



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Samuel C. Nobles	Project Number J0123
Project Title Does the Size of the Waterwheel Paddle Affect Speed and Performance?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this experiment is to find out if adding more paddles or changing the width of the paddle fold will affect the speed and performance.</p> <p>Methods/Materials</p> <ol style="list-style-type: none">1. Create a template using a pie chart in Microsoft Excel.2. Use the waterwheel template to create a nine-inch waterwheel out of a pie tin.3. Make three waterwheels with five equal paddles. One wheel should have paddles with two-inch folds, another with three-inch folds, and a third with four-inch folds.4. Repeat step four creating a waterwheel with six, seven, eight, and nine equal paddles.5. Place a bucket with a hole drilled on each side in a sink with a faucet.6. Place a wooden dowel through the holes of the bucket.7. Use 50 cm of string and tie one end to the middle of the dowel.8. Tie the other end to a fishing weight.9. After placing a waterwheel on the dowel, run water on the wheel and time how long it takes the fishing weight to reach the top of the dowel.10. Repeat step nine two more times making sure to record times in the logbook.11. Repeat experiment steps nine and ten for each waterwheel design recording times in the logbook. <p>Results The paddles with the four-inch folds proved to be most consistent because the water remained on the paddle due to the larger fold size.</p> <p>Conclusions/Discussion The waterwheel with the four-inch folds worked the best and was more consistent because the water hit a larger area across the paddle of the wheel</p>	
Summary Statement This experiment is to find out if adding more paddles or changing the width of the paddle fold will affect the speed and performance.	
Help Received	