

College Preparatory Mathematics Chapter 5 Sample Argumentation Task

5-11. Grace and William were wondering if *one half of a quarter* would be the same as *one quarter of a half*. "*But half of something is 50% and a quarter is the same as 25%, so if that's true, then 25% of 50% should be the same as 50% of 25%. Something seems wrong with that to me,*" Grace said.

Investigate Grace and William's question by completing parts (a) through (c) below.

- a. Draw a picture that shows one half of one fourth.
- b. Draw a picture that shows one fourth of one half.
- c. Write a note to Grace and William explaining how these two values compare and why the result makes sense.

This sample is an ADEQUATE QUALITY argument task. The problem presents us with two students who are confused about a concept and are trying to make sense of it. This is a great problem to focus on the speaking and writing piece since there is not much evidence required.

"Grace and William were wondering if one half of a quarter would be the same as one quarter of a half. "But half of something is 50% and a quarter is the same as 25%, so if that's true, then 25% of 50% should be the same as 50% of 25%. Something seems wrong with that to me," says Grace. Do you agree that one half of a quarter would be the same as one quarter of a half? Help Grace understand your claim by providing evidence and reasoning."