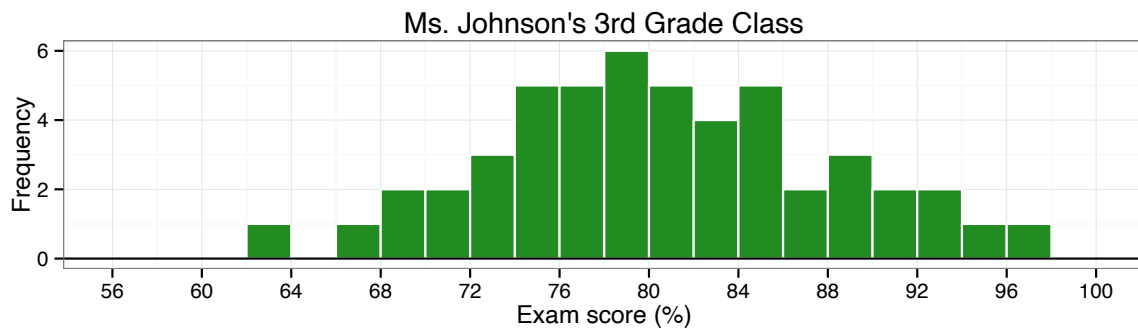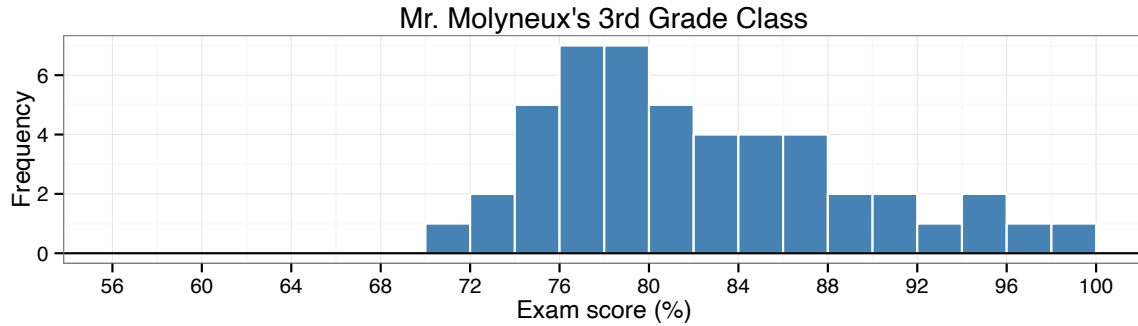Name: _____   Date: _____

Comparing Exam Scores with Histograms

Background:

Two 3rd grade teachers, Mr. Molyneux and Ms. Johnson, recently gave their students an exam. The scores for each class are displayed in the histograms below. The mean score for each class was approximately 80%.

Mr. Molyneux's 3rd Grade Class

Ms. Johnson's 3rd Grade Class

Question:

Based on the histograms, which exam do you think was easier? Use your knowledge of shape, center, and spread to justify your response.

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Answer Key

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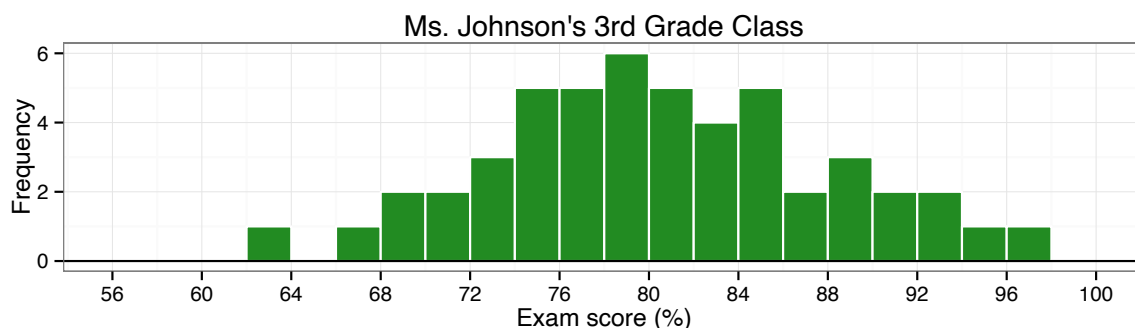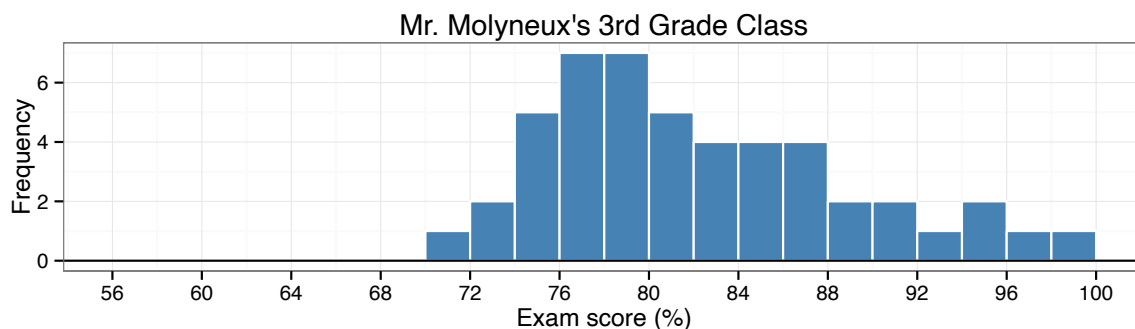
Possible Solutions:

Although the mean score for both classes was approximately 80%, the distribution of scores in Mr. Molyneux's class is right skewed. This means that a few high scores brought up the average score. To get a better indication about the typical exam score, it is better to use the median as a measure of center. In this case the median score would be less than 80%. The distribution of scores in Ms. Johnson's class, however, were roughly symmetric indicating that the median score is probably really close to the mean score of 80%. So, using the median to compare the typical score, Ms. Johnson's class did better so her exam might have been easier.

However, there was more variability in the scores in Ms. Johnson's class. The lowest score was around a 63 and the highest was around 97 compared to Mr. Molyneux's class in which the lowest score was 71 and the highest score was close to perfect. Mr. Molyneux's worst performing students did better than Ms. Johnson's worst performing students, so if easier means less likely to fail then Mr. Molyneux's exam was easier.