

Plotting Phenology

Name _____

I. First bloom date for North American lilac shrubs

The data table below displays the yearly first bloom date (given as day of year) for lilac shrubs (i.e., *Syringa chinensis* clone) for two regions:

NE = Northeast (average day each year from Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, and New York)

LMW = Lower Midwest (average day each year from Kansas and Nebraska)

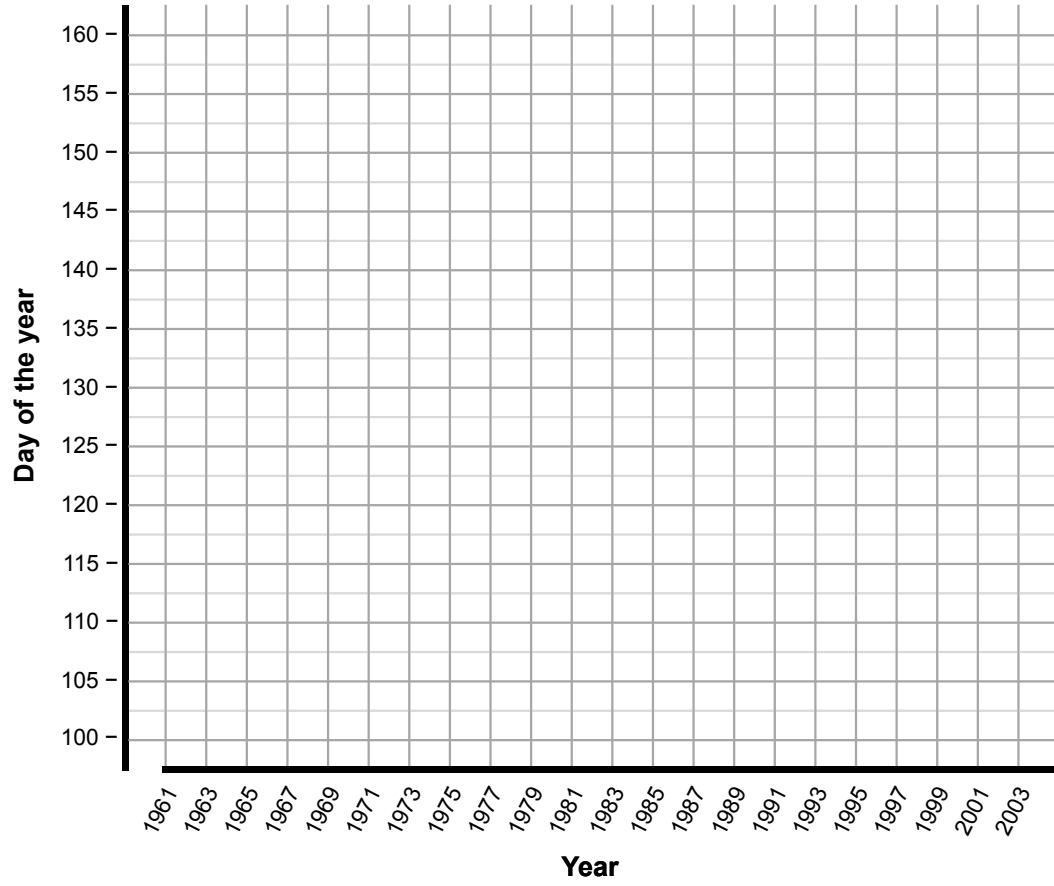
The data record spans from 1961 – 2003 and every other year is displayed below. The complete data set can be found on: ftp://ftp.ncdc.noaa.gov/pub/data/paleo/phenology/north_america_lilac.txt

Year	Region	
	NE	LMW
1961	--	126
1963	--	109
1965	142	121
1967	151	101
1969	138	123
1971	143	122
1973	133	129
1975	139	128
1977	129	110
1979	132	126
1981	131	102
1983	139	130
1985	126	--
1987	129	--
1989	138	126
1991	129	130
1993	135	134
1995	138	141
1997	145	137
1999	131	126
2001	130	129
2003	136	121

