Family of Tasks

Ordering Decimals with Zero Digits

By Bradley Allen

Patrick says that 0.500 is greater than .50 and .5. Is he correct? Explain your reasoning.

This was a preexisting task I identified in a resource at Bowers that had many of the aspects of an argumentation task already. While hardly any changes are required to turn this into an argumentation task, you could further develop or revise it to have another student disagreeing, or to illicit responses requiring specific parts of a math argument in the answer. Variations include:

Developing to present different possible number of answers:

- Patrick says that .500 is greater than .50 and .5. Julia says that they are all equal in value. Who do you agree with? Why?
- Patrick says that .500 is greater than .50 and .5. Julia says that .5 is greater than .50 and .500. Who do you agree with? Why?

Revising to press for inclusion of specific writing features

- Patrick says that .500 is greater than .50 and .5. Julia says that they are all equal in value. Who do you agree with? Why? Include evidence in your answer
- Write a mathematical argument to answer the following question. Patrick says that .500 is greater than .50 and .5. Julia says that they are all equal in value. Who do you agree with? Why?

5.01 ≠ 5.0100. True or False?

This problem also could have multiple variations. This task addresses the concept of when a 0 is a digit in a decimal.

Variations:

- Mary says that 5.01 is not equal to 5.0100. Do you agree? Why?
- Mary says that 5.01 is not equal to 5.0100. Alina says they are equal. Do you agree or disagree? Why or why not?
- Mary says that 5.01 is not equal to 5.0100. Johannes thinks that 5.01 is less than 5.0100. Who do you agree with? Explain your answer.

Notice how in this last variation both Mary and Johannes are wrong. By developing problems where both characters are wrong students will have to think critically about their response and will not learn to "just pick a side" to argue.