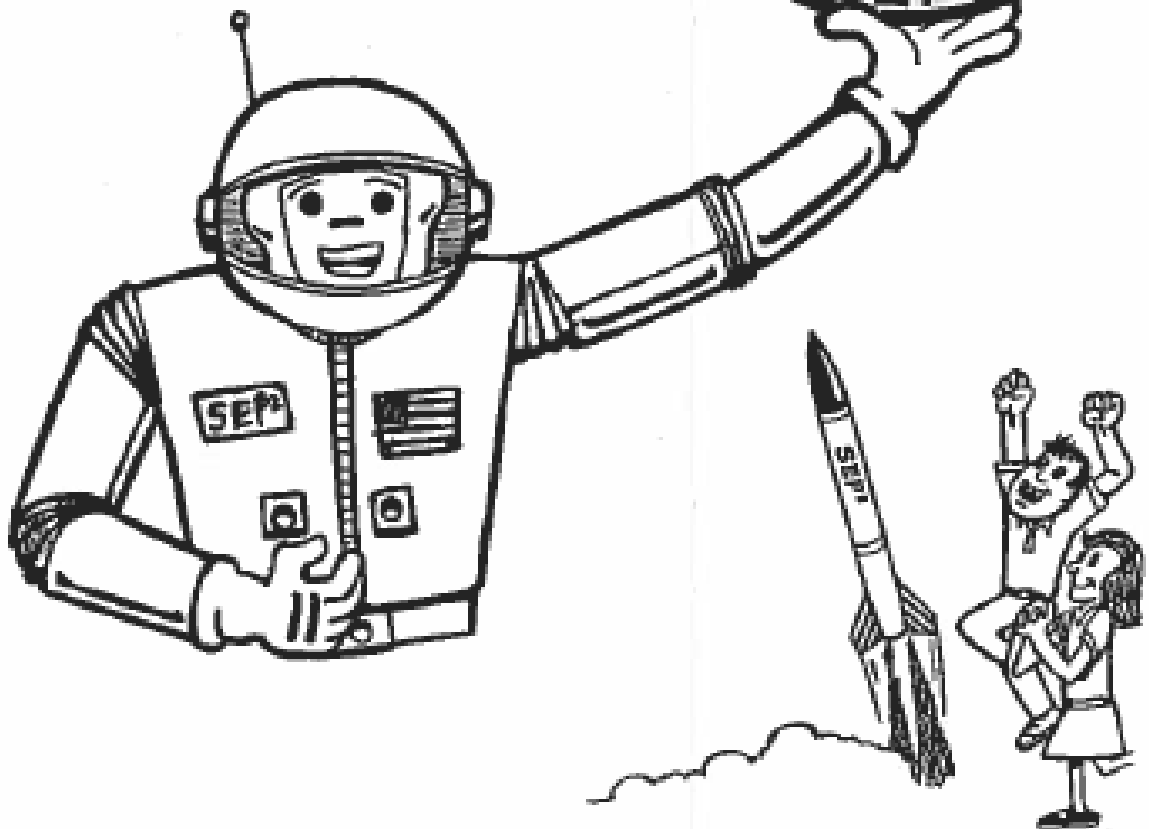


An Introduction to the Student Experimental Payload Program

"A non-profit organization dedicated to hands-on aerospace education"

*Welcome to the
Student Experimental
Payload Program.
I'll be your guide through
this introduction to a
most unique hands-on
learning experience.*

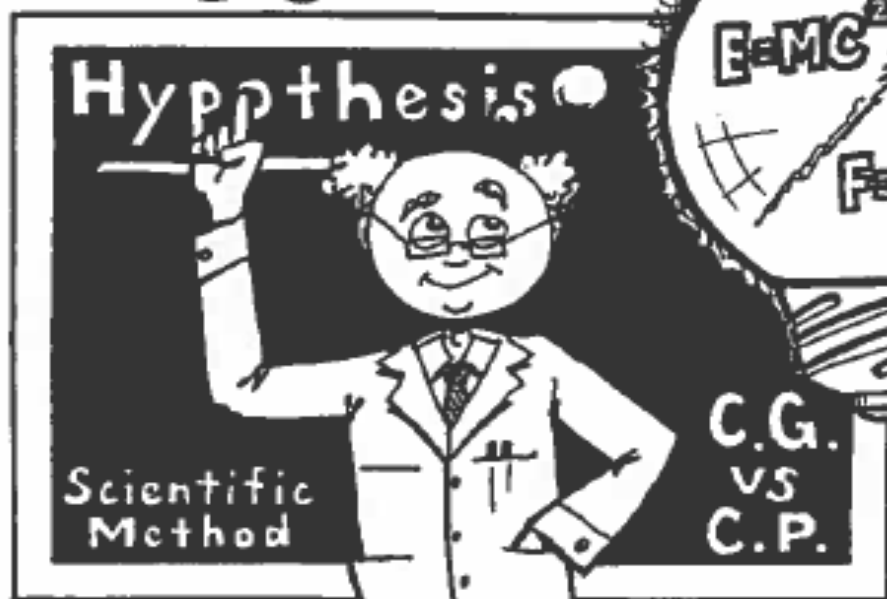
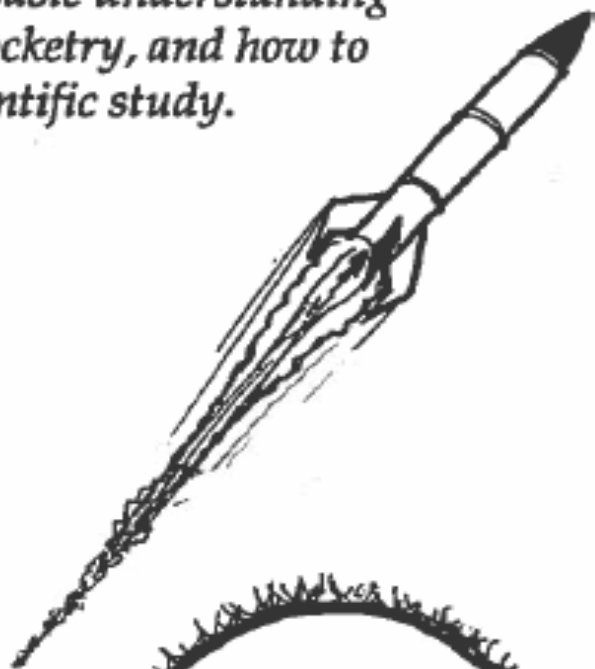


SEP Program • PO Box 2163 - White Salmon, WA. 98672

*Endorsed by the National Association of Rocketry
and Tripoli Rocketry Association*

*In order to participate in the SEP Program,
you must first gain a basic understanding
of the principles of rocketry, and how to
conduct a scientific study.*

