



Tri-Valley Fly Fishers "Trout In Classroom"



TIC

How to Calculate When They Will Hatch

It is possible to predict when your trout eggs will hatch. The ambient temperature of the water they are in determines their incubation period. The colder the water is the longer it takes for them to hatch, and likewise the warmer the water the sooner they will hatch. If we know what the average temperature of the water is we can calculate the date they will hatch.

Fish need a predetermined amount of total heat absorption to hatch. This amount is measured in "Thermal Units" (TU's). One TU is defined as one degree Fahrenheit (above + 32°F) for 1 day (24 hours). Therefore, for every degree Fahrenheit the water temperature is above freezing the eggs absorb one TU. This means that a trout egg in water that is 52°F will absorb 20 TU's per day ($52 - 32 = 20$).

Different fish eggs need different amounts of total TU's to hatch. Our trout eggs in water that is in the range of 50 to 55°F need 555 TU's (total) to hatch. If the eggs spend part of their time in water that is one temperature, then another part of their time at another temperature then we need to calculate how many TU's they received at each temperature and add them together to determine the total number they have received during that time. Likewise, once we have calculated how many they have absorbed at one time we can simply subtract that from the total they need to determine how many more units they need to hatch (and predict, with relatively good accuracy, the date they will hatch).

Therefore, in order to calculate the day they will hatch we need the following:

1. The date the eggs were spawned.
2. The water temperature they were in when they were at the hatchery.
3. The number of days they were at the hatchery.
4. What date we received the eggs
5. What the average water temperature is in our aquarium.
6. How many total TU's the eggs need to hatch, which is 555.

NOW:

(See page 2 for a worksheet for calculating the hatch date.)

Find the water temperature at the hatchery.

Find the number of days they were at the hatchery (count the days between their "Spawn Date" & the delivery date).

Calculate: $[(\text{Hatchery Water Temp}) - (32)] \times [\text{number of days at the hatchery}] = \text{TU's (to delivery date)}$.

Then Calculate: $[555] - [\text{TU's (to delivery date)}] = \text{Additional TU's needed to hatch}$.

Next Calculate: $\text{TU's they receive in the classroom (Tank Temp. - 32 = \#Classroom TU's per day)}$.

Find how many days before they hatch: Divide (Additional TU's to hatch) by (#Classroom TU's per day).

This is the number of days before the eggs hatch at the current aquarium temperature.

Count this number of days from today's date on a calendar to give you the hatch date.



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TIX

Egg Hatch Date Worksheet

12 Easy Steps

Find and/or calculate data as follows:

- #1. Egg Spawn Date:(date fertilized – supplied by hatchery). _____
- #2. Date eggs were delivered: _____
- #3. Number of days at hatchery: (count on calendar). _____
- #4. Average water temperature at hatchery: (supplied by hatchery)**. _____
- #5. Calculate hatchery daily TU's: (#4) - 32 = _____
- #6. # TU's prior to delivery: (#5) X (#3) _____
- #7. Total number of TU's needed to hatch: (given) 555
- #8. Additional TU's needed to hatch: (#7) - (#6) = _____
- #9. Classroom aquarium temperature: (read thermometer) _____
- #10. Classroom TU's per day: (#9) - 32 = _____
- #11. Number of days to hatch: Divide (#8) by (#10) = _____
- #12. Hatch date: Count days (#11) from delivery (#2) on calendar _____

The eggs will hatch on (#12) _____

NOTES:

** If the eggs spend part of their time in water that is one temperature, then another part of their time at another temperature then we need to calculate how many TU's they received at each temperature and add them together to determine the total number they have received during that time.