



Moon, Mars, and ISS



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Lesson Forms and Materials List

Notes:

- 1) Forms listed in **Bold** are the handouts that you will have to copy and give to students. In order to cut down on the number of copies of the handouts, forms are divided into two types: (1) Per student; and (2) Per classroom. The forms that are **“per classroom”** are given to **each** student section and then **collected** for reuse with other sections. The forms that are designated as **“per student”** are for the students to keep. For example, if a teacher has 6 Sections and each Section has 30 students than for the handouts that are **“per student”** you will need to make 180 copies, and for the handouts that are **“per classroom”**, you will need to make 30 copies. (Obviously, you should always make a few spares.) All handouts will be posted on the website for student and teacher reference. Masters of all the handouts highlighted in yellow will be provided in a separate notebook.
- 2) “Rev A”, “Rev B” is the “Revision” of the handout. Most of the handouts are Rev B. As we use the materials, they will be updated and you will start seeing higher revisions (Rev C, Rev B, etc.).

Lesson 1:

Lesson 1 Forms and Materials (1-1-T, Rev B)

Introduction, Teacher Notes (1-2-T, Rev B)

Moon, Mars, and ISS, Student Handout (1-3-S, Rev B), per classroom

Explorer Projects, Student Handout (1-4-S, Rev B), per classroom

Destination and Specialization, Student Handout (1-5-S, Rev B), per student

Inner Planets, Teacher Notes (1-6-T, Rev B)

Inner Planets (Homework), Student Worksheet (1-7-S, Rev B), per student

Parent Authorization (1-8-S, Rev B), per student

Evaluation (1-9-T, Rev B)

Additional Materials: Laptop + projector, or equivalent, in order to show students the website.

Lesson 2:

Lesson 2, Forms and Materials (2-1-T, Rev B)

What's Out There? Our Solar System and Beyond (DVD), Teacher Notes (2-2-T, Rev B)

What's Out There? Our Solar System and Beyond (DVD), Student Worksheet (2-3-S, Rev B), per student

Lesson 2, Evaluation (2-4-T, Rev B)

Other Materials: What's Out There? Our Solar System and Beyond¹(DVD), DVD player

¹ What's Out There? Our Solar System and Beyond. ©1997 Rainbow Educational Media. Discovery Enterprises, LLC. <<http://www.unitedstreaming.com>>

Lesson 3:

Lesson 3, Forms and Materials (3-1-T, Rev B)

Motion of Planets and Moons, Kepler's laws, Eclipse (Demonstration), Teacher Notes (3-2-T, Rev B)

Outer Planets, Teacher Notes (3-3-T, Rev B)

Outer Planets, Student Worksheet (*Homework*) (3-4-S, Rev B), per student

Name That Inner Planet (Quiz), Teacher Notes (3-5-T, Rev B)

Name That Inner Planet (Quiz), Student Worksheet (3-6-S, Rev B), per student

Lesson 3, Evaluation (3-7-T, Rev B)

Other materials: Elastic band for demonstration.

Lesson 4:

Lesson 4, Forms and Materials (4-1-T, Rev B)

Exploring Space: The Universe (DVD), Teacher Notes (4-2-T, Rev B)

Exploring Space: The Universe (DVD), Student Worksheet (4-3-S, Rev B), per student

Lesson 4, Evaluation (4-4-T, Rev B)

Other Materials: Exploring Space: The Universe²(DVD), DVD player

Lesson 5:

Lesson 5, Forms and Materials (5-1-T, Rev B)

Craters (Lab), Teacher Notes (5-2-T, Rev B)

Craters (Lab), Student Worksheet (5-3-S, Rev B), per student

Name That Planet (Quiz), Teacher Notes (5-4-T, Rev B)

Name That Planet (Quiz), Student Worksheet (5-5-S Rev B), per student

Lesson 5, Evaluation (5-6-T, Rev B)

Other Materials: Pie pans, Metric ruler, Flour, Meter stick, Cocoa, Newspaper, Sifter/Shaker, Safety Glasses, Marbles.

Lesson 6:

Lesson 6, Forms and Materials (6-1-T, Rev B)

Spectra, Teacher Notes (6-2-T, Rev B)

Spectra, Student Worksheet (6-3-S, Rev B), per student

Name That Celestial Body! (Quiz), Teacher Notes (6-4-T, Rev B)

Name That Celestial Body! (Quiz), Student Worksheet (6-5-S, Rev B), per student

Lesson 6, Evaluation (6-6-T, Rev B)

Other Materials: Physics: A World in Motion: Atomic Spectra³ (DVD), DVD player

² Exploring Space: The Universe. ©1995 United Learning. Discovery Enterprises, LLC.

<<http://www.unitedstreaming.com>>

³ Physics: A world in Motion: Atomic Spectra. ©1998 United Learning. Discovery Enterprises, LLC.

