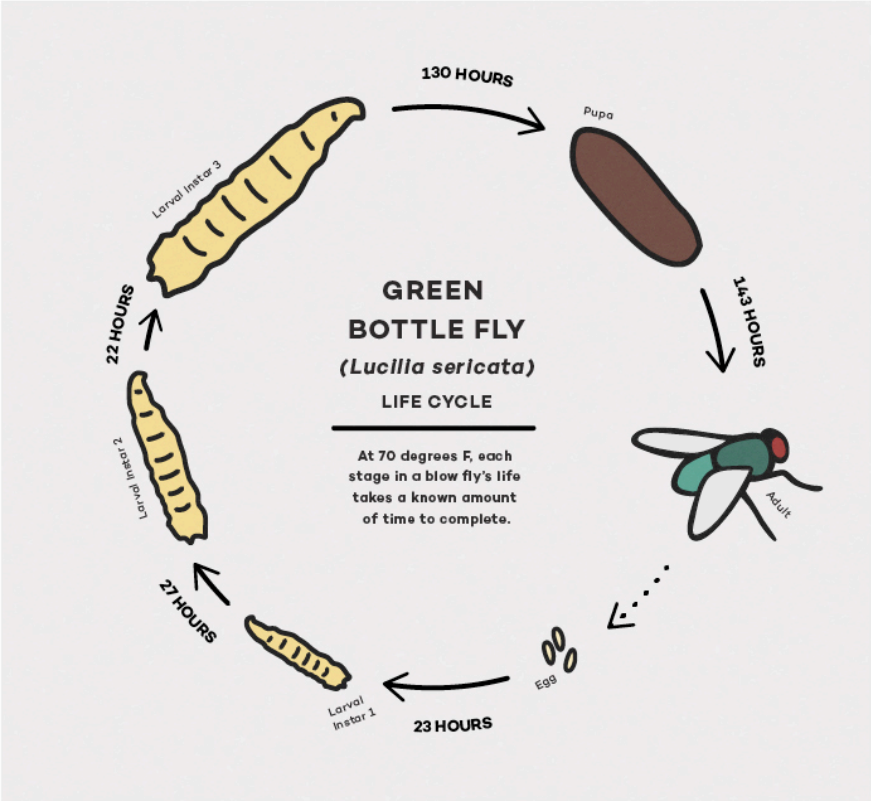
# Accumulated Degree Hour Data Sheet

## Equations

Thermal Energy = Hours × Temperature (°F)

Accumulated Degree Hours (ADH) = Previous Thermal Energy + Current Thermal Energy




**Calculate** the ADH of the green bottle fly life cycle at 70 °F. Refer to the green bottle fly lifecycle above for time spent in stage.

| Stage | Time Spent in Stage | Temperature (°F) | Thermal Energy | ADH | Total Time Since Eggs Laid |
|---|---|---|---|---|---|
| Egg | 23 hours | 70 | | | 23 hours |
| 1st instar | 27 hours | 70 | | | |
| 2nd Instar | 22 hours | 70 | | | |
| 3rd Instar | 130 hours | 70 | | | |
| Pupa | 143 hours | 70 | | | |



*Created by Educator Collaborator Jennifer O'Brien*

**Calculate** the ADH of the maggots in your control cup. Compare those values to the data provided for green bottle flies, and estimate the age of your maggots on the last day.

| Day Observed | Hours in Day | Local Daily Average Temperature ($^{o}$F) | Thermal Energy | ADH | Estimated Stage |
|---|---|---|---|---|---|
| Day 1 | 24* | | | | |
| Day 2 | 24 | | | | |
| | 24 | | | | |
| | 24 | | | | |
| | 24 | | | | |
| | 24 | | | | |
| | 24 | | | | |

**A day has passed since cup was placed outside*

## Analysis Questions

Based on your calculations, in what stage of development should the maggots in your control cup be on the last day of this experiment?

How precise do you think your calculations are? Why?

Does your calculation of the total ADH match the physical appearance of your maggots on the last day? For example, if your calculation corresponds to the ADH required to reach the 2nd instar, did you observe medium-size maggots?

What factors could have influenced the time the eggs were laid in the cup?