

### *The Timing of Fruit Production in Wild Strawberry Plants*

Each year, in order to reproduce, many species of angiosperms form flowers that, when pollinated, may produce fruit. Environmental cues, such as the temperature, amount of precipitation and the length of daylight can affect the timing of the first blooms and formation of ripe fruit. Animals in the ecosystem rely on this fruit as a food source and, therefore, are affected by its availability. In this activity, you will use the data provided to explore the timing and length of the fruit production of wild strawberries in northern New England.

#### **Do wild strawberry plants produce fruit at the same time each year?**

*Signs of the Seasons* observers in Maine and New Hampshire have been recording the days when fruit are visible on wild strawberry plants. Create a graph that compares fruit presence by year. A box plot for each year is one possible way to compare them.

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**2011:** 155, 155, 155, 155, 160, 164, 166, 166, 166, 166, 178, 178, 178, 180, 182

**2012:** 120, 138, 143, 145, 155, 159, 161, 166, 169, 169, 179, 185, 187, 176, 201

**2013:** 133, 148, 151, 155, 155, 159, 164, 164, 172, 174, 187, 188, 202

**2014:** 155, 157, 162, 162, 162, 166, 170, 170, 173, 173, 173, 177, 177, 180, 180, 180, 195

*Data from the Nature's Notebook Database; recorded days of fruit presence per site*  
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#### **Analysis**

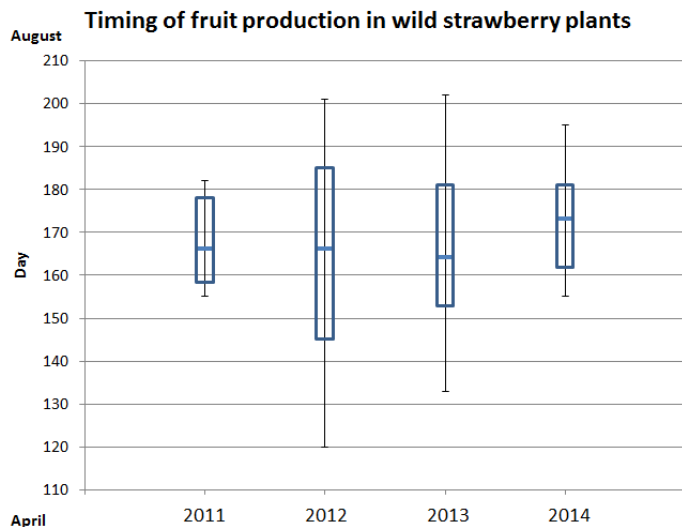
1. What does the graph suggest about the yearly availability of strawberries as a food source?

2. What are some similarities between the years? What are some differences?

3. In which year was fruit available for the longest period of time?

**Do wild strawberry plants produce fruit at the same time each year?**

The box plot shows that strawberry production does not occur at exactly the same time each year, though the majority of strawberries appear at about the same time. In 2012 and 2013, fruit was available for a longer period of time than the other two years.



Year	2011	2012	2013	2014
Min	155	120	133	155
First Quartile	155	145	153	162
Median	166	166	164	173
Third Quartile	178	185	181	179
Max	182	201	202	195

**Extension:** *Why is a box plot an appropriate way to display this information?*

A box plot allows us to compare the variability of multiple data sets and to examine variability within each group of data points. The 2012 and 2013 data sets have a larger range than the other two years.

**Extension:** *How might a wider availability of food affect other organisms in the ecosystem?*

Any organism that feeds on the strawberries would have an available food source for a longer amount of time. This would provide more energy to that organism for growth and reproduction. Therefore, an increased amount of available strawberries could increase the health and size of populations of dependent organisms.

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