

Rubric (adapted from McNeill and Krajcik 2012)

How are structure and function related in living things?			
Component	Level		
	0	1	2
Claim regarding structure and function argument	<p>Claim is inaccurate</p> <p><i>Structure and function are related because animals are probably on a task and they might need a group.</i></p>	<p>Claim is accurate but incomplete.</p> <p><i>They have several parts which makes a structure and each part is helpful and needed.</i></p>	<p>Claim is accurate and complete.</p> <p><i>One way a function is related to a structure is that a function can be performed by a structure on the animal or a behavior that the animal does.</i></p>
Scientific data that supports the claim. The data needs to be appropriate and sufficient to support the claim.	<p>Evidence is not included or evidence does not match the claim.</p> <p><i>For example, the cages in class have animals that have what they need.</i></p>	<p>Provides appropriate, but insufficient evidence to support claim.</p> <p><i>A snail needs its shell for the protection .The fish needs gills to breathe, a mouth to eat, fins to swim and eyes to see. They each have something that is very useful and needed.</i></p>	<p>Provides appropriate and sufficient evidence to support claim.</p> <p><i>A frog has two webbed feet, a structure, to perform the function of moving. For getting food, a frog has a mouth, a structure that it uses to get food into its system.</i></p>
A justification that links the claim and evidence and includes appropriate and sufficient scientific principles to defend the claim and evidence.	<p>Does not provide reasoning, or only provides reasoning that does not link evidence to claim.</p>	<p>Repeats evidence and links it to the claim.</p> <p>May include some scientific principles, but not sufficient.</p> <p><i>For it to survive the creature must eat, breathe, protect, and find shelter. The animals we saw in class functioned by doing these things.</i></p>	<p>Provides accurate and complete reasoning that links evidence to claim.</p> <p>Includes appropriate and sufficient scientific principles.</p> <p><i>Structure is a natural or man-made object that is made to serve a certain task. One of the criteria the object must meet is that it must serve a purpose. If the object looks pretty, but does not do anything, it is not considered a structure.</i></p> <p><i>A function is something that every living thing does. Rocks do not perform functions. Therefore they are not living things.</i></p>

McNeill, K.L., and J. Krajcik. 2012. *Supporting grade 5–8 students in constructing explanations in science: The claim, evidence and reasoning framework for talk and writing*. New York: Pearson Allyn & Bacon.