Hypothesis
Thrust Apogee
Trajectory

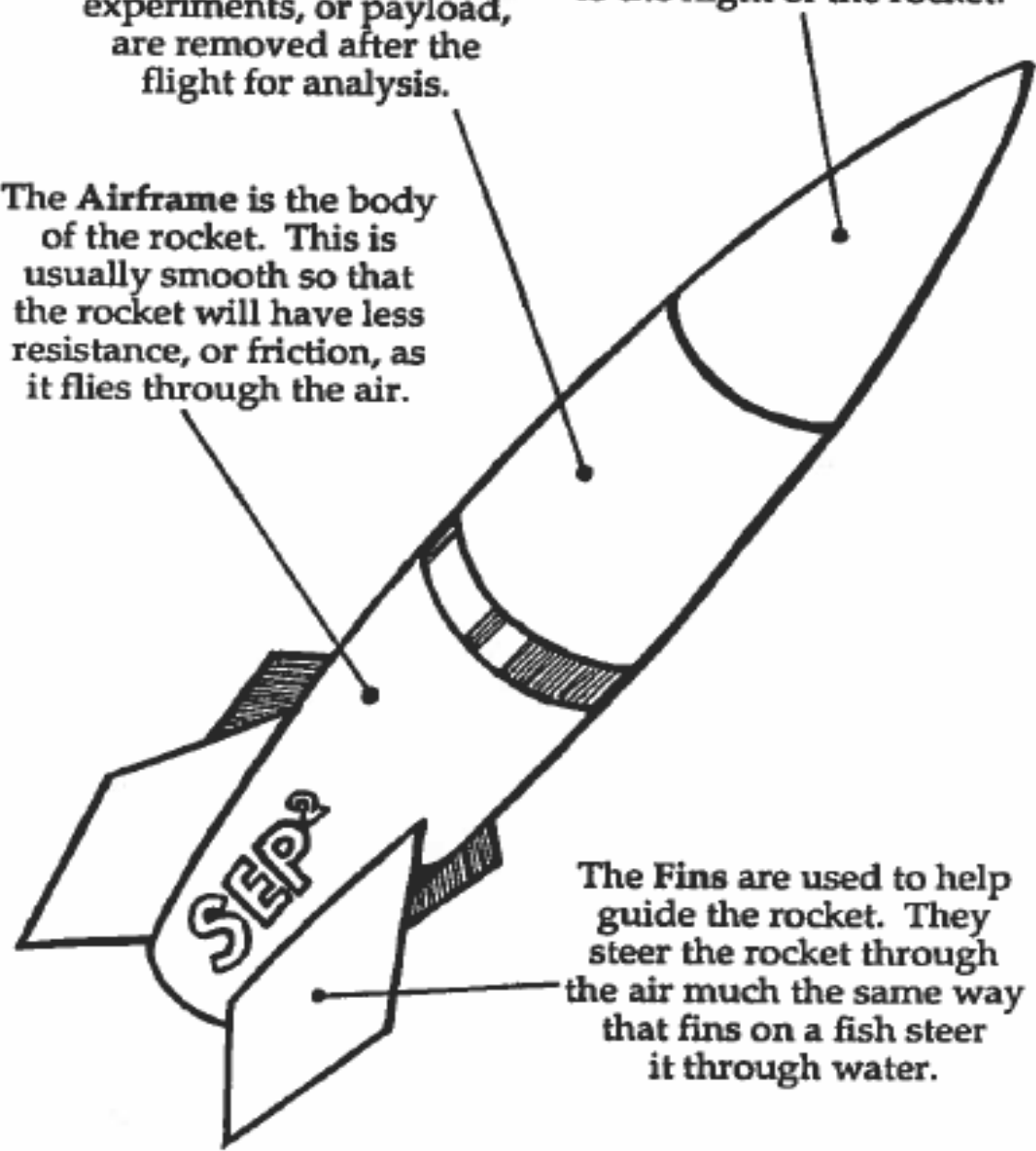


First, let's learn about the parts of a rocket. All SEP rockets, no matter how big or small, have the same basic components.

The Payload Bay is the section of the rocket that contains experiments. The experiments, or payload, are removed after the flight for analysis.

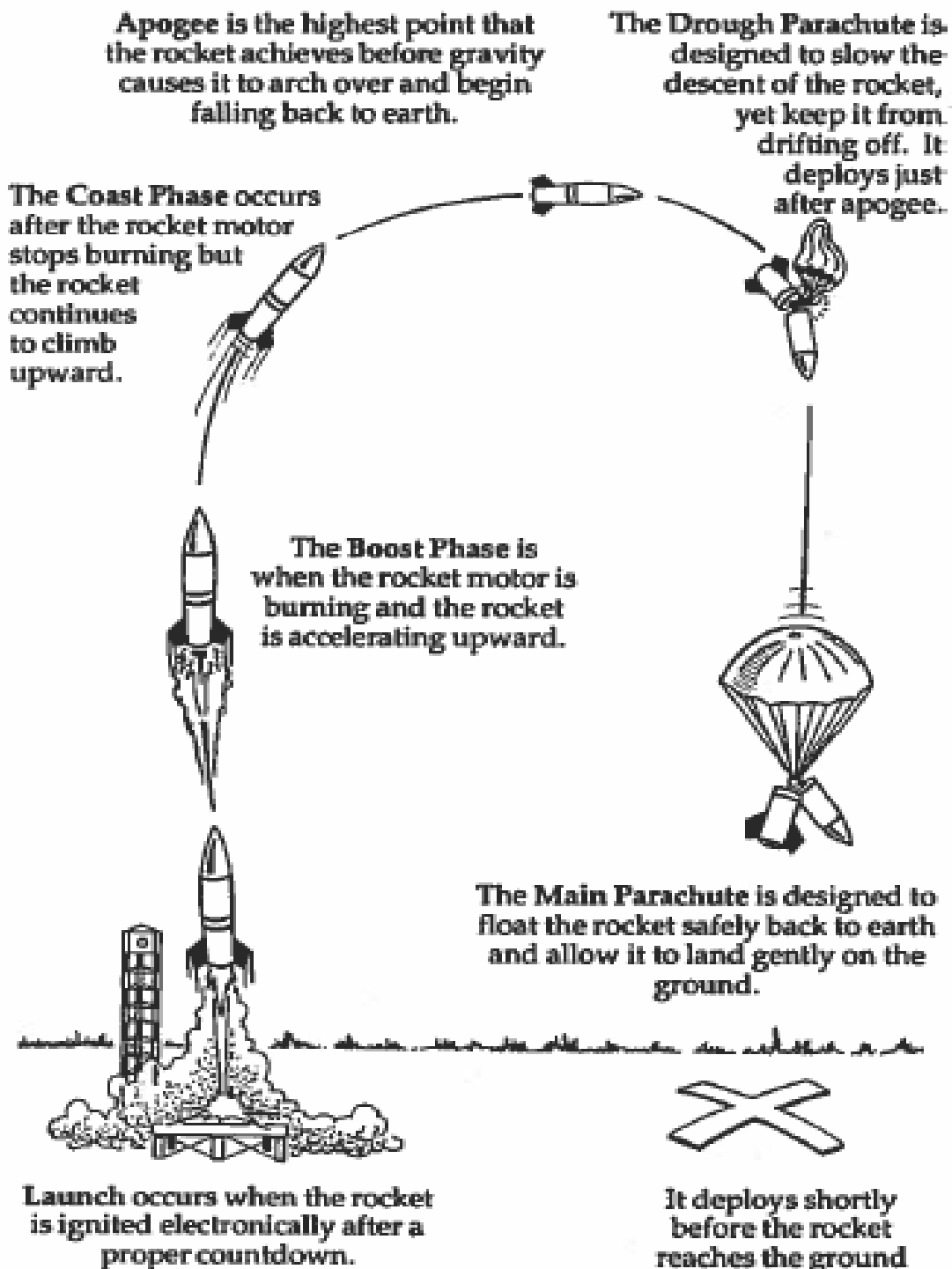
The Nosecone is the point, or tip, of the rocket. Sometimes called a shroud, it holds equipment, instrumentation, or computers important to the flight of the rocket.

