

CALIFORNIA STATE SCIENCE FAIR**2001 PROJECT SUMMARY****Your Name** (List all student names if multiple authors.)**Daniel C. Klear****Science Fair Use Only****J0918****Project Title** (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)**The Effect of Sail Shape on Sailing Efficiency****Division****J Junior (6-8) J Senior (9-12)****Preferred Category** (See page 5 for descriptions.)**9 - Fluid Mechanics/ Aerodynamics/ Thermophysics****Abstract** (Include Objective, Methods, Results, Conclusion. See samples on page 14.)

Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

I have always wondered why sailboats have a triangular sail, instead of another shape. To solve this I created four different shaped sails, a normal triangular sail, a tall and skinny triangular sail, a rectangular sail, and a lateral mount rectangular sail. Every sail had the same amount of surface area.

I created four string scales and tied them to four different places on the boat, front, back, left and right. I had a fan blow the same speed in 9 different places around the tub that the boat was in. I read what each scale said and put the readings on a graph.

I found that the lateral mount rectangular sail did significantly better than the others.

Summary Statement (In one sentence, state what your project is about.)

I did my project to find out what shape of sail creates the most force under a constant wind speed.

Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.

Dad helped with construction.