



## **Boston Tea Party STEM Challenges**

**The Dry Tea Challenge:** Challenge students to design a structure (using 12–16 popsicle sticks, wax paper, tape, yarn) that keeps a tea bag dry while submerged in water.

**Goal:** Keep the tea bag completely dry for 30 seconds.

**Scientific Principle:** Engineering design, buoyancy, water displacement, and waterproof materials.

**Tea Dissolution Rate Investigation:** Experiment with various types of tea (black, green, herbal) and liquids to see how fast they dissolve.

**Variables:** Compare warm water vs. cold water, and fresh water vs. saltwater (simulating Boston Harbor).

**Scientific Principle:** Rates of reaction, solubility, and how temperature affects solubility.

**Boat Cargo Capacity Challenge:** Design boats using aluminum foil and straws to hold the maximum amount of "tea" (metal nuts or weights) before sinking.

**Scientific Principle:** Buoyancy, buoyancy forces, and density.

**National Park Service Tea Bag Challenge:** Provides a structured lesson plan for the "dry tea" STEM challenge.

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