



Space Exploration

Merit Badge Workbook

This workbook can help you but you still need to read the merit badge pamphlet (book). No one can add or subtract from the Boy Scout Requirements #33215. Merit Badge Workbooks and much more are below: [Online Resources](#).

Workbook developer: craig@craiglincoln.com. Requirements revised: 2005, Workbook updated: September 2008.

Scout's Name: _____ Unit: _____

Counselor's Name: _____ Counselor's Ph #: _____

1. Tell the purpose of space exploration and include the following:

a. Historical reasons _____

b. Immediate goals in terms of specific knowledge _____

c. Benefits related to Earth resources, _____

technology, and new products. _____

2. Design a collector's card, with a picture on the front and information on the back, about your favorite space pioneer.

Share your card and discuss four other space pioneers with your counselor.

1 _____

2 _____

3 _____

4 _____

3. Build, launch, and recover a model rocket. Make a second launch to accomplish a specific objective. (Rocket must be built to meet the safety code of the National Association of Rocketry. See the "Model Rocketry" chapter.) Identify and explain the following rocket parts. * If local laws prohibit launching model rockets, do the following activity: Make a model of a NASA rocket. Explain the functions of the parts. Give the history of the rocket.

a. Body tube _____

b. Engine mount _____

c. Fins _____

d. Igniter _____

e. Launch lug _____

f. Nose cone _____

g. Payload _____

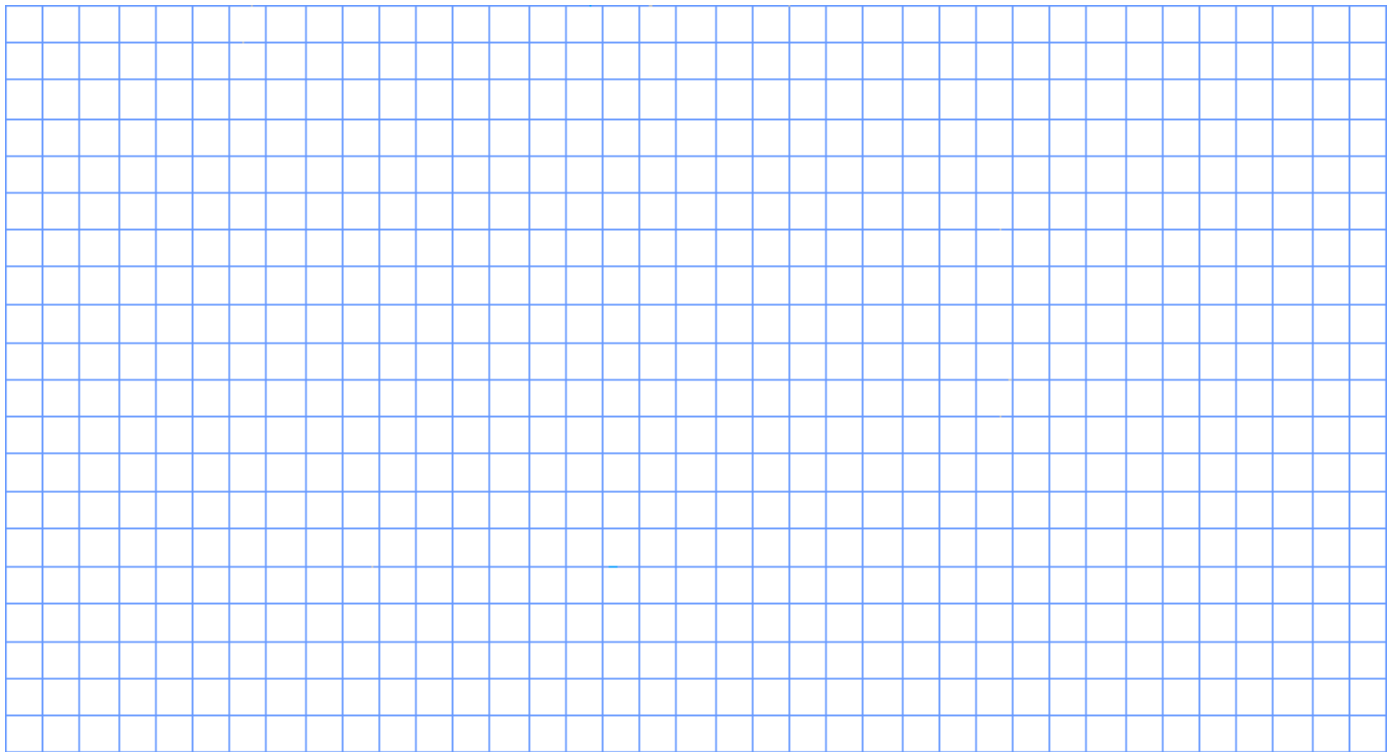
h. Recovery system _____

i. Rocket engine _____

4.

