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|  | **Daily Log**  Experiment 1: Room Temperature Water     |  |  |  |  |  | | --- | --- | --- | --- | --- | | Day | Water Temperature (\*C) | Water Change | Casualties | pH | | 1 | 20 | yes | none | 7.2 | | 2 | 20 | no | none | ~ | | 3 | 20 | yes | Otto, Freddy, Lyle, Arty, Rooney | ~ | | 4 | 18 | no | Eddy | ~ | | 5 | 20 | yes | none | ~ | | 6 | 20 | no | Ferris, Reggie | ~ | | 7 | 18 | yes | none | 7.2 | | 8 | 20 | no | none | ~ | | 9 | 20 | yes | Clem | ~ | | 10 | 19 | no | none | ~ | | 11 | 19 | no | none | ~ | | 12 | 20 | yes | Jean | ~ | | 13 | 20 | no | none | ~ | | 14 | 20 | yes | none | 7.2 | | 15 | 19 | no | none | ~ | | 16 | 18 | no | none | ~ | | 17 | 20 | yes | none | ~ | | 18 | 20 | no | none | ~ | | 19 | 19 | yes | Ida | ~ | | 20 | 20 | no | none | ~ | | 21 | 21 | yes | none | 7.2 | | Average | 19.52 | ~ | .52 a day | 7.2 |   **Graphs for Room Temperature Water**  Purple- Detoxified water Magenta- Tap Water  yellow- 16oz, tap water; magenta- 8oz, detoxified water; purple- 8oz, tap water  **Room Temperature**  The data for the room temperature experiment give interesting results. The graph of tap water casualties versus detoxified water casualties shows that significantly more fish in tap water died than ones in detoxified water. Also, all eight fish in a tap water environment died. This is not surprising given that most goldfish breeders believe that tap water contains lethal levels of chlorine and ammonia. Diet did not appear to play a role in fatality of the fish. Six fed once a day perished compared to five fed twice a day and six fed one type of food died while five fed a combination did. Their deaths might be due not to the diet, but to the water environment they were in. Eight of the eleven casualties died on water changing days. This may be due to the shock and trauma experienced by the fish when they are moved to different containers. Although all measures are taken against extra trauma, like making sure the water temperature in both containers is the same, the weaker fish might have been too frail to survive the experience.  Looking at only one variable at a time is not enough to get an idea of a suitable environment for goldfish. The most intriguing result I found when looking at my data was that no fish in 16oz detoxified containers perished. This would not be significant except for the fact that three of the four fish in 8oz detoxified containers did not survive. It appears that a larger container and surface area is more conducive for thriving goldfish. For tap water, it did not seem that size of container critically mattered to the fish's health.  Experiment 2: Cold Temperature Water     |  |  |  |  |  | | --- | --- | --- | --- | --- | | Day | Water Temperature (\*C) | Water Change | Casualties | pH | | 1 | 12 | yes | none | 7.2 | | 2 | 12 | no | none | ~ | | 3 | 11 | no | none | ~ | | 4 | 11 | yes | none | ~ | | 5 | 12 | no | none | ~ | | 6 | 12 | yes | none | ~ | | 7 | 10 | no | none | 7.2 | | 8 | 11 | no | none | ~ | | 9 | 11 | yes | none | ~ | | 10 | 12 | no | none | ~ | | 11 | 12 | no | none | ~ | | 12 | 11 | yes | none | ~ | | 13 | 12 | no | none | ~ | | 14 | 12 | no | none | 7.2 | | 15 | 12 | yes | none | ~ | | 16 | 11 | no | none | ~ | | 17 | 12 | no | none | ~ | | 18 | 14 | yes | none | ~ | | 19 | 11 | no | none | ~ | | 20 | 12 | no | none | ~ | | 21 | 12 | yes | none | 7.2 | | Average | 11.14 | ~ | 0 a day | 7.2 |   **Graph for Cold Temperature Water**  **Cold Water**  My data for the cold water experiment did not give as varied results as room temperature did. Since I performed this experiment after the room temperature one had finished, I decided not to test tap water as one of the variables. All the fish were put in detoxified water. For the 21 day test, no fish died. The only thing I can infer from these results is that goldfish are capable of living in a cold and dark environment for an extended amount of time. Lurking variables such as strength and vitality of the fish before the experiment might have confounded the data. However, I do not think this was the case. Perhaps goldfish do better in darkness. |

*This Web Site is Best viewed with 256 or more colors.*

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