

5th-6th Grade Class Lesson "Balloon Rocket"

How to Model Scientific Practices for Science Fair Investigations

(suggested 5-6 days of instruction, based on 45 min class periods)



Advance Preparation Resources:

[TEKS 5 ELA Math Science](#) - The TEKS-ScienceFair connection

[Teacher Checklist SCHOOL](#) - Prep for campus fair for teachers/coordinator

[Teacher Checklist GARSEF](#) - Prep for regional fair for teachers/coordinator

[Experiment Timeline](#) - Example of timeline for student fair project work

[Understanding Testable Questions](#) - Slideshow explaining testable questions and how to form them

[ELEM Student Packet](#) - Edit, print, and hand out to students

Slide 1: Prepare Student Materials

1. Hand out printed copies of [ELEM Student Packet](#).
2. Use [ELEM Slides 5 Balloon Rocket](#) to model each part of an investigation process.
 - Instructions for the investigation modeled on the slides: [Balloon Rocket Investigation Model](#)

Slides 2 - 3: Observe Phenomena

Students observe rocket movement on two short videos.

Slide 4: Brainstorm the System

1. Students discuss observations and questions about the phenomena videos.
2. Students list the parts of the observed rocket systems in the videos..
3. Student groups develop a model of these systems.

Slide 5: Research

Students research the topic - balloon rockets. Your librarian can assist students and teachers with research.

Slides 6-7: What If...Testable Question

1. Discuss and record ways to change parts of the system.
2. Discuss the possible effects and how to measure them.
3. Class develops a testable question and hypothesis using the sentence stems as support.

Example Question: *How will the size of the balloon affect the distance it travels?*

Example Hypothesis: *If the balloon is larger, then, it will go farther because it has more air to come out and push the balloon forward, like the exhaust of a space rocket.*

Slide 8-9: Materials and Procedures

Class discusses and records materials and procedures needed for testing.

Slide 10: Data Collection

1. Class designs data chart.
2. Students run tests to collect and record their data.
3. Teacher records their data on a Class Data Chart.

Slides 11-12: Representing and Analyzing Data

1. The teacher models how to create a graph of the class data.
2. Students discuss observed patterns in the data and discuss conclusions.

Slides 13-15: Drawing Conclusions & References

1. Class completes the class Claim-Evidence-Reasoning, CER, graphic organizer.
2. Students write their own conclusion using the class graphic organizer as a guide. *Provide sentence stems as needed.*
3. Discuss the References section: *"Where did we learn information on our topic? Those resources are listed here."*