

Investigation Project

Title: For the Birds: The Impact of Food and Feeders on Attracting Songbirds

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- **Testable Question:** What is the best kind of food and feeder to attract the most birds?
 - **What I changed (Independent variables):** type of bird feeder, type of food
 - **What stayed the same (Controlled Variables):** location of feeders, amount of food
 - **What I measured: (Dependent variables):** the number of birds who visited each feeder
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Research:

There are lots of birds in the state where I live. I did an internet search and found out that northern cardinals, goldfinches, titmice, chickadees, jays, grackles, and nuthatches are just a few of the types of birds I might see in our area. <http://www.berkscountyweb.com/Birds/index.htm>

What is the best type of food to put in a bird feeder to attract the most birds? I did some research using resources from the National Audubon society <http://www.audubon.org/> to find out more about bird watching. I learned that different birds prefer different feeders and different food. Types of bird feeders include:

- ground feeders (screen bottom trays that sit several inches off the ground or on a deck)
- sunflower-tube feeders that hang off the ground
- suet feeders that have a pudding like food with seeds and hang off the ground
- hopper feeders (bird hopping on the feeder triggers the release of seeds)
- thistle feeders (contain tiny holes that make seed available to only small beaked finches)

After reading about the feeders I discovered that suet should be avoided during hot weather because it can turn rancid. Ground feeders should be placed in open areas at least 10 feet from the nearest tree or bush so that birds have a chance to flee predators. Tube feeders should have a metal port around the seed dispensers to protect the food from squirrels. Doves, sparrows, goldfinches and cardinals tend to like ground feeders. Chickadees, titmice, nuthatches and goldfinches tend to like tube feeders. Jays, grackles, and red-winged blackbirds and cardinals tend to frequent hopper feeders. Goldfinches and redpolls tend to like thistle feeders.

I read more about food and learned that sunflower seeds, millet, cracked corn, oats, thistle and peanuts are all foods that birds might eat. I decided not to use peanuts because I am allergic



to peanuts. When I learned how expensive thistle was, I decided to go with other options. I also did not want to run the risk of food rotting, so I did not choose cracked corn or suet.

In the end, I decided the best foods to use might be hulled sunflower seeds (to attract jays, goldfinches, cardinals, chickadees, titmice, nuthatches, and grackles), millet (to attract sparrows, red-winged blackbirds, and a seed mixture to attract a great variety of songbirds).

Hypothesis:

If a mixture of bird seed is used then more birds will be observed.

Why I think so:

I think this because research says that certain birds like certain foods so increasing the food variety will increase the variety of birds that will come to that feeder.

Materials:

- binoculars
- bird feeders (ground feeder, hopper feeder, and tube feeder)
- millet
- hulled sunflower seeds
- bird seed mixture (sunflower seeds, millet, oats)
- watch/timer

Procedure:

1. Set up bird feeders outside the wooded area near our school. Include 3 ground feeders (one with hulled sunflowers, one with millet, one with a mixture); 3 hopper feeders on poles (one with hulled sunflowers, one with millet, one with a mixture); and 3 tube feeders hung from nearby trees (one with hulled sunflowers, one with millet, one with a mixture).
2. Over a time span of 2 weeks (10 school days) observe the feeders for 20 minutes during lunch time.(12:00 pm)
3. Record the total number of birds and the feeders from which they eat. Use a group of friends to help make the observations. Refill the feeders as necessary.



Data Table:

Ten Day Record of Birds Visiting the Feeders										
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Ground feeder sunflower	2G	1C	NONE	NONE	1C	3G	1C 1G	1C	1C	1C
Ground feeder millet	NONE	NONE	NONE	1RB	NONE	NONE	NONE	NONE	NONE	1RB
Ground feeder mixture	1G	1C	NONE	1G	1G	1C	2G	3G	4G	5G
Hopper feeder sunflower	1G	NONE	NONE	2GR	2CH	1J	1GR	1C 2GR	2G	1GR 3G
Hopper feeder millet	NONE	NONE	NONE	NONE	1RB	NONE	NONE	NONE	1RB	NONE
Hopper feeder mixture	NONE	1GR	NONE	NONE	1GR	1J	1C	1J	2GR	1J 1GR 1RB
Tube feeder sunflower	1N	1C	NONE	1G	1G	1G 1N	NONE	2G 1N	1G 2CH	1G
Tube feeder millet	NONE	NONE	NONE	NONE	1RB	NONE	NONE	NONE	1RB	NONE
Tube mixture	NONE	NONE	NONE	1G	1C	1N 3G	2N 3CH	1T 1N	2N 1G	1C 3G
Total number of birds that visited*	4	3	0	5	6	6	8	9	12	9

*Note: Some birds went to multiple feeders

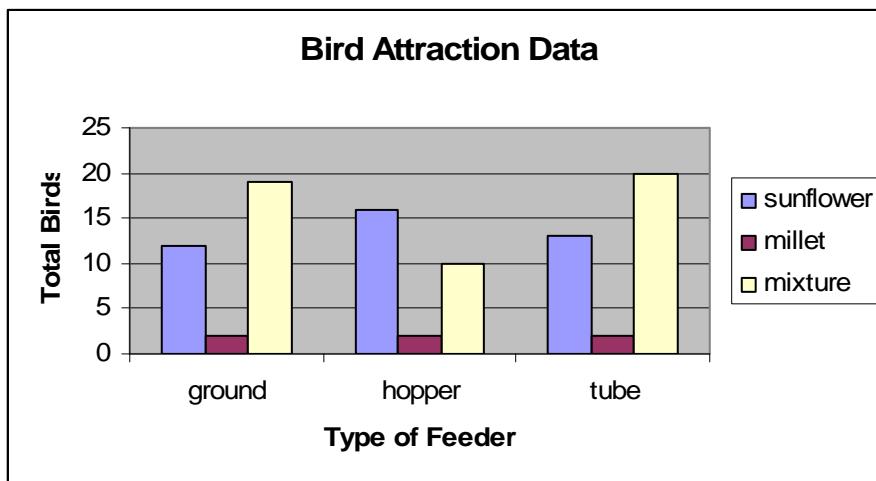
Key:

N=nuthatch, C=Cardinal, G=goldfinch,
GR=grackle, RB= red-winged blackbird, CH=chickadee

Qualitative Observations:

Some birds started at one feeder then went to another feeder. On Day 3 it rained heavily. Very few birds appeared to eat the millet no matter which type of feeder was used.





Mean Average of Total Visiting Birds over 10 Days:

Feeders with sunflower seeds only- Mean=13.66

Feeders with millet only- Mean =2

Feeders with mixture-Mean=16.33

Results/Conclusions:

I began the investigation wondering, *What is the best kind of food to put in a birdfeeder to attract the most birds?* I was not sure if birds would prefer to go to a feeder that only had the one type of food they like or if they would be just as willing to pick through a mixture of foods to get the food they like. I used a variety of feeder types because I wanted to make sure that a variety of birds would feel comfortable.

Data collection for this investigation was tricky. As the ten days progressed, more birds began to visit the feeders. It was helpful to have a group of observers watch rather than just one observer. The observers tried to observe the path of only one or two birds so that we did not count birds too many times.

The data collected supported my original hypothesis. If you use a variety of feeder types and a mixture of food, then the total number of birds you may observe over ten days will be more than if you just have feeders with one type of food in them. The mean number of total birds I observed during a ten day period when the feeders had a mixture of seed in them was 16.33. This mean was higher than the feeders that only had one type of seed in them (sunflower mean=13.66; millet mean only 2).