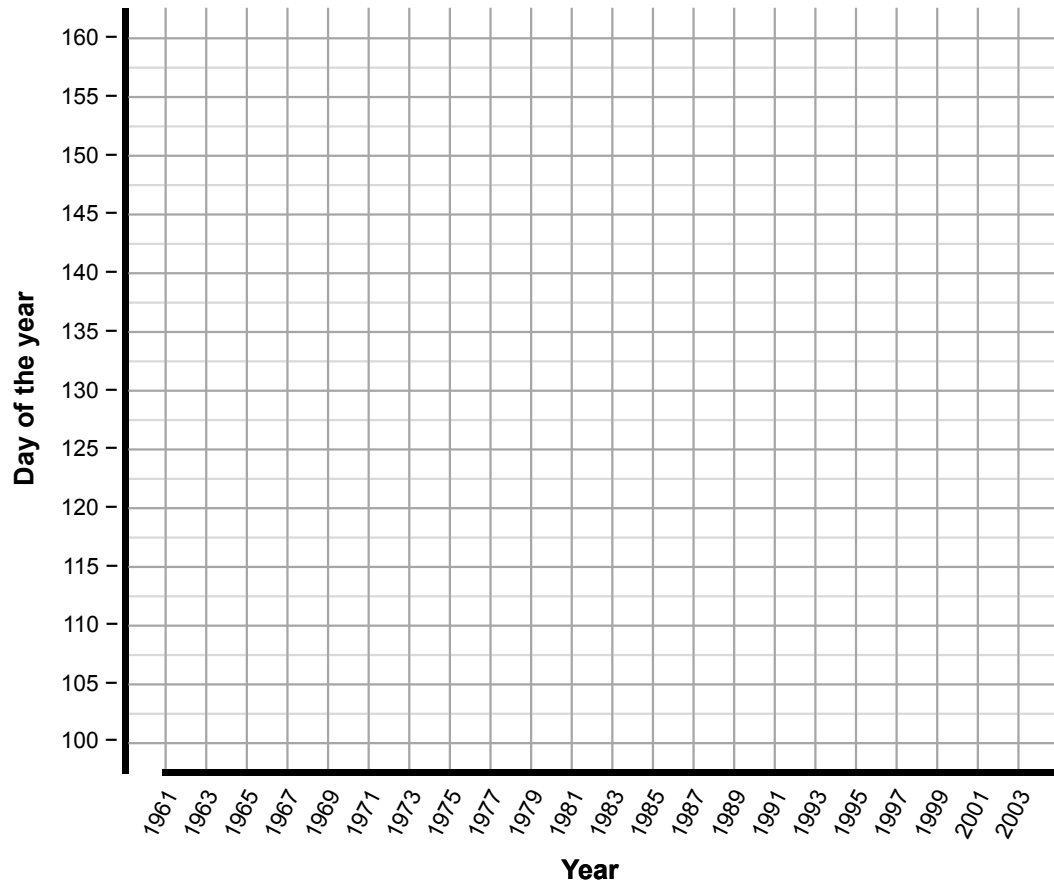
Activity

1. Plot the data for the northeastern states (NE) in graph 1.
2. Plot the data for the lower midwestern states (LMW) in graph 2.
3. Using a straight edge, estimate and draw a linear trend line that best fits the data in the graphs.

Graph 1.



Graph 2.



Discussion

1. Is the yearly first bloom date for lilac shrubs changing over time?
2. Does the trend differ between regions? If yes, then describe the difference(s) you see.
3. Would you draw the same conclusions if you just looked at a period of 5 years, for example, 1980 – 1985?
4. Why might the yearly first bloom date for lilac shrubs be changing over time?
5. Do you think this might have implications for other organisms like birds or insects?

II. Ice cover duration on Gull Lake in Michigan

The data table below shows the number of consecutive days that Gull Lake was fully covered in ice from 1925 – 2011.

Year	Duration
1925	95
1930	0
1935	91
1940	89
1945	105
1950	78
1955	107
1960	122
1965	61
1970	98
1975	51
1980	89
1985	95
1990	43
1995	91
2000	95
2005	31
2010	71
2011	5

Activity

1. Create a line graph (i.e., plot the data and connect the data points with a line) of the ice cover data from the table above.

Graph 3.

