



LESSON: Inside the Firing Room

Title: Inside the Firing Room

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School/Org: Ft. Caroline Middle School

Lesson Overview:

Inside the Firing Room is intended to inspire and motivate middle school students to pursue careers in science, technology, engineering, and mathematics by providing a virtual tour of the Kennedy Space Center (KSC) Firing Room. The tour highlights members of the KSC Launch Team who work in the Firing Room; the Space Shuttle systems they work on; and how their experiences exemplify the use of science, math, and technology in real-world applications. Students also will find out what inspired the Launch Team members to work for NASA and how students can plan for similar careers.

In addition to reading text, students can engage with a virtual image of the Firing Room and view video clips of both astronauts and KSC personnel. Peruse the Educators' Resources to see specific lesson sequences if you want to take this lesson even further. <http://enterfiringroom.ksc.nasa.gov/educatorResources.htm>

Suggested Classroom Time: 120 minutes

Grade Levels: 6-10

KLASS Module: 3-Career Exploration

Topic/Console: Shuttle Crew Jobs

Materials Needed:

Activity	Documents	Other Materials
1	http://maps.google.com/ http://www.fws.gov/merrittisland/	Demonstration computer
2	http://enterfiringroom.ksc.nasa.gov ACT_Firing-Room.doc	Student computers with Internet connection and writing tools
3	http://enterfiringroom.ksc.nasa.gov/firingRoomTour.htm AS_Firing-Room.doc KEY_Firing-Room.doc	Student computers with Internet connection and writing tools

National Standards/Objectives:

Discipline	Standard	Objective
Science	F. Science as Personal and Social Perspectives	Students investigate science and technology regarding local, national, and global challenges.
Science	C. Life Science	Students study populations and ecosystems; interdependence of organisms.
Technology	Technology communications tools	Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
Math	Problem Solving	Students build new mathematical knowledge through problem solving.

Desired Results:

Students will be able to answer these essential questions

- Where is KSC?
- What happens in the Firing Room?
- What jobs are available in the Firing Room?
- What education is required to obtain the jobs in the Firing Room?

Students will know

- Higher education is required for the jobs At NASA.
- There are many different types of jobs at KSC.
- Where KSC is located in relationship to their school.

Students will be able to

- Describe the people and basic job roles of the Shuttle launch team.
- Relate what they have learned about the launch process.

Learning Plan/Activities:**1. Introducing the Lesson.**

Give an illustrative overview of KSC's location using [Google maps](#). Type "Kennedy Space Center" in the search box. Show the variety of views such as Map and Satellite. Zoom in and out using and moving the map. This exercise will help to prepare students for views found in KLASS. Also demonstrate or ask students to zoom out and find Orlando. Explain this is where Disney World and Universal Studios are located. As a review of compass points and directions, have them find their school and calculate how far and what direction they are from KSC.

Script: "What direction is Orlando from KSC? If you were going to drive from Orlando to KSC, in what direction would you be traveling? The Atlantic Ocean is in what direction from KSC?"

2. Discussing the Lesson.

Discuss the landscape based on the satellite and terrain views. Ask why the students think this location was chosen as a launch center. Visit the [Merritt Island National Wildlife Refuge](#) website. Scroll down past the Shuttle launch notices and ask/answer a few questions such as, "What is a national wildlife refuge?" and "How can rockets and wildlife survive together?"

Zero back in on Kennedy Space Center and find the cluster of buildings where the Firing Room is located. The Firing Room is in the LCC (Launch Control Center) next to the VAB (Vehicle Assembly Building).

3. Presenting and Exploring Information.

Now navigate to the *Enter the Firing Room* website <http://enterfiringroom.ksc.nasa.gov/> and explain the layout of the site and your goals for the day. Pass out *The Firing Room* activity (ACT_Firing-Room.doc) and ask the students to learn about engineers who are featured in the Firing Room by clicking on each number from the graphic. If there is time, you could ask the students to write a short bio on one of the people working in the Firing Room.

If students complete this on student computers, remind them to only focus on the 8 engineer stations from

the Firing Room Tour as some of the other menu items will be covered another day or do not apply. Within each team member area, they should visit the first three menu items: |Career| |Shuttle System| |Video|. Do NOT have students go through Launch Simulation. This is a different lesson experience, which will take place during the Shuttle team training module.

4. Evaluating the Lesson.

Review, customize, print, and distribute *The Firing Room* assessment (AS_Firing-Room.doc). This has over 60 questions. Most of the answers will come from the Learn More links found the 8 firing room consoles/featured engineers at <http://enterfiringroom.ksc.nasa.gov/firingRoomTour.htm>. Ask the students to work together to find the correct answers as teaming preparation. Explain that NASA launch team engineers share what they know and help their teammates in a similar way. Time the activity to give it a little more energy. Award prizes or extra points to those who showed exceptional diligence and teamwork.

You could have them practice with the online quiz as homework and give a similar but abbreviated quiz on the following day.

Assessment Evidence:

Performance Tasks

1. Completed activity and assessment sheets.
2. Online quiz <http://enterfiringroom.ksc.nasa.gov/firingRoomTour.htm>
3. Bio on one Firing Room employee.
4. A teacher-led discussion, which reveals the level of student understanding of the Cape area (geography, environmental, views).

Other Evidence

1. Class discussions of what students think is going to happen.
2. Student explanations of what direction KSC is from their school: north, south, northeast, etc.

Extensions and Going Further Resources:

- Entering the Firing Room has enhancement activities listed in each featured engineer area.
- Educator Resources contains the goals and the lesson sequences for the site.
<http://enterfiringroom.ksc.nasa.gov/educatorResources.htm>
- Be sure to check for student opportunities, additional educational resources and more at:
<http://www.nasa.gov/education>