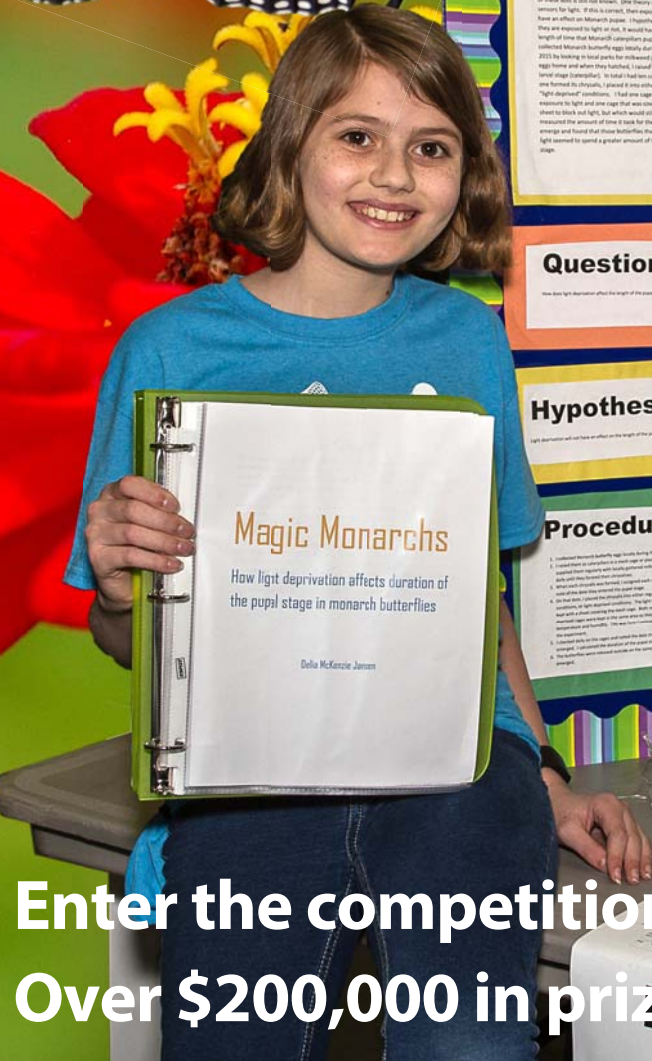


# What's your science fair project?



**Abstract**

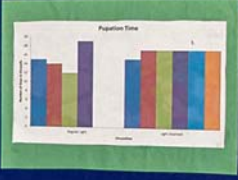
This project tries to discover whether reduced exposure to light causes a change in the length of time it takes for a monarch butterfly to go through the pupal stage of its metamorphosis. Monarch chrysalises have good eyes but, and the function of their eyes is still not known. One theory is that they are sensitive to light. If this is correct, then exposure to light may have an effect on monarch pupae. I hypothesized that when they are exposed to light or dark, it would have an effect on the length of time that monarch caterpillars pupate. To test this, I collected monarch butterfly eggs weekly during the summer of 2015 by looking in local parks for milkweed patches. I took the eggs home and when they hatched, I raised them through the larval stage (caterpillar), to total 16 monarch caterpillars. As each one formed its chrysalis, I placed it into either "regular light" or "light deprivation" conditions. I had one cage with regular exposure to light and one cage that was covered in a thin dark sheet to block out light, but which would still allow in some light. I measured the amount of time it took for the adult butterflies to emerge and found that those butterflies that were deprived of light seemed to spend a greater amount of time in the pupal stage.

**How Light Deprivation Affects Duration of the Pupal Stage in Monarch Butterflies**

| Chrysalis Number | Formed Chrysalis on | Total Duration of Pupa |
|------------------|---------------------|------------------------|
| 1                | Aug 9               | 11.5                   |
| 2                | Aug 13              | 11.5                   |
| 3                | Aug 13              | 11.5                   |
| 4                | Aug 17              | 11.5                   |
| 5                | Aug 17              | 11.5                   |
| 6                | Aug 17              | 11.5                   |
| 7                | Aug 17              | 11.5                   |
| 8                | Aug 17              | 11.5                   |
| 9                | Aug 20              | 11.5                   |
| 10               | Aug 20              | 11.5                   |

**Question**

How does light deprivation affect the length of the pupal stage in monarch butterflies?



**Hypothesis**

Light deprivation will take an effect on the length of the pupal stage in monarch butterflies.

**Procedure**

1. I collected monarch butterfly eggs weekly during the summer of 2015.
2. I raised these caterpillars through the larval stage of their life and when they pupated, I placed them into either "regular light" or "light deprivation" conditions.
3. I measured the amount of time it took for the adult butterflies to emerge and found that those butterflies that were deprived of light seemed to spend a greater amount of time in the pupal stage.



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