

Instructions

1. Responses can be classified in three categories at most. Give them as many codes as possible.
2. If the respondent talks about the differentiation of energy, refer to the “definition of differentiation of energy” table for additional help in categorizing.
3. If the respondent talks about *how greenhouse gases work*, refer to the “definition of greenhouse gases” table for additional help in categorizing.
4. If the respondent mentions greenhouse gases, refer to the “says/mentions greenhouse gases” table for additional help in categorizing.
5. If the respondent talks about *any type of mechanism for climate change*, refer to the “mechanism of climate change table.” This table is broken into the sub-categories of energy, source, general chemical reactions, and respondent confusion. Please note that sometimes *a response can fit into more than one subcategory* under the overarching mechanism category.
6. If the respondent leaves a question blank, writes “do not know,” or “same as above,” refer to the last table, “Don’t Know.”
7. If the response prompts categorization ambiguities, first look at the response as a whole to look for phrases that might provide a clearer indication of what they mean. If the ambiguity can be clarified without coder inferences or assumptions, categorize the response into the code that provides the most possible credit (i.e., “be charitable within reason”). If the coder cannot clear up the ambiguity or must make assumptions, code the response into the category which best describes what the respondent actually says and not what the coder might think they are trying to say (i.e., “don’t infer extra credit”). Also, note whether the respondent is defining something, explaining how climate change works, or *both*. To be doing both, the ideas must be clearly a definition and a mechanism. For instance, to say “greenhouse gases do X and thus trap heat on earth” would be both a definition and a mechanism. Even if a definition is embedded in a phrase that describes the mechanism, give them credit for both the mechanism and the definition.
8. Unless otherwise noted, all the categories listed can be applied to Know_1, Know_2, or Know_3.
9. See example column for examples of each code. Please note that for each example, the response may have been coded into more categories than just the category in which the example is placed (e.g., the example for MCCS2 was coded into SGHG1 as well as MCCS2).

Definition of Terms

Know_1: Please write 1-3 sentences (about 30 words or less) that you could use to explain how climate change occurs to a senior in high school.

Know_2: Please explain any differences regarding how energy (i.e., heat, light) travels to the Earth from the sun compared to how energy travels away from the Earth.

Know_3: Are all gases “greenhouse gases?” If not, what makes something a greenhouse gas?

Categories (Listed) – Please see tables for cutoffs, discussions, and comparisons between categories.

DD: Definition of the Differentiation of Light/Energy

DD1: Respondent differentiates between visible sunlight entering the atmosphere and infrared radiation/heat being emitted by the Earth.

DD2: Partial credit for differentiation: Respondent attempts to explain how energy differs when it enters the atmosphere and when it leaves, but does so in such a way that is either too incomplete or incorrect to fit into category DD1. Category DD2 is therefore “partial credit” for DD1. As long as the participant references some kind of asymmetry in how light is reflected, bounced, changed, etc. (even if mostly wrong), they fall in category DD2 and not DD3.

DD3: Completely incorrect attempt to differentiate kinds of light/energy – This only applies to when there is absolutely NO asymmetry referenced.

DGHG: Definition of Greenhouse Gases

DGHG1: Greenhouse Gas “right *definition*” – Respondent may or may not mention the exact phrase “greenhouse gas”, but at least defines them in the right context. Respondent defines greenhouse gases as molecules that *absorb* energy, not as molecules that trap, stop, block, or reflect energy. Respondent may use the terms light, heat, radiation, or infrared radiation instead of energy in their definition.

DGHG2: Greenhouse Gas “partial credit *definition*” – Respondent may have demonstrated an understanding of some of the elements outlined in category DGHG1 but their answer is either too grammatically vague to pass judgment on correctness or contains elements of *incorrect* content (“partial credit”). To get a definition code, the respondent has to mention or allude to energy. Remember that responses in this category do *not* describe greenhouse gases as molecules that “*absorb energy*.”

DGHG3: Not all gases are greenhouse gases: Respondent directly answers the question in Know_3 by stating in some way that not all gases are greenhouse gases.

DGHG4: Wrong concept of greenhouse gas: The participant holds obvious misconceptions about what a greenhouse gas is or how it works.

SGHG: Says/mentions greenhouse gases - If they give at least some definition or statement as to *what* greenhouse gases do or *how* they work, refer to DGHG categories.