The Airframe is the body of the rocket. This is usually smooth so that the rocket will have less resistance, or friction, as it flies through the air.



The Fins are used to help guide the rocket. They steer the rocket through the air much the same way that fins on a fish steer it through water.

Now that we know the parts of a rocket, let's find out what happens when it is launched. All SEP rockets follow the same basic flight profile, or trajectory.

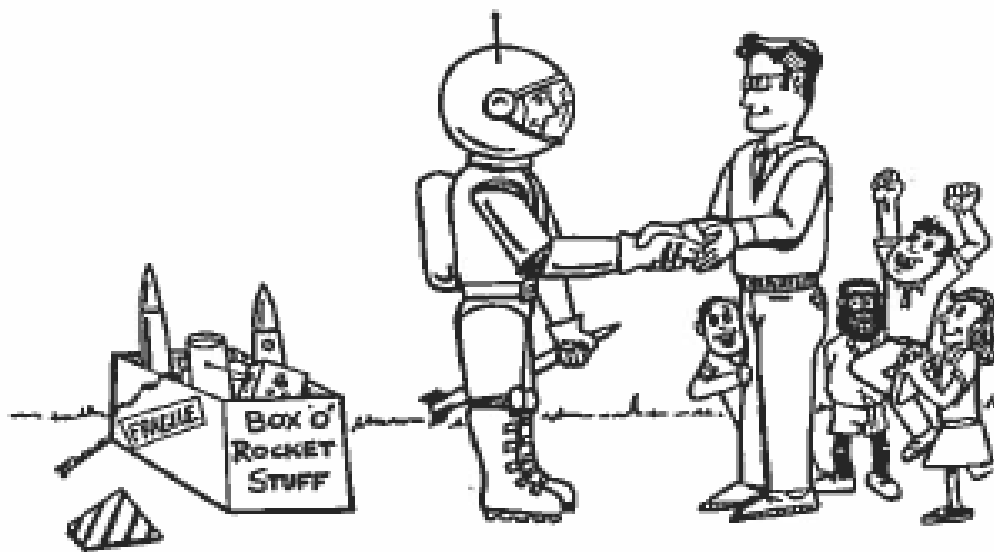


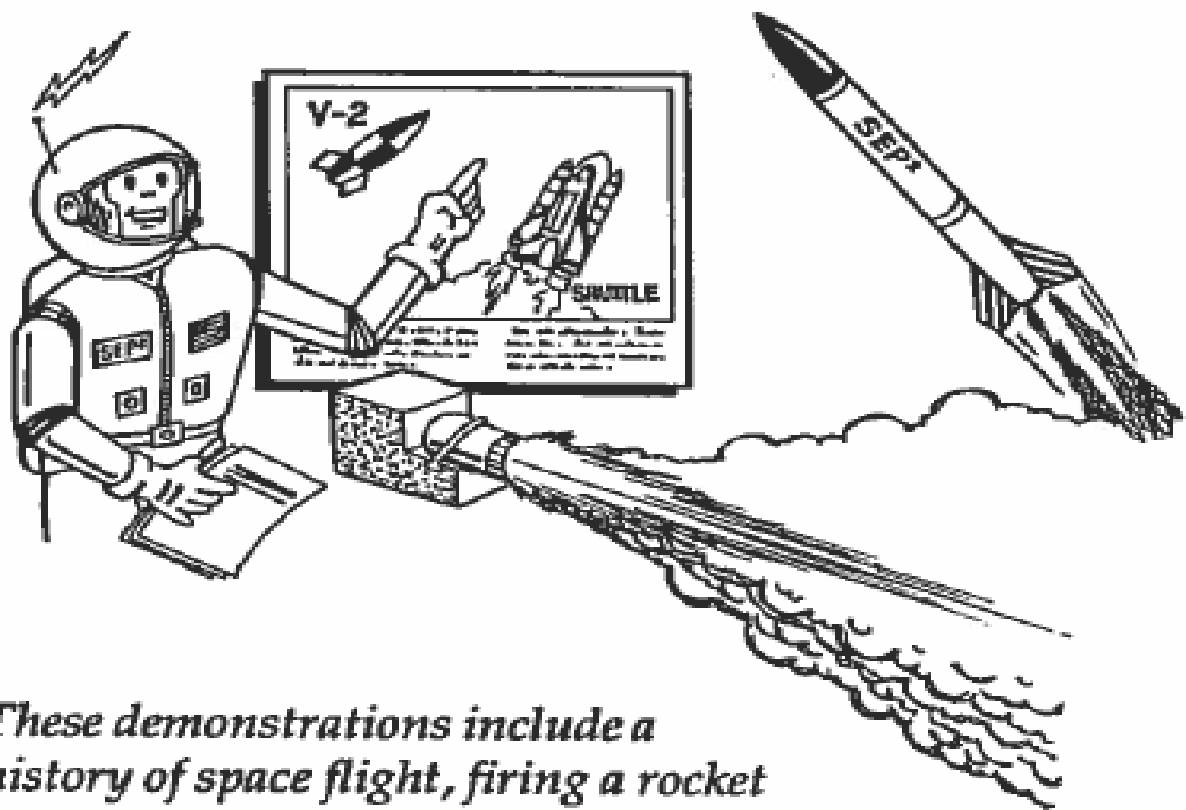
Since you now have a basic knowledge of rockets and how they work . . .



