

PERFORMANCE TASK RUBRIC

LESSON 26



Part 1 Question 2 Task Rubric

INFO-H4: Evaluate the validity and reliability of and/or synthesize multiple claims, methods, and/or designs that appear in scientific and technical texts or media reports, verifying the data when possible.

ESS3.A-H2: All forms of energy production and other resource extraction have associated economic, social, environmental, and geopolitical costs and risks as well as benefits. New technologies and social regulations can change the balance of these factors.

SPQ-H1: The significance of a phenomenon is dependent on the scale, proportion, and quantity at which it occurs.

	Emerging	Developing	Proficient
Sample Student Response	<p>I think Media Claim 14 is misleading. It says that avoiding meat and dairy are the single biggest ways to reduce your impact on Earth. I think that is misleading because while the dairy industry for example does have some costs and benefits associated with it, there are other industries that produce more greenhouse gases for example.</p>	<p>I think Media Claim 14 is misleading. I think media claim 14 is misleading. It says that avoiding meat and dairy are the single biggest ways to reduce your impact on Earth.</p> <p>The dairy system has a number of costs and benefits. One of the benefits we found was how the system can produce dairy products for people. But one of the costs we found was that it emits greenhouse gases.</p> <p>One of the ways we found to compare the impact of the dairy industry to other industries is to compare their greenhouse gas emissions. Even though the contribution of livestock is small (5.8%), it does still produce some methane and carbon dioxide that participate in the greenhouse effect. But it is much less than the greenhouse gas emissions worldwide for electricity production (41.7%) and for transit (16%), for example, according to Our World in Data.</p>	<p>I think Media Claim 14 is misleading. I think media claim 14 is misleading. It says that avoiding meat and dairy are the single biggest ways to reduce your impact on Earth.</p> <p>The dairy system has a number of costs and benefits. One of the benefits we found was how the system can produce dairy products for people. But one of the costs we found was that it emits greenhouse gases.</p> <p>One of the ways we found to compare the impact of the dairy industry to other industries is to compare their greenhouse gas emissions. Even though the contribution of livestock is small (5.8%), it does still produce some methane and carbon dioxide that participate in the greenhouse effect. But it is much less than the greenhouse gas emissions worldwide for electricity production (41.7%) and for transit (16%), for example, according to Our World in Data.</p>



		So overall even though there is some partial truth to Media Claim 14, I think it is overall misleading and missing context.	<p>Another cost we found was that the dairy system, especially when growing monocultured crops for feed, can have a negative impact on biodiversity. According to the London School of Economics, biodiversity loss is mostly caused due to habitat loss and pollution. We know the dairy industry creates water and air pollution from manure runoff and fertilizer and pesticide use for growing monoculture crops. And these monoculture crops also do not provide much habitat for wildlife. But practices such as grazing or rotational grazing can improve habitats, decrease pollution, and lead to less biodiversity loss.</p> <p>So overall even though there is some partial truth to Media Claim 14, I think it is overall misleading and missing context.</p>
How to Achieve This Level	Student completes 0-1 out of 4 Look Fors	Student completes 2-3 out of 4 Look Fors	Student completes 4 out of 4 Look Fors

Part 1 Question 2 Look Fors	Prompts to Support Students in Improving on Look Fors
Student evaluates the claim and states if the claim is accurate, inaccurate, or misleading.	How did you evaluate the claim?
Student describes the scale of the impact of the dairy system compared to other industrial systems.	What quantitative data did you use to compare the environmental impacts of the dairy and/or agricultural industries compared to other industries?
<p>Student explains the costs and benefits of the dairy system overall, including economic, social, environmental, and/or geopolitical costs and benefits. Students uses at least two costs or benefits from the different modules of the unit:</p> <ul style="list-style-type: none"> • Dairy system, pollution, and health • Dairy system and climate • Dairy system and biodiversity • Solutions for the impacts of the dairy industry 	What economic, social, environmental, or geopolitical costs or benefits did you include? Did you include costs and benefits from Modules 1, 2, and 3? Did you discuss solutions that are being used to reduce the dairy system impact on the environment?
Student cites two pieces of direct evidence from the module to verify how they are supporting or refuting the claim. Evidence can come from:	What specific evidence from the module did you use to determine the accuracy of the claim? What outside evidence did you find?

- Student models
- Other resources in the module (texts, data sets, etc.).

Part 1 Question 3 Task Rubric

INFO-H4: Evaluate the validity and reliability of and/or synthesize multiple claims, methods, and/or designs that appear in scientific and technical texts or media reports, verifying the data when possible.

LS4.D-H2: Humans depend on the living world for the resources and other benefits provided by biodiversity. But human activity is also having adverse impacts on biodiversity through overpopulation, overexploitation, habitat destruction, pollution, introduction of invasive species, and climate change. Thus, sustaining biodiversity so that ecosystem functioning and productivity are maintained is essential to supporting and enhancing life on Earth. Sustaining biodiversity also aids humanity by preserving landscapes of recreational or inspirational value.

CE-H3: Systems can be designed to cause a desired effect.