SGHG1: *In know_1:* Simple mention of greenhouse gases (no explanation) –Participant uses the term “greenhouse gas,” or provides a specific example, like carbon dioxide, in the context of a moderately or mostly *correct* explanation of climate change.

In know_2: Simple mention of greenhouse gases - participant uses the term “greenhouse gas,” or provides a specific example, like carbon dioxide, in the context of a moderately or mostly *correct* explanation or strongly implied understanding of the concept of how energy functions in the atmosphere

In know_3: Simple mention of greenhouse gases - participant uses the term “greenhouse gas,” or provides a specific example, like carbon dioxide, in the context of a moderately or mostly *correct* explanation or strongly implied understanding of the concept of a greenhouse gas.

SGHG2 : *In know_1:* Simple mention of greenhouse gases –Respondent uses the term “greenhouse gas,” or provides a specific example of one, like carbon dioxide, in the context of a mostly *incorrect* explanation of climate change.

In know_2: Simple mention of greenhouse gases - participant uses the term “greenhouse gas,” or provides a specific example, like carbon dioxide, in the context of a mostly *incorrect* explanation or strongly implied understanding of the concept of how energy functions in the atmosphere

In know_3: Simple mention of greenhouse gases - participant uses the term “greenhouse gas,” or provides a specific example, like carbon dioxide, in the context of a mostly *incorrect* explanation or strongly implied understanding of the concept of a greenhouse gas.

SGHG3: Mentions greenhouse effect – Respondent explicitly uses the phrase “greenhouse effect,” or some variation thereof. The respondent may or may not offer an explanation of what the greenhouse effect is or how it works.

MCC: Mechanism of Climate Change, broken up by concept

MCCE: Mechanism of climate change, energy

MCCE1: Atmosphere Retention time: Respondent describes how long it takes for heat to leave the atmosphere in depth. They reference that there are “more” greenhouse gases now than there were before, which causes heat to stay in the atmosphere longer OR causes *more* heat to stay in the atmosphere (either time or amount are permissible in this category). The explanation must be in the context of comparing a previous instance when greenhouse gases existed to the presence of greenhouse gases in the atmosphere today.

MCCE2: Trapped heat as a *mechanism* for climate change: Respondent describes heat/energy/radiation as being trapped. They may describe energy changes but lack a comparison from our time to a previous time with greenhouse gases. For inclusion in this category, the respondent must use the idea of “trapping” or “stopping” heat from leaving and must NOT attempt to use the concept of energy being “trapped” as a definition of greenhouse gases– that would fall into category DGHG2. However, there are responses that may be coded as both categories MCCE2 and DGHG2 if the respondent separately defines greenhouse gases, as guided by the definition of category DGHG2, and describes the mechanism of climate change as trapping heat.

MCCE3: Input rate/amount of energy does not equal output rate/amount of energy – Respondent demonstrated some knowledge that rate/amount of energy input is different from the rate/amount of energy output, and so energy is “stuck” somewhere OR energy is “slowed down.” If the person does NOT reference a previous time with less GHGs, but does talk about heat being slowed or hindered from leaving the atmosphere, this category applies. Also, this category classifies responses that are vaguer than those in category MCCE2 or MCCE1.

MCCE4: Radiation from the sun directly heats the atmosphere – Respondent explicitly states or strongly implies that the atmosphere is heated by radiation from the sun. Respondent does not mention that Earth absorbs/reemits energy (i.e., the respondent skips differentiating energy).

MCCS: Mechanism of climate change, source

MCCS1: Human element: Respondent states or heavily implies that human emissions of greenhouse gases cause or contribute to global warming. This category includes references to fossil fuels and technology as causes of climate change.

MCCS2: Natural variation/weather patterns as an explanation for climate change: Respondent references natural variation in weather patterns as a cause of climate change thereby implying that anthropogenic emissions (“the human element”) are not the only causes of climate change.

MCCS3: Pollution: Respondent explicitly states or strongly implies that pollution causes global warming, with no explicit reference to energy’s function in the warming of the earth. This category also includes responses where the respondent seems to think that pollution physically “thickens the atmosphere” and thus causes warming. If the person references pollution (as opposed to greenhouse gases) as causing global warming, the response fits in this category.

MCCS4: Ozone: Respondent talked about the *depletion* of the ozone layer causing global warming.

