Disappearing Honeybees

Purpose: Students will use data to create a graph illustrating the rise and decline of the bee population in the U.S. and in Minnesota.

Time: 30 minutes

Grade: 4-5

Materials:

- Blank paper and graph paper
- Colored pencils or markers

Minnesota K-12 Science Standards and Benchmarks

5.1.3.4.1 Use appropriate tools and techniques in gathering, analyzing and interpreting data.

5.4.4.1.1 Give examples of beneficial and harmful interaction with natural systems.

Minnesota K-12 Math Standards and Benchmarks

4.4.1.1 Use tables, bar graphs, timelines and Venn diagrams to display data sets. The data may include fractions or decimals. Understand that spreadsheet tables and graphs can be used to display data.

5.4.1.2 Create and analyze double-bar graphs and line graphs by applying understanding of whole numbers, fractions and decimals. Know how to create spreadsheet tables and graphs to display data.

Background

Pollinators are important to us. Without pollination, one-third of the foods we are accustomed to eating could not grow. This includes the majority of fruits, many vegetables (or their seed crops) and even legumes such as alfalfa and clover, which are fed to the livestock we eat as meat.

Many of the foods we grow and eat in the US are from crops that first grew in other parts of the world. Some of these foods depend on another import for pollination – the domestic honeybee.

The Spanish brought the first European honeybee colonies to the Americas in the 16th Century. English Colonists brought more honeybees in 1622. Soon honeybees had escaped into the wild and were buzzing all over North America.

Procedure

1. Use the blank paper and/or graph paper to create a graph that illustrates the number of bee colonies in the U.S. and Minnesota from 1987 to 2013. Graph options could include stem and leaf graph, line graph, frequency table, bar graph, circle graph.
2. Using the graph you created, answer the following questions:
    a. When was the number of bee colonies in the U.S. the largest? When was the number largest in Minnesota?
    b. When was the number of bee colonies in the U.S. the smallest? When was the number smallest in Minnesota?
    c. Is the current bee population in Minnesota increasing or declining? In the US?
    d. What are some possible reasons for the change in colonies throughout the last 26 years?
    e. What are current factors that affect the bee population?

Additional Activities

- Have students research the current factors that are negatively affecting the bee population.
- Plant bee and pollinator friendly plants and flowers in your community or on your school grounds
- Invite a local apiary or bee keeper to demonstrate and explain the process caring for bees.
- Use the USDA and NASS's information at http://quickstats.nass.usda.gov/ to find bee populations for additional years, states or regions of the United States

Adapted from Oklahoma Agriculture in the Classroom

Inventory of Bee Colonies

Year	MN	US
2013	130,000	2,640,000
2012	125,000	2,539,000
2011	120,000	2,491,000
2010	128,000	2,692,000
2009	122,000	2,498,000
2008	122,000	2,342,000
2007	130,000	2,443,000
2006	125,000	2,394,000
2005	120,000	2,409,000
2004	135,000	2,554,000
2003	120,000	2,599,000
2002	117,000	2,574,000
2001	135,000	2,550,000
2000	150,000	2,622,000
1999	145,000	2,652,000
1998	140,000	2,637,000
1997	145,000	2,631,000
1996	150,000	2,581,000
1995	165,000	2,655,000
1994	170,000	2,783,000
1993	180,000	2,875,000
1992	190,000	3,045,000
1991	180,000	3,211,000
1990	170,000	3,220,000
1989	165,000	3,528,000
1988	160,000	3,370,000
1987	160,000	3,316,000

Source: National Agricultural Statistics Service http://quickstats.nass.usda.gov/