Huntsville's Space Links

Trace how Alabama's space work led to new possibilities.

ESS.3.c "Obtain and communicate information about Alabama's contributions to space exploration."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline one action carried out through Marshall in each paragraph, circle a result of that action, and give each matching action and result the same number.

From Moon Rockets to Orbiting Labs

(1) In Huntsville, Alabama, engineers at NASA's Marshall Space Flight Center worked on a problem that stood between astronauts and the Moon: how to launch a spacecraft heavy enough for the trip. Established in 1960, Marshall directed development of the Saturn V rocket for the Apollo program. Its five powerful first-stage engines supplied the thrust needed to lift the rocket off Earth. Companies built major components in several states, but Marshall engineers tested hardware and coordinated the work. By making the launch system possible, this Alabama center helped Apollo astronauts reach the Moon between 1969 and 1972.

(2) After the Moon landings began, Marshall helped turn rocket technology toward a different goal: learning how people and materials behave in orbit. The center led development of Skylab, the United States' first space station. Its design used a converted Saturn rocket stage as a workshop with room for experiments and a crew. Launched in 1973, Skylab supported three crews who studied the Sun, observed Earth, and investigated how extended time in weightlessness affects the human body. Those observations helped scientists plan for later missions that would keep people in space longer than a trip to the Moon.

(3) Alabama's space work did not stop with rockets or Skylab. At Marshall, the Payload Operations Integration Center supports science aboard the International Space Station. Teams on the ground schedule experiments, help astronauts use research equipment, and track data sent back from orbit. If a test needs a change, ground teams can coordinate with the crew rather than leaving astronauts to solve every problem alone. This support makes limited crew time more useful and helps researchers collect reliable results. From launching a spacecraft to guiding experiments, work in Huntsville has changed what people can do and learn in space.

2 ANSWER WITH EVIDENCE

Use the passage

1. How did Marshall's work on the Saturn V help make Apollo Moon landings possible?

2. How did the design of Skylab make new kinds of research possible?

3. Why were Skylab's studies of the human body useful for planning later missions?

4. How does the ground team's work at Marshall affect research on the International Space Station?

3 YOUR TURN

Your own words

A museum visitor claims Alabama's space role ended after the Moon landings. Write a five-sentence exhibit label that corrects the claim using Skylab and the International Space Station, and explain how Marshall's work changed between those projects.

ANSWER KEY

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PART 1 · READ AND MARK

Underline one action carried out through Marshall in each paragraph, circle a result of that action, and give each matching action and result the same number. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How did Marshall's work on the Saturn V help make Apollo Moon landings possible?	**Marshall directed rocket development, tested hardware, and coordinated work. The resulting launch system could lift the spacecraft needed for Moon missions.**
2	How did the design of Skylab make new kinds of research possible?	**A converted rocket stage provided a workshop where crews could live and conduct experiments in orbit.**
3	Why were Skylab's studies of the human body useful for planning later missions?	**They showed scientists how extended time in weightlessness affects people, which helped them plan longer missions.**
4	How does the ground team's work at Marshall affect research on the International Space Station?	**By scheduling experiments and helping crews adjust tests, the team makes better use of limited crew time and helps researchers collect reliable results.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Alabama's space role continued after the Apollo Moon landings. Marshall led development of Skylab, a station where crews conducted experiments in orbit. Those experiments helped scientists plan longer missions. Today, teams at Marshall support research aboard the International Space Station by scheduling experiments and helping crews. Marshall's work shifted from developing an orbiting workshop to helping operate experiments on a station in use.

Accept accurate cause-and-effect explanations supported by the passage. The exhibit label should name both later projects and distinguish developing Skylab from supporting experiments on the International Space Station.