Handout: Infusing Reasoning[1]

There are many ways to infuse mathematics instruction with opportunities for students to reason and engage in mathematical practices. This activity brings together several ways this can be done.

Select and analyze one of the collected tasks that are commonly found in elementary mathematics texts. Consider the following approaches to using the task to support reasoning and mathematical practices:

1) **Establishing an environment that emphasizes sense-making, justifying, and collective mathematical work**: The classroom norms you establish provide opportunities for reasoning and engaging in mathematical practices. Think about engaging your students in the task you have selected. What kinds of responses do you expect from students? What questions could you ask that would encourage students to share their reasoning about the problem? What norms could you have in place that would encourage collective work on mathematical reasoning or mathematical practices?

2) **Modifying the task**: The version of the task you use impacts how challenging the problem is for your students and also the type and/or extent of the mathematical reasoning. Think about how you could adjust the task you have selected to enhance students' opportunity to engage in reasoning or mathematical practices. With this in mind, design three versions of the task. What, specifically, did you change about the task in your modifications? How do you think each modification enhances the potential to engage students in mathematical reasoning or practices?

3) **Making mathematical practices explicit**: Even when students are engaged in the mathematical practices, they still may not be attending to them or realizing important facets of the practices that could otherwise be apparent in the work. One way to make the practice(s) explicit is to model their use. Select one of your modifications to use as the context for engaging in a mathematical practice. Complete the task, making key aspects of the practice explicit.

[1] Refers to the mathematical practices as described in the Common Core State Standards

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