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## Resources: Getting There - Space

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# RESOURCES

## getting there – space

### introduction

Rockets provide a wonderful topic to explore a variety of science, technology, and mathematical concepts. There are a variety of safe and fun rocket models that can be built in your classroom using commercial kits or even using common household items such as pop bottles and film canisters. Model rockets have been featured so many times in technology and science classrooms across the United States that rocket building may have lost its “luster” with our students today. Looking for a way to revive that rocket excitement? Try out this resource.

### background

In the 1960s and early ‘70s, many boys and girls dreamt of becoming astronauts and traveling to the moon. Why? They witnessed the great space race. Similarly, children of the late 1920s were inspired by an unknown airmail pilot named Charles Lindbergh when, in 1927, he flew his airplane nonstop between New York and Paris, a feat that had never before been accomplished. What inspired Lindbergh to take such a daring trip? Simple: a contest. In 1919, a wealthy hotel owner named Raymond Orteig created a contest for aviators to be the first to make the trip from New York to Paris and win the Orteig prize of \$25,000.

Today, those events are just faded moments in history; however, a new era of contests has the potential to inspire our youth once again. In the spirit of the Orteig prize, the X-Prize Foundation has created a number of contests to spark a revolution in the space, medicine, energy,

automotive, education, environmental, and social arenas. One such contest was the Ansari X-Prize, a 10-million-dollar purse for the first privately funded design team to successfully create a spacecraft capable of carrying three 6’2”, 198-pound adults to an altitude of 62 miles twice in a 14-day time span.

### getting there resource

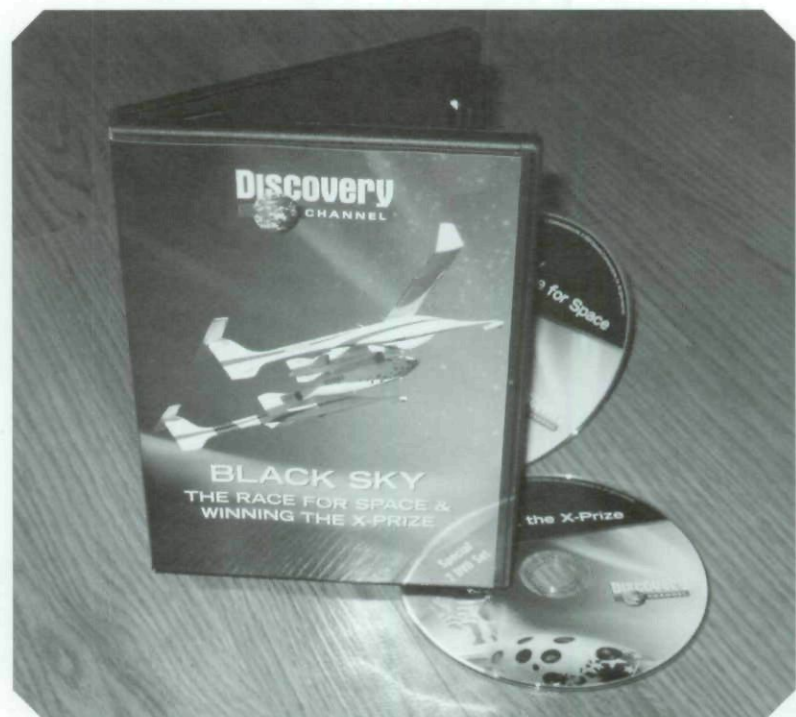
**Video:** The Discovery Channel’s *Black Sky: The Race for Space & Winning the X-Prize* is an excellent video resource that explores the idea of space travel for the common man and woman in the very near future. This film carefully documents the struggles and successes of Burt Rutan’s team (Scaled Composites) as they design, build, and launch their rocket ship known as SpaceShipOne—the spacecraft that

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eventually won the 10-million-dollar Ansari X-Prize on October 4, 2004.

How will the results of this “adult” rocket contest affect you and your students? On July 27, 2005, Rutan teamed up with Sir Richard Branson, founder of Virgin Airlines, to form a new aerospace production company with a goal to build an entire fleet of commercial suborbital spacecraft—so, possibly you or one of your students may be purchasing a ticket for a trip into outer space in the near future!

The documentary-style video *Black Sky* highlights the achievement of the Scaled Composites team as well as several of the struggles that occurred when designing a new technology. The filmmakers



documented real-life events that cannot be scripted. There are several moments in the documentary that have you on the edge of your seat, wondering if the test pilots will make it back alive. One such moment shows a nervous ground crew struggling to locate a solution to their spacecraft that is in an out-of-control tailspin and quickly rushing toward earth. One ground crew member was a young engineer who was carefully reading the data being received from sensors on the spacecraft. Appearing very calm, the young engineer communicates adjustments that he believes the test pilot needs to make to come out of the stall. A split second later, upon completion of the adjustment, the spacecraft stabilizes, thus restoring the fate of the test pilot.



SpaceShipOne

## use in the classroom

The *Black Sky* video can be used to inspire your students to learn more about space transportation and the science and technology of modern rocketry. Moreover, students can learn about the various stages of the design process by watching the Scaled Composite team approach each stage of the design process. Students will witness the early steps in the design process, and as the documentary continues, students may notice the design team revisiting some steps again. Therefore, they would be identifying the iterative nature of ill-defined problem solving. Students could also benefit from witnessing the perseverance displayed by the design team as they fail to quit during some early setbacks. *Black Sky* may be the example that students will recall as they participate in design projects and are faced with similar challenges. The X-Prize Foundation sponsors a number of rocket contests geared to fifth grade that can be located at <http://space.xprize.org/x-prize-cup/explore/>.

In closing, it is important to note that *Black Sky* presents history in the making, highlights pioneers who forge into uncharted territory in order to pave the way for commercial space travel, and illustrates how engineers and technicians design and construct technology to “get us there”—and in this case, “there” is outer space travel. 💡

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## product information

*Black Sky: The Race for Space & Winning the X-Prize*  
<http://shopping.discovery.com/product-56717.html>  
 2 disc DVD set  
 2 hours, 23 minutes  
 Full Screen  
 Not Rated  
 \$24.95

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