EARTH SCIENCE REGENTS
Connecticut River Profile Lab

NAME_____ /25

Use the data table below to construct a profile (make a graph) of the Connecticut River from it's mouth to it's source. You will need to decide how to orient your graph paper and which variable goes on which axis. Draw a "connect the dots" line and a "best fit" curve through the data points.

	Distance from Mouth	Elevation (above Sea level)
Point	(miles)	(feet)
Hartford	50	0
Foot of Enfield Rapids	60	10
Top of Dam	66	40
Top of Holyoke Dam	84	100
Railroad crossing	115	110
Turners Falls	120	175
Outlet of Ashuelot Res.	136	210
Westmoreland	159	220
Foot of Belows Falls	170	235
Top of Bellows Falls	170	280
Beaver Meadows	181	290
Windsor	196	300
White River Junction	209	340
Hanover	213	375
Oxford	230	380
Wells River	255	410
MacIndoes Falls	262	430
Lower Waterford	273	645
Head of 15 mile fall	285	830
North Stratford	312	885
West Stewartstown	344	1035
Connecticut Lake	361	1620
Second Lake	369	1880
Third Lake	375	2040

Use a different color for the 2 lines, and remember - NEATNESS COUNTS!

This exercise is easily, and neatly, done with a spreadsheet.

Just make sure you use a "scatter diagram" instead of a line graph.

(For EXTRA CREDIT, try both and explain why the line graph doesn't work)

You can use the spreadsheet's graphing utility to draw the "connect the dots" as well as the "best fit" lines - Excel calls best fit lines "trendlines".

Then answer these questions:

1. Which station is closest to the MOUTH of the river? _____

   Which is closest to the SOURCE? _____

2. In general, how does the gradient of the river change as one travels from the mouth to the source of the river?_____

   How does the graph support your answer?_____

   _____

3. Calculate the gradient of the stream between Third lake and Connecticut Lake. _____
   WORK:

4. Calculate the gradient between Wells River and Hartford. _____
WORK:

5. Calculate the gradient between Hartford and the Long Island Sound _____
(it's easy but you may have to think, because there is no data given for the mouth of the river).
WORK:

6. Calculate the average gradient between Third Lake and the Long Island Sound. _____
WORK:

7. There are several bumps, or "nickpoints" along the profile. What man-made features correspond to these nickpoints?_____

What natural features correspond to the nickpoints?_____

8. Draw small arrows pointing to the naturally occurring nickpoints.

9. Are the rocks at the falls resistant to weathering and erosion, or non-resistant?_____

Explain your answer:_____

_____

10. Is the gradient over falls and rapids greater or less than the gradient immediately upstream from them?_____

10A. Does the water speed up or slow down as it passes over falls and rapids?_____

10B.What happens to the water's ability to pick up and transport (erode) materials when it speeds up?_____

10C. If the dams were removed, and nature allowed to take its course, over a long time how would the profile of the river change?_____

_____

10D. Would the future profile look more like the "best fit" line you drew, or less like it?_____

EXPLAIN:_____

_____