

## Comparing, Adding, and Subtracting Decimals

**Student Objective:** Students will order decimals from least to greatest and then modify decimals that don't fit within a certain range by adding or subtracting.

**Prior Knowledge:** Students should have background knowledge with order, adding, and subtracting decimals.

### Before Strategy:

Admit Slip – Students will answer the question “What Math do you think you will need to work at an automobile part manufacturing company such as Yutaka?”

### During Strategy:

I do, We do, Y'all do, You do – I will discuss with students my experiences at Yutaka and explain the following scenario. “I am given parts that have a radius of 3.45mm, 3.05mm, 2.94mm, and 3.67mm. If I put these in order from least to greatest they will be in this order: 2.94mm, 3.05mm, 3.45mm, and 3.67mm. These measurements need to fall between 2.5mm and 3.5mm. The measurements 2.94mm, 3.05mm, and 3.45mm fall between these requirements. Since 3.67mm does not meet this requirement what would I need to do in order for it to fall between 2.5mm and 3.5mm? I would need to find the difference between 3.67mm and 3.5mm by subtracting  $3.67\text{mm} - 3.5\text{mm}$  which is 0.17mm. I would need to subtract 0.17mm from 3.67mm to make this part meet the required measurements.”

Next, we need to enter these numbers into a data sheet and note any changes that needed to be made.

Measurement	Change Needed for Correct Measurement
2.94mm	0
3.05mm	0
3.45mm	0
3.67	-0.17

Next, “y'all” will try this same process using the measurements 3.87mm, 2.34mm, 2.56mm, and 3.43mm. Give students about 10 minutes or until everyone is finished, then explain the answer. These measurements should be placed in order from least to greatest like this: 2.34mm, 2.56mm, 3.43mm, and 3.87mm. The measurements 2.34mm and 3.87mm do not fall between 2.5mm and 3.5mm. The difference between 2.34mm and 2.5mm can be found by subtracting  $2.5\text{mm} - 2.34\text{mm}$  which is 0.16mm. 0.16mm would need to be added to 2.34mm to reach 2.5mm. The difference between 3.87mm and 3.5mm can be found by subtracting  $3.87\text{mm} - 3.5\text{mm}$  which is 0.37mm. 0.37mm would need to be subtracted from 3.87mm to reach 3.5mm. Then they should be written on the data sheet like this:

Measurement	Change Needed for Correct Measurement
2.34mm	+0.16mm
2.56mm	0
3.43mm	0
3.87mm	-0.37mm

Lastly, students will complete the same process on their own using the following numbers: 2.56mm, 2.23mm, 2.97mm, 3.87mm, and 3.45mm. Answers will be discussed at the beginning of class the following day.

### After Strategy:

Exit Slip – Students will complete the same process using the following numbers: 2.22mm, 2.9mm, and 3.49mm.