

School Participates In Shoebox Challenge

Can A Shoebox Fly? Several students from New Dimensions Charter School in Morganton decided to find out.

New Dimensions Charter School participated for the first time in the Third Annual Great Shoebox Glider Challenge.

The Challenge is a hands-on, inquiry-based learning experience facilitated by NASA's Digital Learning Network and sponsored by the North Carolina Department of Public Instruction's Distance Learning Section.

The challenge was to produce a design that incorporates a shoebox as part of the glider.

As part of the challenge, the students needed to accomplish the following tasks:

- Research the dynamics of flight and apply them to their efforts;

- Determine and gather the materials needed for their glider

- Determine how to launch the shoebox glider in a consistent way;

- Obtain the most efficient glide slope ratio possible;

- Demonstrate their understanding and success to NASA.

The students volunteered to be a part of this program and met twice a week after school to participate in the project.

Jevon Morris, a parent of four New Dimensions School students and a member of the Blue Ridge Flying Eagles (Caldwell Community College's Flying Club), volunteered to help guide the students through this discovery. The students learned about the four forces that act on an object in flight.

They had to discuss and demonstrate each of the four forces in detail. They had to learn and explain aviation



Students at New Dimensions Charter School participate in the third annual Great Shoebox Glider Challenge. PHOTO CONTRIBUTED

terms such as aspect ratio, glide slope ratio, aerodynamics, Bernoulli's Principle, relative wind and angle of attack. They also talked about different careers in aviation.

The project included a field trip to the Morganton/Lenoir Airport where Brandon Nesmith, chief flight instructor, answered questions about the two gliders at the airport. Students were guided on a tour of the facility. As a part of that tour, the students got to see many different types of aircrafts and board a Citation Jet.

In addition, they also were able to go to the Hickory Regional Airport where Leslie Kolcun, air traffic control manager, showed them an air traffic control tower in operation.

The classroom activities,

along with the field trips, provided the foundation for the students to go home and begin working on their own gliders. The students came back and were divided into four teams:

C-4 Eagles: David Hahn, Christian Klotzle, Skyler Smith

The 4 Forces of Flight: Jake Clarke, Zach Clarke, Heather Duffey and Marley Honea.

The Acrobatics: Landon Edwards, Jevon Morris and Santiago Morris.

The Icurris Gators: Jameson Auton, Gage Qwyn, Kenyon Johnson and Sam Stephens.

Partners in Flight is a project begun in 2003 to prepare and inspire students to fly their dreams. They use NASA's awesome Shoebox

Glider Challenge as a vehicle for engaging students in rigorous scientific inquiry enhanced by distance learning technologies.

Teams from three states accepted the challenge and the following five schools were selected to present their research to the NASA Challenge Master via two-way videoconferencing. They are Pisgah Forest Elementary School, Transylvania County Schools; Millennium Charter Academy, Mount Airy; South Fayette Middle School, South Fayette, Pa.; Gray Stone Day Charter School, Misenheimer; and Forest View High School, Gaston County Schools.

The New Dimensions Charter School students are looking forward to the the Shoebox Challenge of 2007.

