks with a 0.75 mm hole drilled 2.5 cm from one 10 cm side
- 10 sticks of modeling clay
- 10 metric rulers (optional, depending on class decision about criterion)
- 10 stopwatches (optional, depending on class decision about criterion)
- 1 roll of masking tape
- pens or pencils of different colors
- mop and bucket or towels (optional)
- 10 pairs of scissors
- 12 sheets of 8½ × 11 in. white, unlined paper
- 4 craft sticks or new, sharpened pencils
- 7 rubber bands
- 8 paper clips
- 4 plastic beads
- 12 pushpins
- 4 copies of Master 3-4, *Propellers* (see Advance Preparation)
- 4 aluminum foil pie plates or baking pans
- strips of electrical tape (see Advance Preparation)
- 12 pairs of safety goggles
- 4 10 in. round balloons
- fizzing antacid tablets (see Advance Preparation)
- 4 flexible straws
- 4 250 mL squeeze bottles
- 12 copies of Master 3-1, *Protocol for the Sail Test*
- 12 copies of Master 3-2, *Protocol for the Propeller Test*
- 12 copies of Master 3-3, *Protocol for the Fuel Test*

Explain Materials

For each class of 30 students:

- 30 copies of Master 3-5, *Applications*
- 30 copies of Master 3-6, *Fair Test Checklist 1*
- 30 copies of Master 3-7, *Fair Test Checklist 2*
- 1 copy of the letter in Step 1

Elaborate Materials

For each class of 30 students, teams of 2:

- access to the *Rocketing to the Top* simulation on 15 computers
- 1 copy of the letter in Step 1

Evaluate Materials

For each class of 30 students:

- meter stick or other device for measuring length (see Advance Preparation)
- assortment of different-sized index cards, including 3 × 5 in., 4 × 6 in., and 5 × 8 in. cards
- several sheets of 1/8 in. thick craft foam (see Advance Preparation)
- 1 roll of transparent tape
- glue
- markers (optional)
- pens or pencils of different colors
- 15 pill bottles with snap caps (see Advance Preparation)
- 15 pairs of scissors
- antacid tablets, approximately 120 (see Advance Preparation)
- 15 bottles of water
- 15 100 mL graduated cylinders
- 15 copies of Master 3-8, *Fuel Design Report*