MCCR: Mechanism of Climate Change, General Chemical Reactions

MCCR: Chemical Reactions and/or molecular properties explanations: participant attempts to explain the difference between energy entering Earth’s atmosphere and energy exiting Earth’s atmosphere from a strictly chemical perspective. Response does not include explicit differentiation between energies but rather uses chemical reactions in themselves as the cause of warming. A molecular perspective involving

vibrations or other molecular properties may be used instead of chemical reactions or in addition to them. Response is too general to be given credit for categories DD1 or DGHG1.

MCCQ: Mechanism of Climate Change, Confused Respondent

MCCQ1: General Weather Confusion: Respondent thought we were asking about the seasons. The respondent may describe weather patterns, Earth's rotations, or the tilt of the Earth's axis.

MCCQ2: Did not understand: Respondent supplies a completely irrelevant answer (i.e. talks about high school perspectives).

DNK: Don't know or blank

DNK1: Don't know or N/A

DNK2: Code here if the participant uses a phrase similar to "I wouldn't add anything" or same as above.

Categories (organized by keyword)

| Name of Category | Definition of Differentiation of Energy: DD In descending order from most thorough to least thorough | Distinctions: | Examples: |
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| DD1 | Respondent differentiates between visible sun light entering the atmosphere and infrared radiation/heat being emitted by the earth. | This category is fairly easy to find; if respondent say "reflected" IR (instead of absorbed and reemitted) that still fits here, provided that they made some distinction between light coming in and light going out. | "higher frequency radiation from the sun enters easily, but the lower frequency radiation reemitted by the cooler earth" (1Post) "the sun emits energy and the earth absorbs that energy and then infrared light comes back" (25Post) |
| DD2 | Partial credit for differentiation: Respondent attempts to explain how energy differs when it enters the atmosphere and when it leaves, but does so in such a way that is either too incomplete or incorrect to fit into category DD1. Category DD2 is therefore "partial credit" for DD1. As long as the participant references some kind of asymmetry in how light is reflected, bounced, changed, etc. (even if mostly wrong), they fall in category DD2 and not DD3. | For example participant responses may include: -Failure to say how visible light becomes infrared -Failure to mention visible light AND infrared light (or heat) -Other partially incorrect attempts at differentiation | "Energy traveling to earth is converted to infrared, [this energy can be absorbed by greenhouse gases]" (4Post). "The earth emits shorter wavelengths of energy whereas the sun emits longer ones." (6 Post) |
| DD3 | Completely incorrect attempt to | Fails to understand that there is a difference in | "No difference on how energy travels." |

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| | differentiate kinds of light/energy; this only applies to when there is absolutely NO asymmetry referenced | incoming and outgoing energy. | (27 Pre) |
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| Name of category | Definition of Greenhouse Gas : DGHG In descending order from most thorough to least thorough | Distinctions: | Examples: |
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| DGHG1 | Greenhouse Gas “right <i>definition</i> ” – Respondent may or may not mention the exact phrase “greenhouse gas”, but at least defines them in the right context. Respondent defines greenhouse gases as molecules that <i>absorb</i> energy, not as molecules that trap, stop, block, or reflect energy. Respondent may use the terms light, heat, radiation, or infrared radiation instead of energy in their definition. | If you are having trouble deciding between DGHG1 and DGHG2, look at the context in which the definition of a greenhouse gas is given. Furthermore, if you really cannot tell what they are saying (because of grammar or vagueness) pick DGHG2. To be qualified in DGHG1, the respondent has to give some indication that they know <i>how</i> greenhouse work, not just that they cause something to happen, resulting in warming. (If respondent uses the concepts of trapping, stopping, blocking, or reflecting energy the response belongs in category DGHG2.) It doesn’t matter for this category where the respondent thinks the energy comes from. | “Greenhouse gases absorb the reflected light...” (2Post) “Only the ones that can absorb infared light, like CO2 are considered greenhouse gases...”(3 Post) |
| DGHG2 | Greenhouse Gas “partial credit <i>definition</i> ” – Respondent may have demonstrated an understanding of some of the elements outlined in category DGHG1 but their answer is either too grammatically vague to pass judgment on correctness or contains elements of <i>incorrect</i> content (“partial credit”). To get a definition code, the respondent has to mention or allude to energy. Remember that responses in this category do <i>not</i> describe greenhouse gases as molecules that “ <i>absorb energy</i> .” | Remember, this is the “Partial Credit” category. Cut-off: When respondent tries to explain the function of a greenhouse gas the response fits in DGHG2 when they do not say absorb. | “Climate change occurs due to the abundance of greenhouse gases in the atmosphere. Greenhouse gases, like co2, are slowly emitted into the atmosphere as energy, but as the abundance of this gas increases, it slowly warms up the earth, b/c greenhouse gases are created at a faster rate than they absorb infared light” (14 Post) “Carbon gases are released into the air that trap extra light” (16 Post) |

