

Loaded Dice Activity

Credit belongs to Holly Hartmann, from the Climate Assessment for the Southwest at the University of Arizona, for the idea.

Making the Loaded Dice

Materials:

- 4 foam cubes, 6-12" on edge (check craft stores for foam pieces)
- 6 weights (anything that's small and weights a few ounces)
- Scissors
- Heavy-duty permanent glue
- Black permanent marker
- Dice

Instructions:

- Using scissors, cut a slit on face of each of the cubes that is just deep enough for the weight. Slide one weight into each of two cubes, and slide two weights into each of the two remaining cubes. Seal the slit with glue and allow to dry.
- Using the permanent marker and a pair of dice as guidance, draw dots onto the foam dice. For each pair of dice (the light loads and the heavy loads), the loaded sides should be a 1 and a 6.

That's it! Your loaded dice are ready to roll.

Using the Loaded Dice

The loaded dice are a visual demonstration of the concept of a shift in probabilities. Loading the dice (especially with the lighter loading of just one weight) is an analogy for a climate pattern (such as El Niño or climate change) that makes a particular weather condition more likely. Loading the dice doesn't guarantee the outcome, especially with less of a weight, but it does make it more likely.

To demonstrate this concept, ask students to roll the lightly loaded dice 10 times (or 5, if it's a less patient audience!), and then load the heavy dice 10 times. Record the outcomes.

Then, explain that, for example, El Niño makes warm weather more likely up in the Dakotas. The warm tendency is like having the light dice loaded for a "6". A stronger trend, like the warming in the Arctic due to climate change, might behave more like the heavy loaded 6. La Niña can make drought more likely in Texas, acting like a heavy loaded 1. Climate change could make heavy precipitation more likely in the eastern US, behaving like a lightly loaded 1.

Enjoy playing with the dice!

Rolling the Light Loaded Dice

	Dice 1	Dice 2
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Rolling the Heavy Loaded Dice

	Dice 1	Dice 2
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		