

# From the Earth to the Moon

## Part 4: “Spider” (Apollo 9)

Name \_\_\_\_\_  
Date \_\_\_\_\_ Pd. \_\_\_\_\_

Although Apollo 9 happened after 8 (duh), it launched less than 3 months later in March `69 and the bulk of this story deals with the 7 year design and creation of the Lunar Module, the vehicle that would one day land humans on the moon. **BE AWARE** – With this the last story about U.S. space exploration **BEFORE** our actual landing on the moon, **a Socratic quiz on the Mercury, Gemini & Apollo missions so far is on its way! (Install Socratic Student!)**

1. What 2 ways did Werner Von Braun (former German rocket scientist during WW2) see as the only ways man could land on the moon?
2. What is the main advantage of using Dolan’s “lunar orbit rendezvous”? What part of it is difficult (as of his initial idea in the 1950s when we hadn’t even put a man in space yet)?
3. How did the engineers at Grumman greatly reduce the amount of glass needed for windows to decrease the weight of the LEM dramatically?
4. List and describe other changes made to the original design of the LEM that don’t involve the windows (at least 3).
5. Because of the LEM’s design problems, NASA decided to orbit the moon without it with Apollo 8 before testing it in Earth orbit during Apollo 9. Why did Jim McDivitt’s crew decide to stick with the Apollo 9 mission?
6. For what two reasons was the entire mission and then EVA almost scratched?