

**Inquiry Question:** Does the thermocline location vary throughout the summer months?

*Conceptual (Knowing)*

*Methodological (Doing)*

**Word List:**

Surface Temperature, Maximum Depth Temperature, thermocline, spring, fall, Central Erie Basin, colder, warmer

**Thinking Map or Graphic Organizer:**

*Please attach on the following page.*

**Hypothesis:**

If the surface temperature increases more than the maximum temperature at depth then a thermocline will be present.

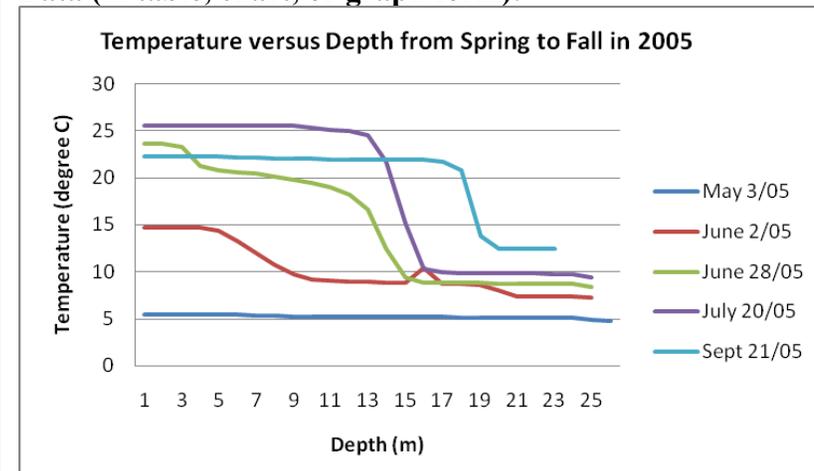
**Conclusion:**

The purpose of the study was to determine if a thermocline is present. The hypothesis stated that if the surface temperature increases more than the maximum temperature at depth then a thermocline will be present.

The data for the Central Erie Basin shows a seasonal thermocline is present during the months of June, July and September. As the water column gets warmer in September, the thermocline appears to be moving to a greater depth.

Notice the blip around 17 meters in the June 2/05 curve. This is probably due to an error or possibly a warm spot where a river is flowing in. Thermoclines act as a barrier to life since animals do not like sudden changes in temperature. It would be interesting to determine if the thermocline continues to move to greater depths, will the animals have a more difficult time living?

**Data (in table, chart, or graph form):**



**Websites used during Inquiry:**

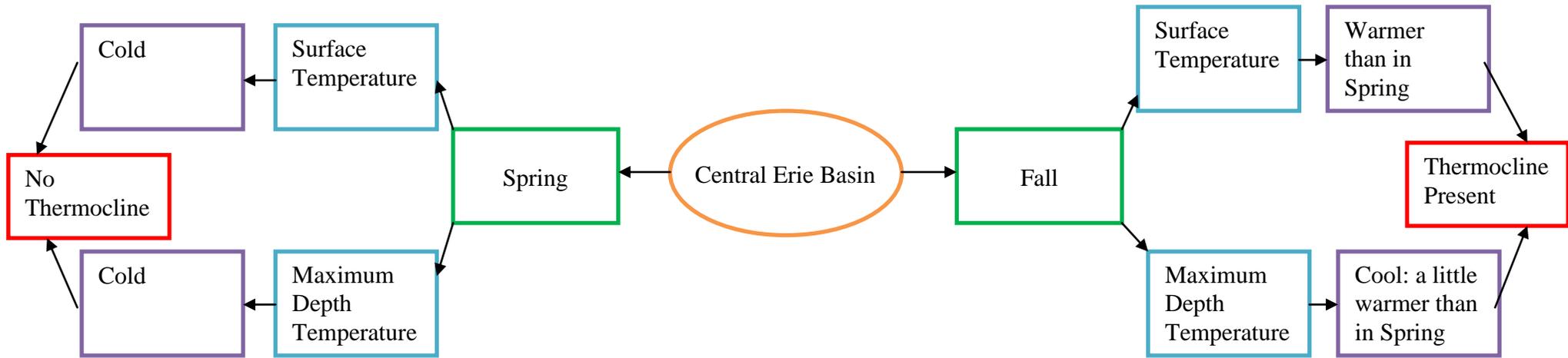
GLERL website <http://greatlakeslessons.com/mod/resource/view.php?id=85> August 6, 2008.

BBC Science and Nature: Animals, [http://www.bbc.co.uk/nature/blueplanet/infobursts/thermocline\\_bg.shtml](http://www.bbc.co.uk/nature/blueplanet/infobursts/thermocline_bg.shtml), accessed August 7, 2008.

Bobberstop.com Fishing Resources, <http://www.bobberstop.com/thermocline.html>, accessed August, 7, 2008.

## Thinking Map or Graphic Organizer:

Using a Double-Bubble Map for comparing and contrasting



Depth (meters)	Temperatures degrees C				
	May 3/05	June 2/05	June 28/05	July 20/05	Sept 21/05
1.00	5.403	14.632	23.64	25.548	22.265
2.00	5.403	14.63	23.611	25.548	22.267
3.00	5.408	14.637	23.3	25.552	22.264
4.00	5.4	14.606	21.265	25.556	22.265
5.00	5.388	14.261	20.802	25.554	22.225
6.00	5.383	13.208	20.635	25.548	22.153
7.00	5.332	11.941	20.427	25.54	22.11
8.00	5.277	10.706	20.119	25.54	22.077
9.00	5.221	9.67	19.781	25.511	22.037
10.00	5.21	9.195	19.452	25.354	21.995
11.00	5.203	9.067	19.023	25.152	21.98
12.00	5.193	8.99	18.241	24.979	21.961
13.00	5.183	8.928	16.658	24.493	21.953
14.00	5.166	8.874	12.4	21.758	21.949
15.00	5.159	8.82	9.337	15.184	21.944
16.00	5.154	10.446	8.852	10.229	21.938
17.00	5.15	8.706	8.799	9.891	21.755
18.00	5.141	8.673	8.773	9.852	20.796
19.00	5.136	8.608	8.75	9.821	13.753
20.00	5.127	8.084	8.74	9.795	12.506
21.00	5.114	7.4	8.735	9.773	12.47
22.00	5.113	7.376	8.723	9.75	12.46
23.00	5.11	7.372	8.695	9.722	12.455
24.00	5.108	7.368	8.655	9.702	
25.00	4.873	7.265	8.345	9.347	
26.00	4.776				