Discuss and demonstrate each of the following:

a. The law of action-reaction _____



In your design, consider and plan for the following:

a. Source of energy _____

b. How it will be constructed _____

c. Life-support system _____

d. Purpose and function _____

8. Discuss with your counselor two possible careers in space exploration that interest you.

Career 1 _____

Find out the qualifications, education, and preparation required _____

and discuss the major responsibilities of those positions. _____

Career 2 _____

Find out the qualifications, education, and preparation required _____

and discuss the major responsibilities of those positions. _____

Online Resources (Use any Internet resource with caution and only with your parent's or guardian's permission.)

Boy Scouts of America: ► scouting.org ► [Guide to Safe Scouting](#) ► [Age-Appropriate Guidelines](#) ► [Safe Swim Defense](#)
 ► [Scout](#) ► [Tenderfoot](#) ► [Second Class](#) ► [First Class](#) ► [Rank Videos](#) ► [Safety Afloat](#)

Boy Scout Merit Badge Workbooks: usscouts.org -or- meritbadge.org **Merit Badge Books:** www.scoutstuff.org

Requirement Resources

- 1: Space Exploration: http://en.wikipedia.org/wiki/Space_exploration
- 2: Historic figures in space exploration: http://meritbadge.org/wiki/index.php/Gallery_of_historic_figures_in_space_exploration
- 3: Model Rockets: http://en.wikipedia.org/wiki/Model_rocket
- 4a: NASA – How Things Work: <http://www-ksl.stanford.edu/htw/htw-overview.html>
- 4b: How Rocket Engines Work: http://en.wikipedia.org/wiki/Rocket_engine
- 4c: Satellites: <http://en.wikipedia.org/wiki/Satellite>
- 4d: Satellite Imagery: http://en.wikipedia.org/wiki/Satellite_imagery
- 5: Unmanned Space Missions: http://en.wikipedia.org/wiki/Wikipedia:WikiProject_Unmanned_space_missions
 Early & Current Manned Space Missions: http://en.wikipedia.org/wiki/Human_spaceflight
- 6a: Space Shuttle: http://en.wikipedia.org/wiki/Space_Shuttle
- 6b: International Space Station: http://en.wikipedia.org/wiki/International_Space_Station
- 7: Moon Base Station: http://en.wikipedia.org/wiki/Colonization_of_the_Moon
 Mars Base Station: http://en.wikipedia.org/wiki/Colonization_of_Mars
- 8: Space Careers: <http://www.space-careers.com/> http://www.faa.gov/education_research/education/careers/
 Jobs at NASA: <http://www.jsc.nasa.gov/people/jobs.html> <http://www.nasajobs.nasa.gov/>

General Resources:

Smithsonian National Air and Space Museum: <http://www.nasm.si.edu>

NASA: <http://www.nasa.gov>

European Space Agency: <http://www.esa.int>

Goddard Space Flight Center: <http://www.gsfc.nasa.gov>

Jet Propulsion Laboratory: <http://www.jpl.nasa.gov>

Space Center: <http://www.spacecenter.org>

Marshall Space Flight Center: <http://www.msfc.nasa.gov>

National Association of Rocketry: <http://www.nar.org>

Planetary Society: <http://www.planetary.org>

Am. Inst. of Aeronautics and Astronautics: <http://www.aiaa.org>

Galileo Scale Model: <http://www.jpl.nasa.gov/galileo/model.html>

Great Images in NASA: <http://grin.hq.nasa.gov>

Johnson Space Center: <http://www.jsc.nasa.gov>

Kennedy Space Center: <http://www.ksc.nasa.gov>

Junior Engineering Technical Society: <http://www.jets.org>

National Space Society: <http://www.nss.org>