*let's see how you can
get some hands-on experience
in the field of aerospace technology.*

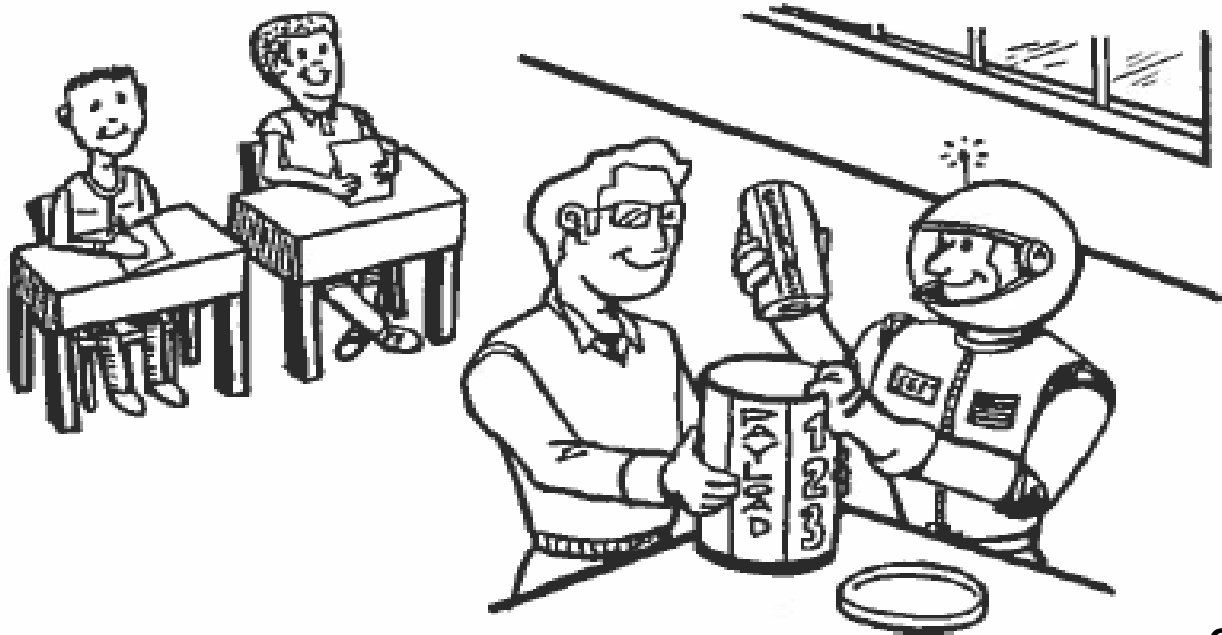
*If you are in elementary school, the SEP Team will
come to your school (or help your teacher) conduct
a demonstration in rocketry.*





These demonstrations include a history of space flight, firing a rocket motor from a test stand, and launching a model rocket.

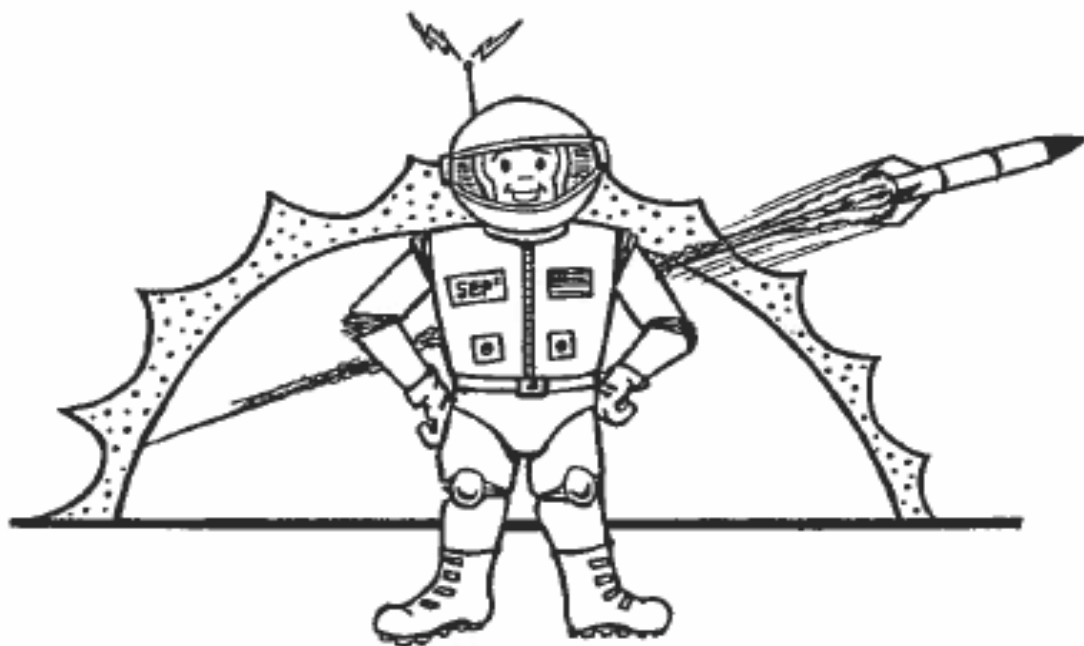
If you are in middle school grades, your class may participate in the Payload Phase of the SEP Program. Your class can build an experiment that will be launched onboard one of the SEP rockets.



If you are in high school, you may build an experiment on your own. Once finished, it will be launched onboard one of the SEP rockets.



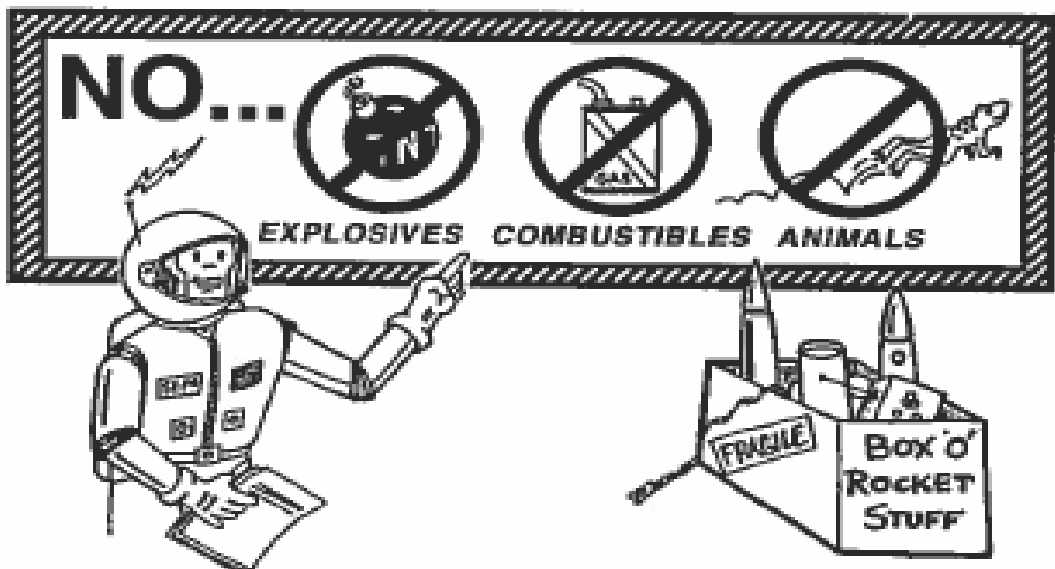
*Now, let's learn about payload experiments and how to become a **PAYLOAD SPECIALIST!***