	Emerging	Developing	Proficient
Sample Student Response	I think media claim 15 is inaccurate. It says that cattle ranching is terrible for biodiversity. This claim is inaccurate grazing of cattle has been shown to increase biodiversity compared to monoculture cropland.	<p>I think media claim 15 is inaccurate. It says that cattle ranching is terrible for biodiversity. This claim is inaccurate grazing of cattle has been shown to increase biodiversity compared to monoculture cropland.</p> <p>The way the dairy system is designed is meant to provide dairy products for consumers. The system was built to do this well. One unintended consequence of this design is that it contributes to a loss of biodiversity because land is cleared for buildings or for monocultured crop feed which destroys the habitats for many species.</p> <p>But using grazing can actually restore habitats for some species. It does so because it provides different types of habitats. When cattle graze on grasses, it allows other types of plants to flourish, especially over long periods of time.</p>	<p>I think media claim 15 is inaccurate. It says that cattle ranching is terrible for biodiversity. This claim is inaccurate grazing of cattle has been shown to increase biodiversity compared to monoculture cropland.</p> <p>The way the dairy system is designed is meant to provide dairy products for consumers. The system was built to do this well. One unintended consequence of this design is that it contributes to a loss of biodiversity. This is especially true with practices such as growing monocultured crops for dairy cattle feed. We saw that the biodiversity in a field of monocultured crop was much less than in a field of undisturbed land. However, there are practices that the dairy system can use to improve biodiversity. For example, in the article titled "Grazing and Biodiversity" we saw "Metera et al. (2010) found that grazing created favorable conditions for the formation of habitat structure preferred by many endangered birds, small mammals, and invertebrates, positively impacting biodiversity of grasslands." This indicates that a practice such as grazing, when done appropriately, can provide habitat for certain species. If the blackbird's habitat is being</p>

		<p>We have to get food to eat from somewhere, so if media claim 15 is saying that grazing of cattle is a worse choice than feeding them food from monocultured crops, I would disagree because the monoculture cropland is going to reduce biodiversity even more.</p>	<p>wiped out, then perhaps a grazing practice is creating new habitats for the birds.</p> <p>Further, the same article argued that “The effects of grazing on plant communities and biodiversity thus reflect some basic ecological principles. These include: (1) plants are distributed in patches, and the status and distribution of patches depend upon the processes, such as grazing, that create them; (2) grazing can increase heterogeneity of plant communities by reducing dominance by a few species, which are replaced by numerous secondary species and (3) habitat diversity (patchiness) and resultant ecotones or edges are important as wildlife habitat for many species, but not all. Non-uniform use of rangelands by livestock contributes to these effects.”</p> <p>Furthermore, we know the dairy system is trying out additional strategies to increase biodiversity, such as rotational grazing, which can further increase biodiversity compared to monocultured crops. We have to get food to eat from somewhere, so if media claim 15 is saying that grazing of cattle is a worse choice than feeding them food from monocultured crops, I would disagree because the monoculture cropland is going to reduce biodiversity even more.</p>
How to Achieve This Level	Student completes 0-2 out of 5 Look Fors	Student completes 3-4 out of 5 Look Fors	Student completes 5 out of 5 Look Fors

Part 1 Question 3 Look Fors	Prompts to Support Students in Improving on Look Fors
Student evaluates the claim and states if the claim is accurate, inaccurate, or misleading.	What specific evidence from the module did you use to determine the accuracy of the claim?
Student describes the intended task the dairy system was designed to complete and the unintended consequences of its design.	What do you think the dairy system was designed to do? What are some unintended consequences of its design?
Student describes the consequences of the design of the dairy system on biodiversity, including through one or more of the following mechanisms: <ul style="list-style-type: none"> • Overexploitation 	How is biodiversity changing in the example you shared? Which mechanism is involved in the reduction of biodiversity?

<ul style="list-style-type: none"> • Habitat Destruction • Pollution 	
Student describes strategies the dairy system is taking to address potential impacts on biodiversity.	What changes to the design of the system are being tried out to help maintain or improve biodiversity?
<p>Student cites two pieces of direct evidence from the module to verify how they are supporting or refuting the claim. Evidence can come from:</p> <ul style="list-style-type: none"> • Student models • Other resources in the module (texts, data sets, etc.). 	In your response, highlight direct evidence you used from the module. Use a different color for each source.

To Support Students in Revising Their Tasks Based on Peer or Teacher Feedback

- Prior to submitting their work, hold a peer-feedback session using a protocol such as [Tell-Ask-Give](#) or with norms such as [SPARK](#). Then have students revise their work based on the peer feedback.
- After submitting their work and receiving feedback and a grade, hold a session for students to norm on the features of high-quality work. Choose three samples of student work (one Emerging, one Developing, and one Proficient), anonymize them, and distribute them to students. Ask students to analyze the three samples of work and annotate what features of the work are high-quality examples of the Look Fors and what features are not. Share out the features of high-quality work that students identified and ask them to point to specific examples in the work samples. Build a class list of features of high-quality work. Then, allow students time to revise their work based on the list they generated and resubmit it for a revised grade.