In agricultural fields in the southern United States, barn owls are often used as a natural way to control rodent populations, called *biological pest control*. Owls are an important predator that help balance ecosystems by keeping prey populations under control. Since there are no places for owls to roost or nest in these fields, artificial nestboxes are constructed and hung for them.

Caroline Efstathion, an aviculturist and researcher, conducted an experiment where 60 nest boxes were erected. To determine if decreasing the amount of insect parasites in nestboxes would increase chick survival, a bird-safe insecticide was applied inside the box. Many of these blood-sucking insects can cause discomfort and even transmit diseases, called vector-borne diseases, to the nestling owls. Half (30) of the nest boxes were sprayed with an insecticide and the other half (30) were left untreated. Boxes were checked once a week. Nestlings were monitored until they fledged (left the nest). The number of nestlings fledged was recorded for each nest box.

Write the main research question the researcher was trying to answer: _____

_____

Write the hypothesis you think the researcher is testing with this experiment: _____

_____

Your task: In small groups, review the data and do your best to make sense of it. Identify similarities and differences among the data and look for patterns. Make note of your group's observations below.

Spring	# nest attempts	# nests hatched	# nest fledge	# eggs laid	# eggs hatched	# chicks fledged
Treated	8	7	7	47	35	18
Untreated	21	17	15	92	67	40
Total	29	24	22	139	102	58

Fall	# nest attempts	# nests hatched	# nest fledge	# eggs laid	# eggs hatched	# chicks fledged
Treated	24	21	20	118	75	60
Untreated	16	16	9	71	39	22
Total	40	37	29	189	114	82

Write your group's observations here:

Data Analysis: You will now calculate the following based on the data provided. Here is some information to help clarify the data you will be analyzing:

% nests hatched = how many nests contained eggs that hatched
% nests fledged = how many nests contained chicks that fledged
% egg hatched = how many eggs hatched out of all that were laid
% chicks fledged = how many chicks left the nest out of those that hatched

2014	% nests hatched	% nests fledged	% eggs hatched	% chicks fledged
Spring				
Fall				

Conclusions: Based on your data analysis, consider the following questions.

1) Why is the % nests hatched data important? _____

_____

How could studying this help conservation? _____

_____

2) Why is the % nests fledged data important? _____

_____

How could studying this help conservation? _____

_____

3) Why is the % eggs hatched data important? _____

_____

How could studying this help conservation? _____

_____

4) Why is the % chicks fledged data important? _____

_____

How could studying this help conservation? _____

_____