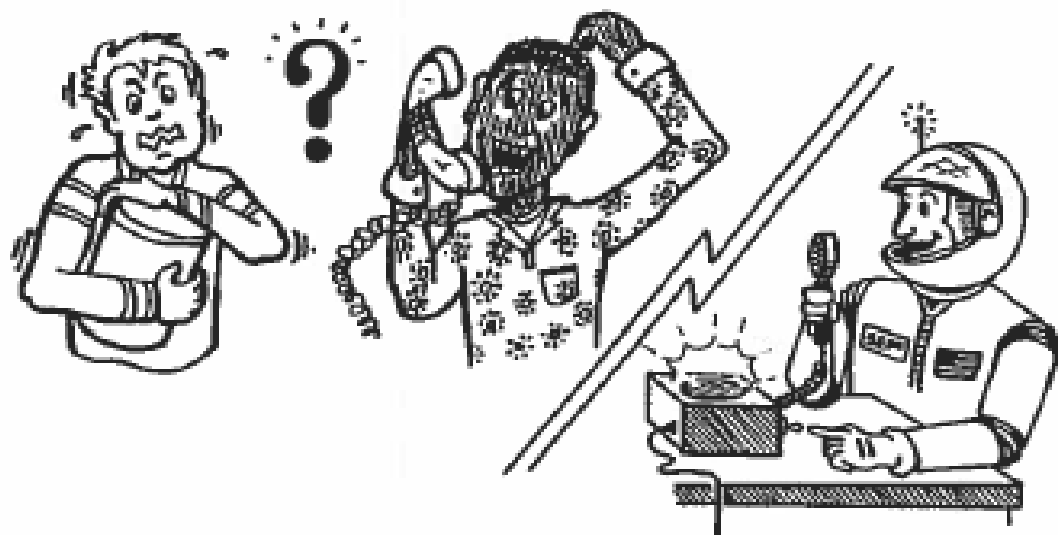
In order to properly design and build a payload experiment, you should obtain a PAYLOAD DESIGN KIT. This kit contains information about measurements, weights, allowable materials, and even a list of suggestions to help you build your experiment.



The kit also covers what materials can't be used in an experiment.



As you work on your experiment, remember that your teacher is available to assist. Also, you may obtain help from other individuals, or contact the SEP Program if you get stuck.



Once your experiment is finished, you may deliver it to the SEP Operations Center, or mail it in.

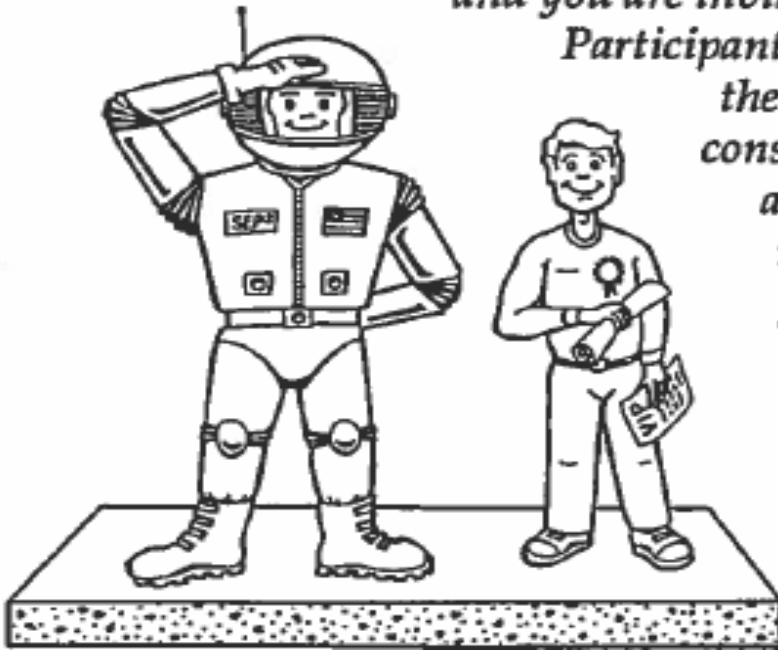


After all the experiments have arrived, the SEP Team creates a MANIFEST. This is a list of which payloads will be placed on which rockets. A launch schedule is arranged after the manifest has been completed.



The SEP launches are open to the public and you are invited to attend.