<<http://www.unitedstreaming.com>>

Lesson 7:

Lesson 7, Forms and Materials (7-1-T, Rev B)

What are stars and planets made of? (Lab), Teacher Notes (7-2-T, Rev B)

What are stars and planets made of? (Lab), Student Worksheet (7-3-S, Rev B), per student

Lesson 7, Evaluation (7-4-T, Rev B)

Other materials: Spectrographs, power supply, tubes filled with gas, Spectrum Tubes, Electro-Technic Products, Inc. (Manufacturer Brochure). **Ask students to bring in colored pencils.** (See Teacher's Notes for details.)

Lesson 8:

Lesson 8, Forms and Materials (8-1-T, Rev B)

Space Exploration: Rockets (DVD), Teacher Notes (8-2-T, Rev B)

Space Exploration: Rockets (DVD), Student Worksheet (8-3-S, Rev B), per student

Lesson 8, Evaluation (8-4-T, Rev B)

Other materials: Space Exploration: The Rockets⁴ (DVD), DVD Player

Lesson 9:

Lesson 9, Forms and Materials (9-1-T, Rev B)

Project Requirements, Student Handout (9-2-S, Rev B), per student

Final Projects/Presentations, Student Handout (9-3-S, Rev B), per student

Lunar Problem, Teacher Notes (9-4-T, Rev B)

Lunar Problem, Student Worksheet (9-5-S, Rev B), per student

Lesson 9, Evaluation (9-6-T, Rev B)

Lesson 10:

Lesson 10, Forms and Materials (10-1-T, Rev B)

Comets (Demonstration), Teacher Notes (10-2-T, Rev B)

Comets (Demonstration), Student Worksheet (10-3-S, Rev B) per student

Lesson 10, Evaluation (10-4-T, Rev B)

Other materials: Dirt, ammonia, alcohol, corn syrup, large plastic bowls, plastic spoons, pie trays, and wooden spoons will be provided. ***Dry ice, hair dryer, water, garbage bags, hammer, insulating gloves, and paper towels are the teacher's responsibility.*** (See teacher notes)

Lesson 11:

Lesson 11, Forms and Materials (11-1-T, Rev B)

Science on the Edge of our Solar System: Discovery Missions (DVD), Teacher Notes

(11-2-T, Rev B)

Science on the Edge of our Solar System: Discovery Missions (DVD), Student Worksheet (11-3-S, Rev B), per student

Lesson 11, Evaluation (11-4-T, Rev B)

Other Materials: Unlocking the Mysteries: Science on the Edge of our Solar System⁵ (DVD): ***(Highlights of NASA's 10 exciting Discovery Program Missions)***

⁴ Space Exploration: The Rockets. ©1994 United Learning. Discovery Enterprises, LLC.
<<http://www.unitedstreaming.com>>

Additional DVDs, Videos, Forms, and Materials:

This is a list of additional Videos, DVDs and Handouts that can be used to supplement or substitute the original material:

DVDs:

1. **DVD Satellite Technology⁶**, this has a student worksheet and teacher notes.
Satellite Technology (DVD), Teacher Notes (12-2-T, Rev B)
Satellite Technology (DVD), Student Worksheet (12-3-S, Rev B) per student

Videos

1. **ISS-Meet me at the Station, Station Reel Time Crew Return Vehicle/Power Systems⁷**, this is 2 parts of the ISS collection, and has a student worksheet and teacher notes to go along with it.
ISS Video, Teacher Notes (12-4-T, Rev B)
ISS Video, Student Worksheet (12-5-S, Rev B) per student
2. **Destination Mars, Part 1⁸**. This video is good for the Destination section of Mars, it has no worksheets or teacher notes, (23 minutes).
3. **Destination Mars, Part 2⁹**. This video is good for the Destination section of Mars, it has no worksheets or teacher notes, (22 minutes).
4. **Fly me to the Moon¹⁰**. This video is good for the Destination section of the Moon, it has no worksheets or teacher notes, (5:40 minutes).
5. **Events of the 20th Century¹¹**. This video is good for the Destination section of the Moon, it has no worksheets or teacher notes, (14:40 minutes).

All DVDs or Videos have an evaluation form:

DVD/Video, Evaluation (12-6-T, Rev B)

Additional Handouts: This is a good progress report for the groups to make sure they stay on track and all members are doing their share:

1. **Group Progress Report, Group Worksheet (12-7-S), per group**

⁵ <http://discovery.nasa.gov/education.html>: Unlocking the Mysteries: Science on the Edge of our Solar System, NASA.

⁶ Satellite Technology, 2001 Discovery Channel School

⁷ ISS Collection, NASA ERC

⁸ Destination Mars, Part 1, 1997 Discovery Channel School

⁹ Destination Mars, Part 2, 1997 Discovery Channel School

¹⁰ Fly me to the Moon, 1997 Discovery Channel School

¹¹ Events of the 20th Century, 1997 Discovery Channel School