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| DGHG3 | Not all gases are greenhouse gases: Respondent directly answers the question in Know_3 by stating in some way that not all gases are greenhouse gases. | Just have to say “no” in some way, but do not have to understand why. Can also give counterexample to count in this category (e.g. saying, “N2 is not a greenhouse gas”). | “No, a greenhouse gas is referring to...” (21Pre) “not all gases are greenhouse gases. No clue what makes a greenhouse gas a greenhouse gas” (24Pre) |
| DGHG4 | Wrong concept of greenhouse gas: The participant holds obvious misconceptions about what a greenhouse gas is or how it works. | If there is some modicum of correctness do not put the response here. Give them the credit for what they know. | “Greenhouse gases are the gases that remain in the earth's atmosphere. They are unable to leave” (30Pre) |

| Name of category | Says/Mentions Greenhouse Gases: SGHG In descending order from most thorough to least thorough | Distinctions: | Examples: |
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| SGHG1 | <p>-In know_1: Simple mention of greenhouse gases (no explanation) – Participant uses the term “greenhouse gas,” or provides a specific example, like carbon dioxide, in the context of a moderately or mostly <i>correct</i> mostly <i>correct</i> explanation of climate change.</p> <p>-In know_2: Simple mention of greenhouse gases - participant uses the term “greenhouse gas,” or provides a specific example, like carbon dioxide, in the context of a moderately or mostly <i>correct</i> mostly <i>correct</i> explanation or strongly implied understanding of the concept of how energy functions in the atmosphere</p> <p>-In know_3: Simple mention of greenhouse gases - participant uses the term “greenhouse gas,” or provides a specific example, like carbon dioxide, in the context of a moderately or mostly <i>correct</i> mostly <i>correct</i> explanation or</p> | <p>If they do not describe the behavior of greenhouse gases, examine the context. If they mention it in a moderately or mostly correct context, then the response fits in SGHG1. Parts of the response can be wrong or irrelevant, but if they use the term greenhouse gases in a mostly correct context, SGHG1 is appropriate.</p> <p>This response does not fit into category DGHG1 because it does not say that greenhouse gases trap heat. Saying that GHGs cause warming does not give enough indication of understanding of <i>how</i> GHGs interact with energy.</p> <p>This response also does not fit into category MCCC3 because it does not specify that GHGs intrinsically cause warming.</p> | “Climate change ... can also be induced unnaturally by greenhouse gas buildup from carbon emissions” (13 Pre) |

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| | strongly implied understanding of the concept of a greenhouse gas. | | |
| SGHG2 | <p>-<i>In know_1</i>: Simple mention of greenhouse gases –Respondent uses the term “greenhouse gas,” or provides a specific example of one, like carbon dioxide, in the context of a mostly <i>incorrect</i> explanation of climate change.</p> <p>-<i>In know_2</i>: Simple mention of greenhouse gases - participant uses the term “greenhouse gas,” or provides a specific example, like carbon dioxide, in the context of a mostly <i>incorrect</i> explanation or strongly implied understanding of the concept of how energy functions in the atmosphere</p> <p>-<i>In know_3</i>: Simple mention of greenhouse gases - participant uses the term “greenhouse gas,” or provides a specific example, like carbon dioxide, in the context of a mostly <i>incorrect</i> explanation or strongly implied understanding of the concept of a greenhouse gas.</p> | Responses fit into category SGHG2 when they mention GHGs (or a type of GHGs) but do so in a mostly incorrect explanation. When participants refer to ozone depletion as the main cause of global warming, for example, it is incorrect . Because this response does not explain how GHGs work, and the context is incorrect, it fits into SGHG2. | “Climate change occurs when the weather patterns abruptly change and are abnormal. It occurs because of greenhouse gases such as carbon dioxide released into the atmosphere.” (35 Pre) |
| SGHG3 | Mentions greenhouse effect – Respondent explicitly uses the phrase “greenhouse effect,” or some variation thereof. The respondent may or may not offer an explanation of what the greenhouse effect is or how it works. | If respondent defines GHGs correctly and then mentions the greenhouse effect separately, SGHG3 and DGHG1 can be used to categorize the same response. However, usually SGHG3 is used in place of DGHG1. | “climate change occurs due to an increase of trapped infrared light in our atmosphere which is caused by the greenhouse effect.” (21 Post) |