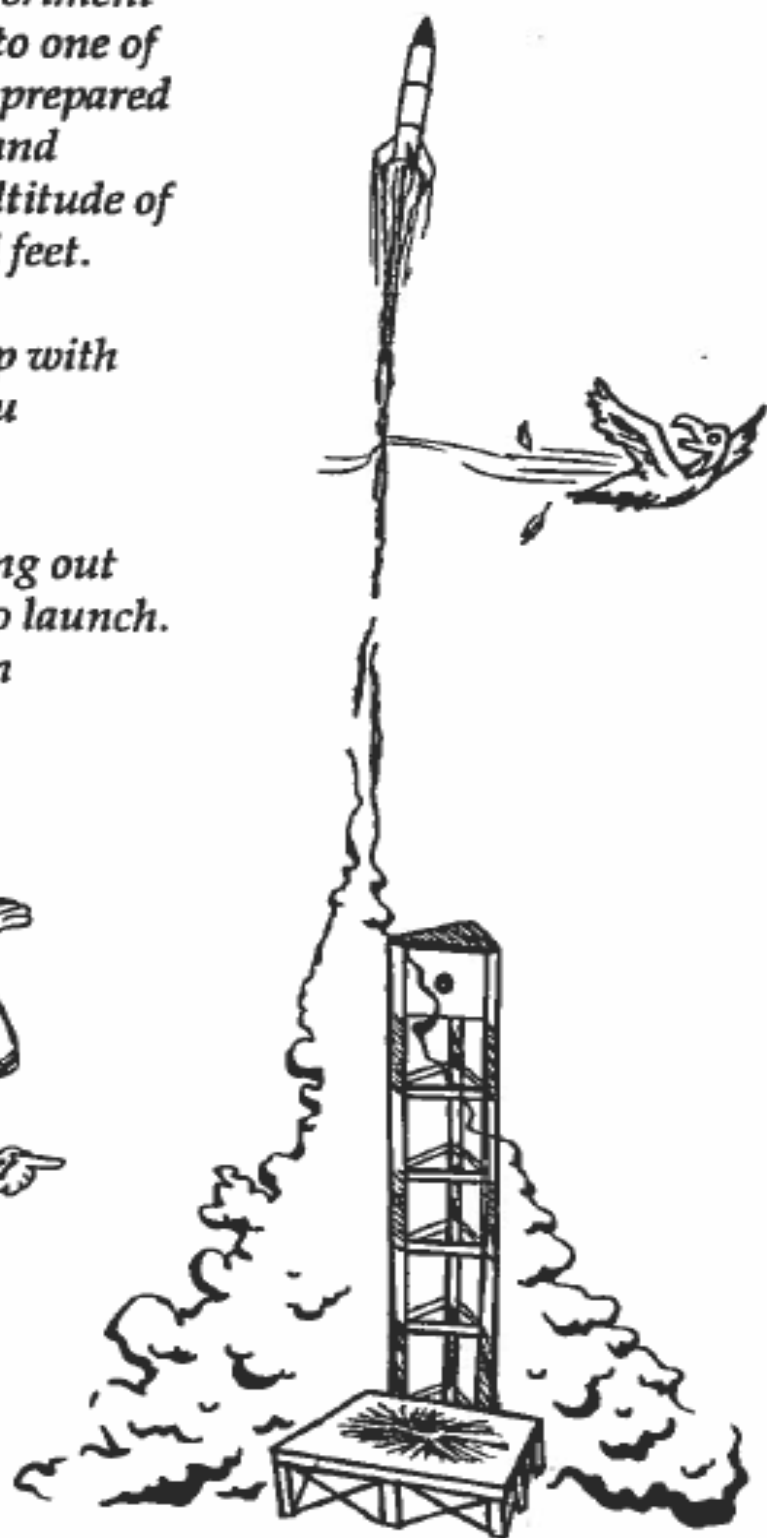
Participants who attend the launches are considered VIP's and can assist in the launch preparations.



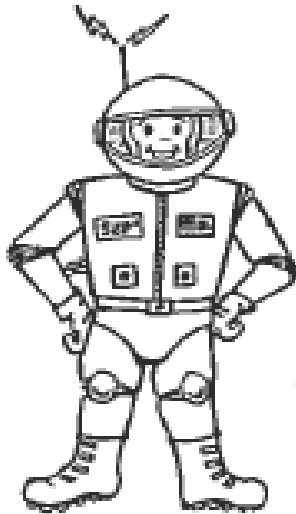
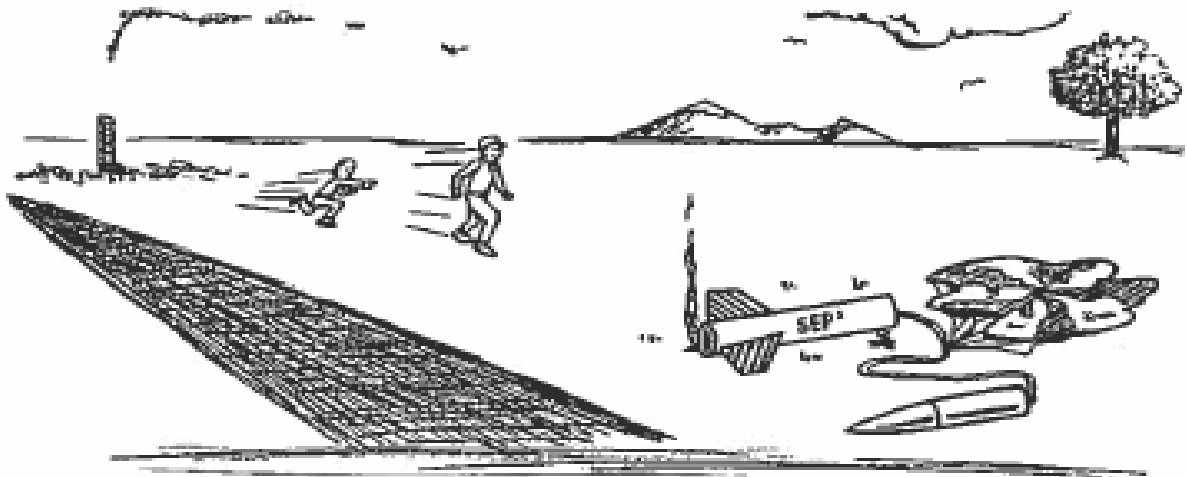
When the big day arrives, your experiment will be loaded into one of the SEP rockets, prepared for the mission, and launched to an altitude of several thousand feet.

And you can help with the mission if you would like.

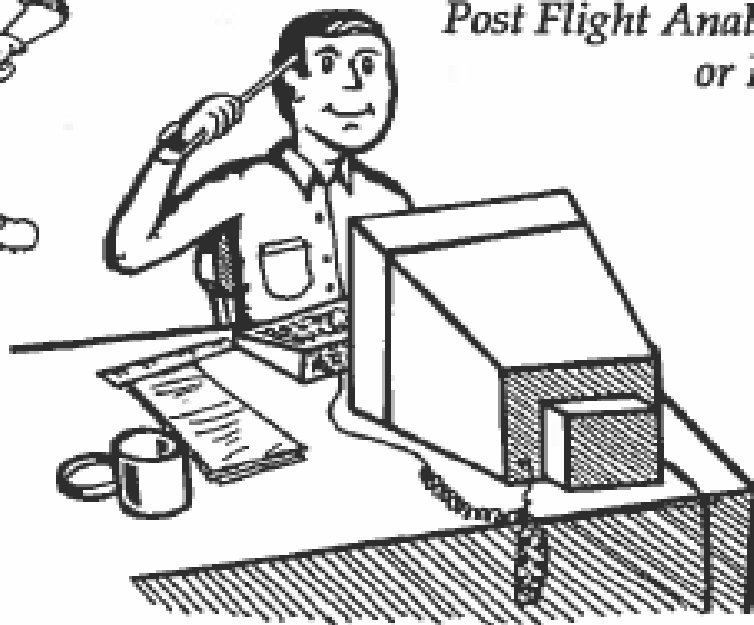
Other people bring out smaller rockets to launch. The activities can sometimes last the whole day!



