

This sample Assignment Review Protocol looks at how well the [Task: Types of Data By: Engage NY. \(pages 13-19\)](#) would partially align to KY.5.MD.2. It is important to note that the identified mathematical practices, coherence connections and any clarifications are possible suggestions; however, they are not the only pathways. The value of this resource is in having these discussions at the PLC level to support collective teacher clarity.



Assignment Review Protocol: Math

The student work review tool is intended to help teachers, leaders, and other stakeholders answer the question, "Does this task give students the opportunity to meaningfully engage with worthwhile grade-appropriate content?"

**PART ONE: Mathematical Content:** Does this assignment align with the expectations defined by grade-appropriate standards?

Types of Data

Does the assignment focus on one or more grade-appropriate mathematics standards?

Yes	Partially	No
Standard(s): KY.5.MD.2		
Yes	No	

Do all questions and/or tasks reach the depth of grade-appropriate standard(s)? Use the following criteria to guide your thinking.

- Section 1: Target of the Standard:**  
 Does the task match the target of the standard (conceptual understanding, procedural skill & fluency, and/or application)? Do the numbers/number types and types of representations (area model, shapes, graphs, functions, etc.) match those called for by the targeted standard(s)? For example,
  - If the standard is **conceptual understanding**, does the task require more than knowing isolated facts and methods? Are students asked to make sense of why a mathematical idea is important and the kinds of contexts in which it is useful?
  - If the standard is **procedural skill/fluency**, does the task require students to apply procedures accurately, efficiently, flexibly and appropriately? Does the task focus students' attention on the use of procedures for the purpose of developing a deeper level of understanding of mathematical concepts or ideas? If general procedures may be followed, can they be followed mindlessly or are students asked to engage with the conceptual ideas that underlie the procedures to complete the task successfully?
  - ✓ If the standard is **application**, does the task offer students the opportunity to solve problems in a relevant and meaningful way? Are students asked to select an efficient method to find a solution and develop critical thinking skills? Are students asked to actively examine task constraints that may limit possible solutions and strategies?
- Section 2: Coherence:** When examining the standard the task addresses,
  - Looking **across** grade-levels, is there a coherent connection to the same topic in a **previous** grade? If so, is the task crafted to elicit a more sophisticated level of understanding than would have been acceptable in the previous grade?
  - Is there a coherent connection to another standard **within** the current grade?

Evidence:  
 This task allows students to meet part of the standard by engaging them to read the data sets and identify them as either categorical or numerical. To meet the full intent students would need to generate a statistical question and select the data display that would be relevant to the dataset.

prior learning KY.4.MD.4 and future learning KY.6.SP.2 and KY.6.SP.4  
 Within connections could be made to numbers and operations w/ fractions to be included in the data set.





Section 3: Cognitive Complexity: Based on the target of the standard, determine the cognitive complexity of the task.

Target of the Standard	Low (Level 1)	Medium (Level 2)	High (Level 3)
<b>Conceptual Complexity</b>	Solving the problem requires students to recall or recognize a grade-level concept. The student does not need to relate concepts or demonstrate a line of reasoning.	Students may need to relate multiple grade-level concepts or different types, create multiple representations or solutions, or connect concepts with procedures and strategies. The student must do some reasoning but may not need to demonstrate a line of reasoning.	Solving the problem requires students to relate multiple grade-level concepts and to evidence reasoning, planning, analysis, judgment, and/or creative thought OR work with a sophisticated (nontypical) line of reasoning.
<b>Procedural Complexity</b>	Solving the problem entails little procedural demand or procedural demand is below grade level.	Solving the problem entails common or grade-level procedure(s) with friendly numbers.	Solving the problem requires common or grade-level procedure(s) with unfriendly numbers, an unconventional combination of procedures, or requires unusual perseverance or organizational skills in the execution of the procedure(s).
<b>Application Complexity</b>	Solving the problem entails an application of mathematics, but the required mathematics is either directly indicated or obvious.	Solving the problem entails an application of mathematics and requires an interpretation of the context to determine the procedure or concept (may include extraneous information). The mathematics is not immediately obvious. Solving the problem requires students to decide what to do.	In addition to an interpretation of the context, solving the problem requires recognizing important features, and formulating, computing, and interpreting results as part of a modeling process.