| Name of category | Mechanism of Climate Change: MCC | Distinctions: | Examples: |
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| ENERGY, Mechanism of Climate Change: MCCE | | | |
| MCCE1 | Atmosphere Retention time: Respondent describes how long it takes for heat to leave the atmosphere in depth. They reference that there are “more” greenhouse gases now than there were before, which causes heat to stay in the atmosphere longer OR causes <i>more</i> heat to stay in the atmosphere (either time or amount are permissible in this category). The explanation must be in the context of comparing a previous instance when greenhouse gases existed to the presence of greenhouse gases in the atmosphere today | MCCE1 needs to have some sort of comparison to another time when there were not as many GHGs in the atmosphere. If they do not, then the response likely fits into MCCE2 or MCCE3. MCCE1 is the most specific category. Often there will be reference to “slowing” or “preventing” the escape of heat from the atmosphere | <p>“Greenhouse gases absorb the reflected light and cause the earth to heat up (when more gases, slower rate of expulsion + therefore more heat” (2post)</p> <p>“but currently too much carbon gases are released into the air that trap extra light (heating earth up more than usual” (16 Post)</p> |
| MCCE2 | Trapped heat as a <i>mechanism</i> for climate change: Respondent describes heat/energy/radiation as being trapped. They may describe energy changes but lack a comparison from our time to a previous time with greenhouse gases. For inclusion in this category, the respondent must use the idea of “trapping” or “stopping” heat from leaving and must NOT attempt to use the concept of energy being “trapped” as a definition of greenhouse gases– that would fall into category DGHG2. However, there are responses that may be coded as both categories MCCE2 and DGHG2 if the respondent separately defines greenhouse gases, as guided by the definition of category DGHG2, and describes the mechanism of climate | <p>This response fits into MCCE2 and not MCCE1 because it does not say that the more greenhouse gases there are in the atmosphere, the longer the energy stays in the atmosphere. Rather, it implies that there is a threshold beyond which energy “lingers” in the atmosphere.</p> <p>MCCE2 is almost MCCE1, but there is either a slight misunderstanding or miscommunication in the wording of the response (i.e., this category is partial credit).</p> <p>If energy being “trapped” is used to <i>define</i> a GHG, the response is coded in DGHG2 so as to avoid giving credit twice.</p> | <p>“Climate change is a gradual heating of the Earth's atmosphere due to trapped heat” (30 post)</p> <p>“co2. that creates a layer in our planet's atmosphere which traps sunlight and warms up the earth.” (12 Pre)</p> |

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| | change as trapping heat. | | |
| MCCE3 | Input rate/amount of energy does not equal output rate/amount of energy – Respondent demonstrated some knowledge that rate/amount of energy input is different from the rate/amount of energy output, and so energy is “stuck” somewhere OR energy is “slowed down.” If the person does NOT reference a previous time with less GHGs, but does talk about heat being slowed or hindered from leaving the atmosphere, this category applies. Also, this category classifies responses that are vaguer than those in category MCCE2 or MCCE1. | If trying to decide between MCCE1, MCCE2, and MCCE3, first ascertain if there is a comparison to a different time with a different level of greenhouse gases. If yes, then MCCE1. Otherwise, look at the clarity: if they say heat is being STOPPED or TRAPPED, the response goes in MCCE2; if the response talks about how energy is slowed or hindered, then MCCE3. | <p>“Climate change is the heating up of the earth - above its normal temperature. It is caused by waves of heat leaving the earth's atmosphere, but certain greenhouse gases has caused the waves to leave even more slowly, causing the earth to be at a higher temperature.” (6 post)</p> <p>“it releases infrared light which gets absorbed by the greenhouse gases in our atmosphere causing the earth to heat up” (15 Post) – This is a good example of both a definition and a mechanism.</p> |
| MCCE4 | Radiation from the sun directly heats the atmosphere – Respondent explicitly states or strongly implies that the atmosphere is heated by radiation from the sun. Respondent does not mention that Earth absorbs/reemits energy (i.e., the respondent skips differentiating energy). | If the respondent only refers to radiation from the sun heating greenhouse gases, then it fits in MCCE4. In other words, it will not fit into category DD1 because it fails to explain differentiation. Additionally, if the mechanism by which energy from the sun reaches the Earth is ambiguous and there are no clear indications in the rest of the response to suggest that the energy reaches the Earth's surface, then the response should be classified in MCCE3. | “The atmosphere traps energy traveling from the sun.” (49 Pre) |
| SOURCE, Mechanism of Climate Change: M CCS | | | |
| MCCS1 | Human element: Respondent states or heavily implies that human emissions of greenhouse gases cause or contribute to global warming. This category includes references to fossil fuels and technology as causes of | This category will include any reference to how humans cause climate change, e.g. the Industrial Revolution, cars, oil combustion, etc. | “Greenhouse gases emitted by our cars, and industrial process and other human activity involving the burning of fossil fuels or other combustibles” (18 Pre) |

