Alaskan Build an Underwater Glider Camp

Day One

- OVERVIEW
- HOW ARE GLIDERS USED?
- HOW DO GLIDERS WORK?
- MISSION: Build a working Model Glider to "fly" 50 feet underwater
- MODEL GLIDER COMPONENTS
    - Casings (Pros and Cons)
    - Buoyancy Engine
    - Ballast
    - Wings and Rudder
    - Sensors:
- BUOYANCY AND BALLISTING
    - Wings and Rudders Construction
    - Test Wings and Rudders on Model Glider
- BASIC ELECTRONICS

Day Two

- GLIDER ELECTRONICS – Robot Controller Programming
    - LED's
    - Transistors and Motors
    - Servo Motors
    - Switches
    - Piezo Element - Acoustics
    - Sensors
- SENSORS - LabQuest
    - Temperature
    - Pressure
    - Salinity
- BUOYANCY ENGINE DESIGN & CONTROL
    - Servo Driven, Linkage Actuated
    - Servo Driven, Screw Drive

Day Three

- ASSEMBLE BUOYANCY ENGINE
    - Attach Injector to Base Plate
    - Attach Movable Pitch Ballast to Injector
    - Attach Servo Motor to Pitch Ballast
- ROBOT CONTROLLER
    - Program Controller
    - Connect Electronic Components to Circuit Board
    - Attach Power Supply
- TEST BUOYANCY ENGINE
- BALLAST UNDERWATER GLIDER
- TEST FLY IN WATER

Day Four

- FINISH GLIDER ASSEMBLY, BALLASTING, AND TEST FLIGHTS
- EXPERIMENT WITH DIFFERENT WING AND RUDDER DESIGNS
- PREPARE TEMPERATURE, PRESSURE, AND SALINITY EXPERIMENTS

Day Five

- FINISH GLIDERS AS NECESSARY
- FLY UNDERWATER GLIDER MODELS