



**Science Grade 8
Scoring Guide for
Released Item 13
Birds to Control Insects
Fall 2007**



ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER DOCUMENT.**13 Constructed Response
(3 points)**

An insect causing crop damage was the main food source for a native bird population. These birds were not eating enough insects to prevent crop damage. Farmers decided to introduce a non-native bird species to help control the insects.

- Explain the effect this would most likely have on the insects causing crop damage.
- Explain the effect this would most likely have on the native bird population.
- What advantage does introducing non-native animals have over the use of chemical pesticides?

NOTHING WRITTEN IN THIS TEST BOOKLET WILL BE SCORED.

Science Rubric for Birds to Control Insects

Scoring Guide:

Statements similar to the following for each bullet.

Bullet 1: (0 to 1 points)

The population of the crop damaging insects would decrease (do not award a point for stating the population would become extinct).

Bullet 2: (0 to 1 points)

- The native bird population would be reduced (not become extinct).
- Native bird count would be reduced in its present habitat.
- Native birds would need to switch to alternative food sources.

Bullet 3: (0 to 1 points)

- The non-native bird species would target the crop-damaging insect; a chemical pesticide could kill or injure other beneficial insects and other organisms.
- The non-native bird species would not cause pollution like a chemical pesticide.
- The non-native bird species would not build up in the environment like a chemical pesticide.
- The non-native bird species would pose less of a health risk to humans and other animals than a chemical pesticide.

Anchor Paper 1 – Score Point 3

There will be less crop damage caused by insects, because there will be less insects. The native birds won't have as many insects to eat, so they could starve and become endangered or extinct. The advantage of introducing non-native animals over chemical pesticides are that the crops will be healthier and it won't poison the native birds as well.

Anchor Paper 1 Score Point 3

The student correctly explains that the introduction of a non-native bird species would most likely cause the insect population to decrease (*there will be less insects*), correctly explains that the introduction of a non-native bird species would most likely cause the native bird population to decrease due to the loss of their food source (*The native birds won't have as many insects to eat, so they could starve and become endangered*), and correctly identifies an advantage the introduction of non-native animals has over the use of chemical pesticides (*it won't poison the native birds as well*). The response, *"the crops will be healthier,"* is insufficient to answer the question on its own because it is not clear what *"healthier"* means (more nutrients? less harmful?) so the advantage is unclear. However, this does not detract from the demonstration of understanding already given that non-native birds would target the crop-damaging insects, while chemical pesticides could poison other organisms (the native birds).

Note: Extinction would include all members of a particular species, not just those living in the area where the non-native birds are released so it is not an acceptable response for describing the effect the non-native birds would have on either the insect or the bird population. However in this response, extinction is not given as the only or absolute outcome to the introduction of non-native birds, so it does not detract from the understanding also demonstrated.

Anchor Paper 2 – Score Point 2

More of the insects would be eaten. The native bird would have to fight the new bird for food. The non-native animal might be going extinct and by moving it could increase the population.

**Anchor Paper 2
Score Point 2**

The student correctly explains that the introduction of a non-native bird species would most likely cause the insect population to decrease due to increased predation (*More of the insects would be eaten*) and correctly explains that the introduction of a non-native bird species would most likely cause competition between the two bird species (*The native bird would have to fight the new bird for food*). The response, "*The non-native animal might be going extinct and by moving it could increase the population,*" does not identify an advantage the introduction of non-native animals has over the use of chemical pesticides so it is unacceptable.

Anchor Paper 3 – Score Point 1

The crop damage would be reduced if a non-native bird species were to be introduced. The native bird species, however, would also be reduced because the non-native birds would steal all of their food.

**Anchor Paper 3
Score Point 1**

The student correctly explains that the introduction of a non-native bird species would most likely cause the native bird population to decrease (*The native bird species, however, would also be reduced*). The response, *“The crop damage would be reduced,”* does not explain that the introduction of a non-native bird species would most likely cause the insect population to decrease, so it is unacceptable. Stating the effect on the crops is not sufficient to demonstrate understanding that the birds will be eating the insects and reducing their population.

Anchor Paper 4 – Score Point 0

The Insects would dwindle to nothing as with the native birds. It is better for the environment to have the bugs naturally exterminated.

**Anchor Paper 4
Score Point 0**

The response demonstrates no understanding of the task. The response, “*The Insects would dwindle to nothing as with the native birds,*” is unacceptable. This is an absolute statement that both the insect and native bird populations would become extinct or “*dwindle to nothing.*” The response, “*It is better for the environment to have the bugs naturally exterminated,*” is insufficient to answer the question because it is not clear what “*better for the environment*” means. Compare with Anchor Paper 3 which demonstrates understanding that natural extermination methods are better because chemical pesticides pollute.