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| | climate change. | | |
| MCCS2 | Natural variation/weather patterns as an explanation for climate change: Respondent references natural variation in weather patterns as a cause of climate change thereby implying that anthropogenic emissions ("the human element") are not the only causes of climate change. | | "Climate change is a natural process (ice age - el nino) an can also be induced unnaturally by greenhouse gas buildup from carbon emissions" (13 Pre) |
| MCCS3 | <i>MCCS3: Pollution:</i> Respondent explicitly states or strongly implies that pollution causes global warming, with no explicit reference to energy's function in the warming of the earth. This category also includes responses where the respondent seems to think that pollution physically "thickens the atmosphere" and thus causes warming. If the person references pollution (as opposed to greenhouse gases) as causing global warming, the response fits in this category. | This category needs some sort of implication that humans or "waste" emissions warm up the atmosphere by themselves, with no regard for energy's role. | "We produce too much carbon as waste. It ends up in the atmosphere. Heats up." (31 Pre) |
| MCCS4 | <i>MCCS4: Ozone:</i> Respondent talked about the <i>depletion</i> of the ozone layer causing global warming. | If the respondent claims that ozone depletion causes climate change, it goes into MCCS4. | "ozone depletion also affect how the sun's heat and light is absorbed in our atmosphere and cause climate change." (28 Pre) |
| GENERAL CHEMICAL REACTIONS, Mechanism of Climate Change: MCCR | | | |
| MCCR | Chemical Reactions and/or molecular properties explanations: participant attempts to explain the difference between energy entering Earth's atmosphere and energy exiting Earth's atmosphere from a strictly chemical | Responses fit into this category if they provide a very general attempt to describe heat in the atmosphere. Often the respondent has misconceptions about the role of chemicals in the atmosphere and therefore their response cannot fit into categories DD1 or DGHG1 as | "The sun directly enters the earth causing many chemical reactions. The earths byproducts of these chemical reactions let out either heat or molecules. Some molecules reabsorb the heat and create global warming" (5 |

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| | perspective. Response does not include explicit differentiation between energies but rather uses chemical reactions in themselves as the cause of warming. A molecular perspective involving vibrations or other molecular properties may be used instead of chemical reactions or in addition to them. Response is too general to be given credit for categories DD1 or DGHG1. | well as this one. | post) “Energy travels to the earth from the sun in the rays of heat of the sun in the form on molecules in constant motion. Energy travels away from earth by the same force of interacting and fast moving molecules” (6 pre) |
| RESPONDENT CONFUSION, Mechanism of Climate Change: MCCQ | | | |
| MCCQ1 | General Weather Confusion: Respondent thought we were asking about the seasons. The respondent may describe weather patterns, Earth’s rotations, or the tilt of the Earth’s axis. | Respondent could talk about seasons in conjugation with actual explanation of global warming. Read the whole response before coding. | “Climate change occurs when the sun is hitting the earth from a different angle. When it is winter, the sun's rays are less direct. In the summer, there are longer days w/ more direct sunlight” (21 Pre) |
| MCCQ2 | Did not understand: Respondent supplies a completely irrelevant answer (i.e. talks about high school perspectives). | | “It is senior year that students begin to get tired of the high school environment and are anxious to open a new chapter of their lives: college. This is called senioritis. Therefore a climate change occurs to a senior in highschool when he/she is ready to leave high school and move on” (6 Pre) |

| Number of Category | Don’t know: DNK | Distinctions: | Examples: |
|--------------------|---|---------------|---|
| DNK1 | N/A: maybe ran out of time. | | “I do not know how climate change occurs I was never taught.” (24Pre) |
| DNK2 | Code here if the participant uses a phrase similar to “I wouldn’t add anything” or “same as above.” | | “I wouldn’t add anything.” (3 Post) |