CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

Name(s)
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Project Number
J1813

Project Title
Wood Stiffness

Abstract

Objectives/Goals
The purpose of the study was to compare vertical grain versus horizontal grain stiffness within and between three species of North Coast softwoods.

Methods/Materials
Wood samples from Douglas Fir, Coastal Redwood, and Sitka Spruce were carefully selected, split along the grain and dried and planed to the same dimensions and then tested by placing a load at the same postion in each. Measurements were taken to the nearest 0.001 inches to record the deflection with the grain oriented both vertically and horizontally.

Results
All species showed variation within the same sample (board) and between samples. Redwood consistenly was less stiff than the other species. Both Redwood and Douglas Fir were stiffer with the grain oriented vertically.

Conclusions/Discussion
No consistent conclusion can be made from the results about grain orientation and stiffness for all species tested. Stiffness varied even in samples taken from the same board.

Summary Statement
The project compares the stiffness of three wood species orienting the grain vertically and horizontally.

Help Received
Mother helped type/edit report. Father helped with the preparation of the wood samples.