\*Source: [https://www.achieve.org/files/Cognitive%20Complexity%20Mathematics%20Assessment\\_FINAL\\_0.pdf](https://www.achieve.org/files/Cognitive%20Complexity%20Mathematics%20Assessment_FINAL_0.pdf)

The complexity of this task only requires students to determine if the data sets are categorical or numerical. We want students to gather the data determine which type of data would make sense to answer the question generated. Then students choose the correct representation to display the data.

**Overall Content Rating**

Overall, do the content demands of this assignment align with the expectations defined by grade-appropriate standards?

**0 – Weakly Aligned**

Less than half of the questions on the assignment reach the depth of the targeted grade-appropriate standard(s).



**1 – Partially Aligned**

More than half (but not all) of the questions on the assignment reach the depth of the targeted grade-appropriate standard(s).

**2 – Strongly Aligned**

All the questions on the assignment reach the depth of the targeted grade-appropriate standard(s).



**PART TWO: Mathematical Practice:** Does the assignment provide meaningful opportunities for students to engage in the standards for mathematical practices?

**Does the assignment require students to engage with one or more mathematical practices while working on grade-appropriate content?**

- Does the target standard(s) explicitly call for use of a specific mathematical practice? If so, does the task provide opportunity for students to engage in the mathematical practice named by the standard?

It may be useful to utilize the front matter of the [KAS for Mathematics](#) (p. 12-15) and the [Engaging the SMPs: Look fors and Questions Stems](#) document from the [Getting to Know the KAS for Mathematics](#) module.

<input checked="" type="radio"/> Yes	<input type="radio"/> No
Evidence:	
Students are able to problem solve and reason with MP.1. We would also want a task to where students would engage w/ MP.4, MP.5 and MP.6.	

Overall Practice Rating		
<i>Overall, to what extent does the assignment provide meaningful practice opportunities with the standards for mathematical practices?</i>		
<b>0 - Weakly Aligned</b> The assignment does not have students engage with critical mathematical practices while working on grade-appropriate content.	<input checked="" type="radio"/> <b>1 - Partially Aligned</b> The assignment gives students an opportunity to engage with at least one math practice, but not at the level of depth required by the standard.	<b>2 - Strongly Aligned</b> The assignment gives students the opportunity to engage with at least one mathematical practice at the appropriate level of depth required by the standard.

**PART THREE: Relevance:** Does the assignment give students an authentic opportunity to connect content standards to real-world issues and/or contexts?

**Does the majority of the assignment consist of word problems or real-world application problems/tasks?**

**If the assignment connects grade-appropriate, content standards to real-world experiences, does it also allow students to apply math in a meaningful way?**

- Do the provided scenarios make sense in a real-world setting?
- Do students have to think critically for each new problem rather than applying the same rote computation over and over without having to make sense of the problem? Is there likely to be more than one way to solve the problem rather than students all solving the problem in the same way?
- Does the assignment provide cues (intentionally or unintentionally) for how to approach the task?

<input checked="" type="radio"/> Yes	<input type="radio"/> No
Evidence:	
real world data sets	
<input type="radio"/> Yes	<input checked="" type="radio"/> No
Evidence:	
In this task, it is very surface level, its a task to start and build off of to truly engage students in the statistical process.	

Overall Relevance Rating		
<i>Overall, to what extent does the assignment give students an authentic opportunity to connect content standards to real-world issues and/or contexts?</i>		
<b>0 - Weakly Aligned</b> The assignment does not connect content standards to real world experiences.	<input checked="" type="radio"/> <b>1 - Partially Aligned</b> The assignment connects content standards to real-world experiences, but the problems do not allow students to apply math to the real world in a meaningful way.	<b>2 - Strongly Aligned</b> The assignment connects content standards to real world experiences and allows students to apply math to the real world in a meaningful way. It may also include real world...