After the rocket is recovered, the payload canister is returned to you, unopened, so that you may be the first to analyze your experiment.

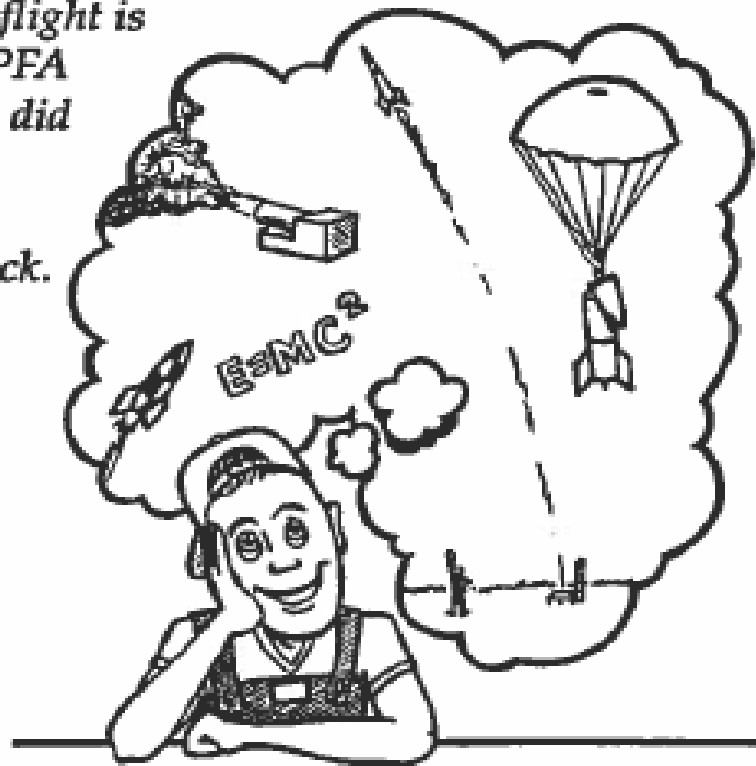


Once you have completed your analysis, you must write a one page report on your findings. This is called a Post Flight Analysis, or PFA.

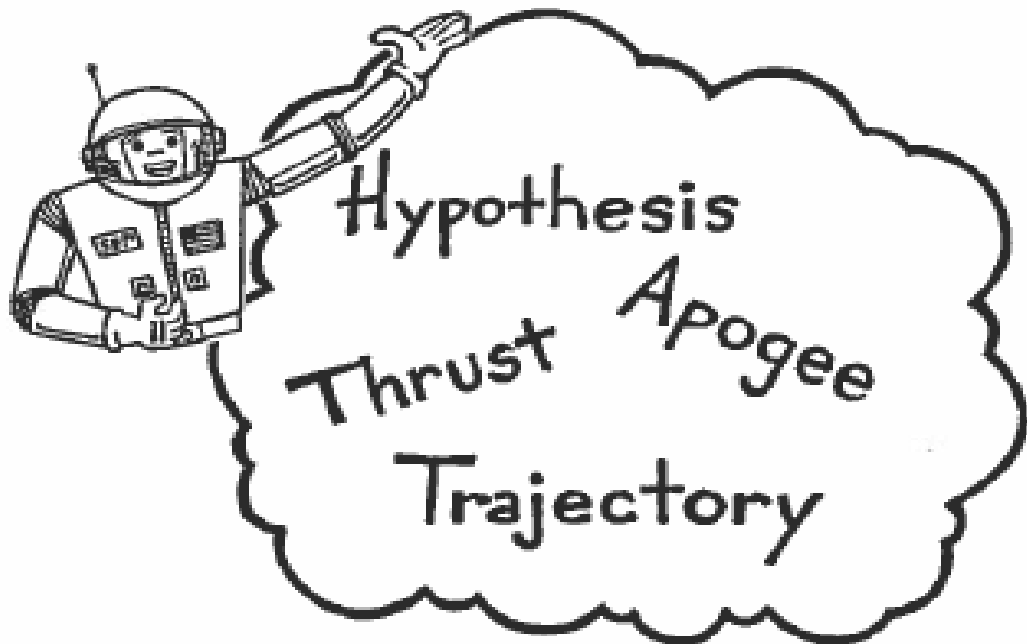


Now that the flight is over and the PFA written, what did you gain?

Let's think back.



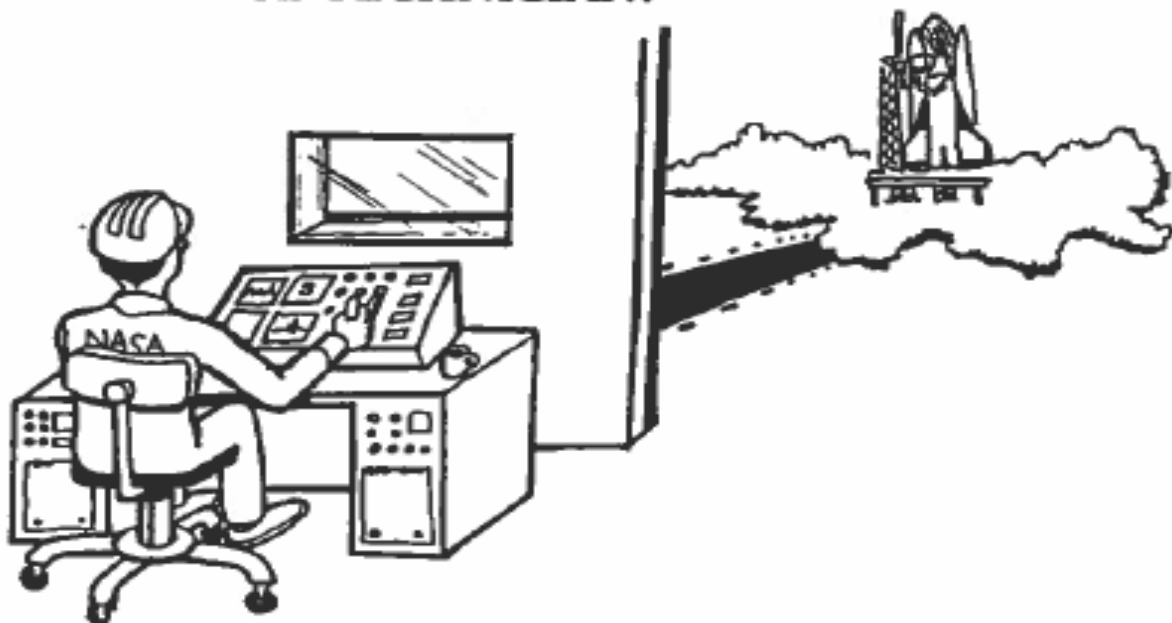
First, you learned **NEW TERMINOLOGY** and **AEROSPACE PHRASES**.



