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Lab Report: Caterpillar to Butterfly Study

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# Question

How Can a Butterfly Change so much from a Caterpillar? This question was very interesting to me because I really like butterflies. I have always been curious how a caterpillar can change so much inside such a tiny chrysalides.

# hypothesis

My best guess at what factors helps caterpillars change are:

* Food
* Sleep
* Family
* Exercise
* The protective chrysalides shell to be safe
* How they are shaped (couldn’t be too fat {like a ball} or too skinny {like a noodle} or wouldn’t fit in chrysalides)

I think these things are most important factors because many of these things also helped me to grow and change from a baby to an eight year old; of course I didn’t need a chrysalides.

# PROCEDURE

To test my hypothesis I got a butterfly garden so I could hatch my own butterflies from caterpillars and watch and learn from how it happened. My butterfly hatching kit came with instructions and an activity guide. Here are the steps I went through:

1. Bought a butterfly garden kit with money I got from Christmas for $6
2. My mom ordered caterpillars on the internet with a coupon code and $5 shipping which I paid
3. The butterfly larvae (or caterpillars) came in the mail 10 days later
4. They came in a cup with food in the bottom already; the food included water for them.
5. Photographed larvae as they just arrived
6. Caterpillars ate for 10 days before first caterpillar hung upside down
7. 24 hours for full strength chrysalides to form
8. After 7 days first butterfly emerged
9. Allowed wings to dry for 10 hours
10. Tried to feed orange slice (wouldn’t eat)
11. Bought carnation flowers and added sugar solution for butterflies
12. Continue to observe butterflies living in my garden habitat today

# OBSERVATIONS

## Larvae Stage

* When the caterpillars first came they wouldn’t move at all (maybe because they were cold from the mail)
* Five caterpillars came together; they seemed to help each other like a family
* Every two days the caterpillars got noticeably fatter (see photos)
* The caterpillars pooped after about a day
* The caterpillars would sleep at night and would wake up around 8am and would go to bed around 8pm
* After they hooked themselves to the ceiling they would do sit-ups on the ceiling for exercise
* The five caterpillars ate pretty much all the food provided

## Chrysalides Stage

* The caterpillars crawled to the top of the cup and attached themselves from the ceiling of the cup to hang upside down
* They made multiple layers of silk to make their chrysalides shell thicker
* The chrysalides have a golden cap on them
* I didn’t see when they came out of their chrysalides because it was at night or while I was at school

## ButterFly Stage

* When they first emerged from the chrysalides a red liquid came out with them
* They would hang when they first came out to dry their wings
* The butterflies have two sets of wings
* Did not like orange slice, but did like sugar water on carnation
* Watched butter extend his tongue and drink (see photo)
* The wings of the butterfly were the same pattern as the skin of the caterpillar

# conclusion

From my experiment and observations I conclude that food, sleep, and exercise were the most important factors in changing from a caterpillar to a butterfly. It seemed family was not as important; I think one caterpillar could still become a butterfly without other caterpillars in the habitat. I also don’t think shape of the caterpillar played a role. The chrysalides didn’t seem to be for safety but rather as a liquid container to help in changing; maybe as a food source.

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