Name *SAMPLE STUDENT RESPONSE*

Argument Tool

Activity 4.4

Question

What is the question that you are investigating?

Has the zebra mussel had a positive or negative effect on the Hudson River ecosystem?

Claim A	Claim B
What is a claim you could argue? *The zebra mussel had a positive effect on the Hudson River ecosystem.*	What is a claim you could argue? *The zebra mussel had a negative effect on the Hudson River ecosystem.*
The evidence that supports this claim is . . . *. . .even though the rotifer (zooplankton) population decreased when the zebra mussels first arrived, it is starting to go back up now that the zebra mussel population has started decreasing. Between 2000-2013 the population average for rotifers went from 161/L to 186/L, while the zebra mussel population went from 1300/m^2 to 1085/ m^2.*	The evidence that supports this claim is . . . *. . .the rotifer (zooplankton) population is much smaller than it was before the zebra mussels arrived. There used to be 1,000-2,000/L and after the zebra mussel arrived it dropped to less than 200/L. The number of open water fish was 10.35 million before the zebra mussels arrived. It fell to 5.24 million after the zebra mussels arrived. Between 2000 and 2013 the number of open water fish has continued to fall and is now at 3.34 million.*

Scientific Reasoning: Evaluating the Evidence and Claim

Critique the quality and strength of the evidence that supports this claim. *Even though the rotifer population is a little higher, it has not gone up enough to show that the ecosystem has recovered or that the zebra mussel has had a positive effect. The number of open water fish has not recovered.*	Critique the quality and strength of the evidence that supports this claim. *The rotifer population had decreased significantly, and this means that other planktoneaters like fish and native mussels do not have as much food. The number of open water fish has continued to go down even when the zebra mussel population has been reduced.*

Argument Tool
Continued

Name *SAMPLE STUDENT RESPONSE*

Activity 4.4

Constructing a Scientific Argument

Decide which claim you think is best supported by the evidence and scientific reasoning. Using the criteria below and the information in the boxes you have completed, write a scientific argument that includes:

- The scientific question
- Your claim (that is best supported by evidence and reasoning)
- Relevant evidence that supports your claim
- Scientific reasoning that critiques the evidence and evaluates your claim

Scientific Argument

Has the zebra mussel had a positive or negative effect on the Hudson River ecosystem?

My claim is that the zebra mussel has had a negative effect on the Hudson River ecosystem. The evidence that supports this claim is that the rotifer (zooplankton) population is much smaller than it was before the zebra mussels arrived. There used to be 1,000-2,000/L and after the zebra mussel arrived it dropped to less than 200/L. Even though the rotifer population has increased a little since 2000 (from 161/L to 186/L) the population is still much smaller than it used to be. The number of open water fish was 10.35 million before the zebra mussels arrived. It fell to 5.24 million after the zebra mussels arrived. Between 2000 and 2013 the number of open water fish has continued to fall and is now at 3.34 million even though the zebra mussel population has decreased during this time. My scientific reasoning is that the decrease in the rotifer population means that all predators that eat zooplankton, such as native fish and mussels, will therefore have less to eat and their populations will decline. Therefore, this is the claim that fits best with all of the data on zebra mussels and rotifer populations.

Critique of the Rebuttal

Other people might claim _____ . I think the problem with this argument is _____.

Other people might claim that the zebra mussel has had a positive effect on the Hudson River ecosystem. Ithink the problem with this argument is that there is more evidence of negative effects, like the rotifer population decreasing, than there is evidence of positive effects, like the fact that the rotifer population is starting to increase a little bit.