



NASA: Engineering Design Challenges: Thermal Protection Systems Educator Guide

By -

Bibliogov, United States, 2012. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.Space vehicles must have thermal protection systems to maintain acceptable temperatures. When designing the TPS, aerospace engineers must consider the heat from atmospheric friction on a spacecraft during launch and re-entry and the extreme heat generated from the exhaust plumes of the engine. In this challenge, students learn how NASA engineers design lightweight but effective, reusable thermal protection systems. Students work in teams to design, build and test a thermal protection system of their own. Simple materials such as wooden dowels, hot-melt glue, aluminum foil and copper screening are used to build a simulated spacecraft and a TPS that can withstand the heat of a propane torch. The TPS is tested under a stringent protocol to maintain classroom safety.



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