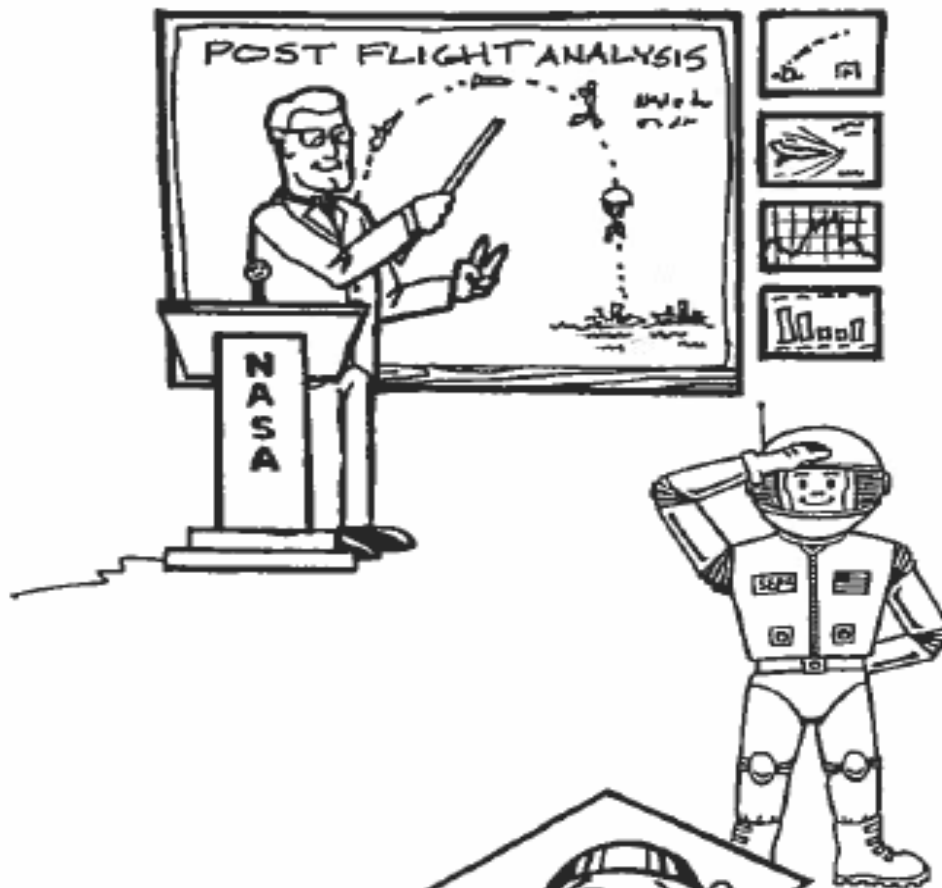
Next you learned first hand what is involved in designing and building an experiment, much like an AEROSPACE CONTRACTOR.



Then you were involved in the launch operations and recovery of the rocket, much like an AEROSPACE TECHNICIAN.



*And finally you wrote a Post Flight Analysis,
just like an AEROSPACE ENGINEER!*



*Not to mention you
will also
receive a really
good-looking
certificate
designating you
as an official
SEP PROGRAM
PAYLOAD
SPECIALIST!*



About the SEP Program

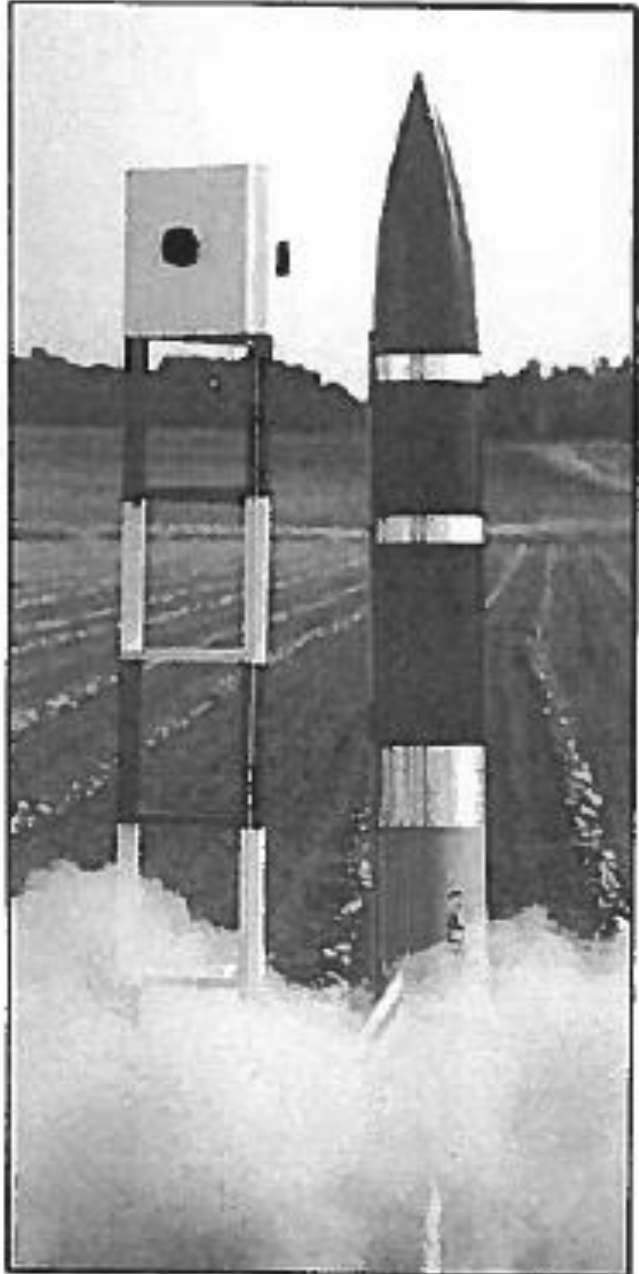
The Student Experimental Payload (SEP) Program is the largest non-profit student oriented payload launching service in the country. Using Class B sounding rockets to launch several student payloads on each flight, the sophisticated electronics and telemetry equipment give participants a true hands-on experience as a "rocket scientist".

Since its creation in 1990, the SEP Program has successfully launched payloads designed and constructed by students from all across the country. With flights typically reaching altitudes of several thousand feet, the program is constantly upgrading its materials, resources and capabilities. These efforts will eventually enable the SEP rockets to reach several miles into the lower atmosphere, providing new and unmatched possibilities for young rocket scientists.

If you would like additional information or would like to participate in the SEP Program, contact the Program Manager at the address below or call

509-637-3992

SEP Program
PO Box 2163
White Salmon, WA. 98672



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