**Analyzing and Categorizing Tasks and Other Resources**

**A guiding set of categories**

The categories and descriptions offered here are meant to help us think about the *potential* of various tasks and resources to engage students in *mathematical argumentation*, whether generating arguments or critiquing the reasoning of others (which also requires a reasoned argument)*.*

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| **Category** | **Description** | **Examples** |
| Task/resource is likely to support engagement with MP3 | * Questions/prompts clearly indicate that students should develop a logical chain of mathematical reasoning to defend his or her claim * Questions/prompts require students to evaluate another’s results or argument (e.g., agree, disagree, analyze the reasoning) *and* support their evaluation with appropriate evidence or mathematical reasoning * Questions/prompts or rubric include scaffolding for generating a mathematical argument for a result or answer | * How many taxis are required? State your answer and justify your answer to show that you are correct. * “Write an expression for the perimeter for the ground floor. Explain how your expression accounts for all sides that are part of the perimeter.” * *From a rubric:* A strong response meets the criterion: “The answer is fully supported by a logical argument to show why the answer is correct. – or – An argument is given showing why an answer or line of reasoning is not correct.” |
| Task/resource has the potential to support engagement with MP3 | * Questions/prompts may engage students in MP3-related activities, such as generating conjectures or evaluating a claim or other’s argument, but may not make it clear that generating a mathematical argument is a necessary part of their response * Rubrics may align with MP3 activities, but may not explicitly require students to articulate a chain or reasoning. | * Explain your answer. Use pictures, words, or numbers to show your thinking. * Explain the reasoning you used to find your answer. * *From a rubric:* A strong response meets the criterion: “Provide evidence to support your answer.” |
| Task/resource is not likely to support engagement with MP3 | * Questions/prompts may elicit higher order thinking, but do not target activities that would lead to constructing arguments or critiquing reasoning. (e.g., a focus on problem solving, informal reasoning) * Questions/prompts do not encourage students to communicate their reasoning or that mathematical reasoning is necessary to defend the claim * Rubrics may be focused on other features of higher order thinking or producing responses to open-ended tasks (e.g., writing mechanics) rather than the mathematical reasoning | * Create a poster of the ideas and strategies you used to solve this problem. Be prepared to share your work. * *From a rubric*: A strong response meets the criterion: “Demonstrates effective use of language, is organized and easy to read, and communicates ideas clearly.” |

NOTE:

Students are creative and can always respond however they like to any prompt. Your question is not to consider all possible responses, but rather to consider the following question: If a student does what is asked of him or her by the task, with reasonable interpretation, will s/he engage MP3?