



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

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| Name(s) Caleb A.G. Carver | Project Number J1904 |
| Project Title Fish Factor | |
| Objectives/Goals The objective of this study was to see if plants would grow better in aquaponics or soil. | |
| Abstract | |
| Methods/Materials <ol style="list-style-type: none">1. See through plastic tote2. 5#X5#X8# vinyl fence post with cap3. 3#X8# PVC sewer line X24. Eye bolt, 2 washers & nut5. Piece of plastic cut to square inserted into post cap6. 1/2# PVC slip to thread pipe fitting7. 9# aquarium hose8. Vinyl fence post glue9. Clear aquarium caulk10. Aquarium pump (8# rise)11. 24 3# hydroponic root cups12. Aquarium filter padding13. 1 bag hydroton for media14. 55 gallon aquarium heater15. Medium aquarium bubbler pump, 4# tubing & large bubbler head16. 100 goldfish17. 24 starter plants (vegetables/herbs)18. Fish food flakes | |
| Tools Compound miter saw Drill and bits Caulking gun Roto-Saw and bits Sand pape Screw drivers | |
| Results The aquaponic plants grew astronomically bigger than the soil grown plants. | |
| Summary Statement I achieved plant growth rates from each types of growing | |
| Help Received My dad assisted me in the construction of my aquaponic tower. | |