

Teacher's Entomology Worksheet

- What kind of information is provided on the Blow Fly Life Cycle handout?
 - different developmental stages for blow fly during its life cycle
 - images of blow flies at different developmental stages
 - hours required for the blow fly to develop from one stage to the next at a given temperature (i.e., 70 F)
 - or any other observations or inferences that students have made
- Calculate the heat/thermal energy required (accumulated degree hour) for each stage of the Green Bottle Fly's life cycle.

Table 1: ADH of Green Bottle Fly

From	To	Temperature	Hours	ADH (accumulated degree hour)
Eggs	First instar	70 F	23	70 X 23 = 1610 ADH
First instar	Second instar	70 F	27	70 X 27 = 1890 ADH
Second instar	Third instar	70 F	22	70 X 22 = 1540 ADN
Third instar	Pupa	70 F	130	70 X 130 = 9100 ADH
Pupa	Adult fly	70 F	143	70 X 143 = 10010 ADH

Total hours= 345 hrs. Total ADH = 24150

- Using the above Table 1 as the reference, calculate and fill in the blank areas.
 - How many hours does it take for a green bottle fly egg to become an adult fly?
345 hours Convert these hours to 14 days and 9 hours
 [note: 345/24 hrs = 14 days and 9 hours]
 - For a maggot at the beginning of the second instar stage how may hours does it take to reach the third instar if the ambient temperature is at 77 F? 20 hours.
 [From Table 1, the ADH needed for the development of second instar to third instar is 1540 ADH. Then, how long does it take to reach 1540 ADH at 77 F ?
 $1540/77 F = 20$ hours]
 - If you are rearing a Green Bottle Fly pupa, what temperature do you need to keep the pupa to have the adult fly merge in about 7 days? 59.6 F
 [From Table 1, the ADH required for the development of pupa to adult Green Bottle Fly is 10010 ADH. At what temperature, will the total ADH reach 10010 in 7 days?
 $7 \text{ days} \times 24 \text{ hours} = 168 \text{ hrs.}$
 $168 \text{ hrs} \times \text{Temp} = 10010 \text{ ADH} \rightarrow \text{Temp} = 10010 \text{ ADH} / 168 \text{ H} = 59.58, \text{ approx. } 59.6 \text{ F}$
 - Determine each of the following as a constant or a variable in an experiment:

	Constant	Variable
life cycle stages	X	
Temperature		X
time between the life cycle stages		X
ADH	X	

- Describe in your own words how insect life cycle can be used in estimating the time of death?
 Students describe how range of times associated with an insect's life cycle offer estimated time of death