Student Name: _____

# Roving Ranges

**The Four-Dice Prediction Game Handout** 3

As part of a game, you will predict the sum of four dice. Of course you can't predict it exactly, so you will choose a range of sums ("from ___ to ___"). If your roll is in the range, it's a "capture." Otherwise, it's a miss.

If you miss, you get no points. But if you capture, you get a number of points depending on the range. Use a strip in **Handout #4** to figure out how many points you get.

Use **Handout #2** to record your rolls and your range. Record 50 rolls and calculate your score.

**Note:** Play all 50 rolls using the same range. Also: you're a group, so collaborate on rolling and recording so it doesn't take so much time.

### The Poster

Work with your group to make a poster describing your strategy and results.

- Put your data distribution (**Handout #2**) on it!
- Put a box plot for the data on it. Make sure it corresponds to the distribution (making it the same scale is a good idea, or use **Handout #1**).
- Discuss how well your real box plot matched your prediction.
- Show what range you used. ("Our range was from __ to ___.")
- Record your results: how many points did you get in 50 rolls?
  Include how many hits, how many misses, and how many points you got per "hit."
  This should match the information on your data distribution. (from **Handout #2**)
- Explain the problem of picking the range.

  What's the advantage of having a narrow range?

  What's the advantage of having a wide range?

  Why did you pick the size of range that you did?
- Explain why you located the range where you did. (Location 5–15 is the same size as 15–25, but they are in different locations.)
- Leave room on your poster for something that's still coming!

### What comes later

After you have seen all the other groups' posters and had a discussion, you will amend your poster.

Imagine you're going to play the game again.

Based on everybody's reasoning and data, make a new prediction. On your poster, put:

- A heading such as "If We Played Again…"
- The range you would pick (from what to what?)
- How many points you get per capture for that range.
- How many captures you think you'll get in 50 rolls.
- Your predicted score.
- And, most important, why you chose the range you did.

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