

## Lesson Properties

**Course:** Principles of Applied Engineering

**Unit:** Principles of Rocketry

**Teacher:** Rick Ortiz

**Start Date:**

February 5, 2018

**Completion Target:**

March 9, 2018

## STAGE 1 – Instructional Target

### Learning Objectives / Goals

- Ss will understand rocketry principles such as: Lift, Thrust, Weight, and Drag.
- Ss will research career opportunities in aerospace engineering.
- Ss will apply the iterative design process to design the most efficient solution to the design challenge.
- Ss will apply learned concepts to build and test a physical model rocket.

### Standards Addressed

§130.402.c.1.D, 3.D, 4.A, 4.C, 4.F, 4.G, 6.B, 8.A, 8.B

### Cross-Curricular Connections

§111.14.c.4.D, 5.A, 5.B, 5.C (Geometry; Angles)

## STAGE 2 – Assessment

### Performance Tasks

- Ss will complete relevant assessment activities in the WhiteBox Learning System:
  - Weight Quiz, Thrust Quiz, Recovery Quiz, Stability Quiz, and
  - Drag Lab
- Ss will utilize personal time management skills to complete a physical build of a model rocket.
- Ss will be assessed on flight accuracy, recovery, and overall aesthetics.

### Secondary Evidence

- T will conduct informal observation and document findings in Observation Checklist.
- T will conduct safety test of student rockets prior to launch.
- T will conduct actual launch test of rockets on selected launch day. (Track Field)

## STAGE 3 – Lesson Delivery

### Instructional Strategies

Direct Instruction, Modeling, Self-Paced Assignments, Virtual Learning Environment, Blended Learning

### Instructional Materials

WhiteBox Learning System, Student Workstations, Internet Connectivity, Gum Tape, Rocket Part Kits, Glue, General Shop Tools, Solid Fuel Rocket Engines, Igniters

### Differentiated Instruction Supports

- Provide accommodations/ modifications to Ss in accordance with IEP/ (SpEd.)
- Front-load instructional materials on virtual learning platform. (LEP)
- Provide online translation tools as needed. (LEP)
- Provide visual aids, graphic organizers, etc. as needed.