Salmon in the Classroom

Monitoring Log - Daily

School:

Teacher:

Date	Temperature		Dead Fish		Live Fish		Feeding 1		Feeding 2		Cleaning
	°F	ATU °F	Eggs	Fry	Eggs	Fry	Time	Amount	Time	Amount	siphon, clean glass

Total _____

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ATU's

An **accumulated thermal unit (ATU)** is a unit of measurement used to describe the cumulative effect of temperature over time. The ATU calculation is the cumulative sum of the daily average temperature (in degrees Fahrenheit) exceeding 32°F. This calculation is used to determine healthy egg development and predict appropriate release dates.

Example: If eggs are kept at 48°F they will have a daily ATU of 16. The total ATU's will be about 600 on day 38.

Temperature Determines Growth Rate

The temperature in your tank determines and rate of development (or growth) of your salmon eggs. The warmer the water temperature, the faster the salmon will reach their next stage of development. The colder the water temperature, the slower the salmon eggs will develop.

1) **Measure Temperature Daily.** This daily temperature measurement can be added up to determine the growth rate of your salmon and when to expect different stages of development.

2) **Calculate ATU's.** Record Accumulated Thermal Units (ATUs) required to reach important embryonic developmental stages.

Stage	ATU's (°F)	
To Eyed	600	(if temperatures are maintained at 48 degrees F, then this should be by October 16, 2015)
To Hatch	900	(if temperatures are maintained at 48 degrees F, then this should be by November 4, 2015)
To Emergence	1200 -1400	(if temperatures are maintained at 48 degrees F, then this should be by November 29, 2015)
Begin Feeding	1800	(if temperatures are maintained at 48 degrees F, then this should be by December 31, 2015)

3) **Manage Growth.** Use the ATU's calculation to estimate when you should see each stage occur. You can maniputlate temperature to avoid major holidays or school breaks.

4) **Change Temperature Slowly.** Too fast of growth can cause defects, death and increases in biological waste, increasing tank maintenance time. Changes in water temperature that occur too quickly or fluctuate too widely are not healthy for developing salmon. When altering the temperature in your tank, avoid chages greater than 2 degrees Fehrenheit per day.