Info Gap: Is There a Difference?

Problem Card 1

Some students claim that listening to their favorite song before a test improves their score.

12 students want to explore the idea of music affecting test scores by first dividing into 2 groups at random. One group will listen to their favorite song before taking a standardized test and the other group will take the standardized test without listening to music before the test.

The scores from the standardized test are collected and analyzed. Is there evidence that listening to music affects the outcomes of the standardized test?

Info Gap: Is There a Difference?

Data Card 1

- The mean score for the group that listened to their favorite song is 1,082.16.
- The mean score for the group that did not listen to music is 996.33.
- The difference in mean scores for the two original groupings is 85.83.
- 100 trials are run in which the data are randomly assigned to 2 groups.
- 27 trials have a difference in means of at least 85.83.
- 38 trials have a difference in means of less than -85.83.

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Problem Card 2

Medical professionals are studying a new type of antidepressant that is meant to reduce the length of time needed to feel the effects.

20 people suffering from diagnosed depression are split into 2 groups at random. One group is given the current popular medication and the second group is given the new antidepressant. Participants in the study are asked to report how long it takes until they notice a lasting change in their mood.

The professionals want to know which antidepressant is better to prescribe to patients. Is there evidence that one medication is better than the other?

Info Gap: Is There a Difference?

Data Card 2

- The mean for the popular antidepressant is 8.9 weeks.
- The mean for the new antidepressant is 4.6 weeks.
- The difference in mean times for the original groupings is 4.3 weeks.
- 100 trials are run in which the data are randomly assigned to 2 groups.
- The difference in means for the randomized groups is approximately normally distributed.
- The standard deviation of the difference in means for the two randomized groups is 1.14 weeks.