## Is there a meaningful difference in the number of times students can write their name in 60 seconds with their dominant vs. their non-dominant hand?

## Student Guide

*Question:* Is there a meaningful difference in the number of times students can write their name in 60 seconds with their dominant vs. their non-dominant hand?

1. Why is the question formulated in terms of dominant and non-dominant hand, rather than left or right hand?
2. Describe the data collection process you will use to answer the research question.
3. Record the data for the class in the table below:

|  |
| --- |
| Number of Times for Dominant Hand Group |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |
| Number of Times for Non-Dominant Hand Group |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

1. Determine the five-number summary for Dominant Hand and Non-Dominant Hand Groups.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Minimum** | **1st Quartile** | **Median** | **3rd Quartile** | **Maximum** |
| Dominant Hand |  |  |  |  |  |
| Non-Dominant Hand |  |  |  |  |  |

1. Use the grids below to make dotplots and boxplots to represent the data.



1. What is the Median, Mean, IQR, and MAD for each group?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Median** | **IQR** | **Mean** | **MAD** |
| Dominant Hand |  |  |  |  |
| Non-Dominant Hand |  |  |  |  |

1. Based on the displays, how does the number of times students were able to write their names with their dominant hand compare with the number of times students were able to write their names with their non-dominant hand? Make sure to compare center, variability, and shape. Also, be sure to comment on the overlap and separation you observe in the data display.
2. Using your answers in questions **6 and 7**, do you think there is a meaningful difference in the number of times people can write their names with their dominant versus their non-dominant hand? Explain.