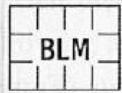




Activity 16.5 DESIGN AND TRADE BAGS



Provide students with a copy of the "Design a Bag" recording sheet shown in Figure 16.4 (see Blackline Master 40). Place students in groups and give each group a value on the probability continuum (e.g., $\frac{1}{3}$, $\frac{3}{4}$, $\frac{1}{6}$). Give students markers of two colors, and have them color the tiles a designated color (e.g., red) so that the probability of selecting a red tile is the probability they have been assigned. Once they have colored the tiles on the "Design a Bag" Blackline Master to match their fraction (e.g., $\frac{1}{3}$ are red, for example), the students trade papers. Each group now has another group's bag. With the new bag, students do the following:

Figure 16.4

A possible recording sheet for the "Design a Bag" activity (see Blackline Master 40).

Name _____

Color: ☐

Impossible Certain

1. They mark the probability line at the point they think matches the number of tiles colored red.
2. They use actual colored tiles and brown paper bags based on what is colored on the "Design a Bag" Blackline Master they received. They draw a tile from the bag (with replacement) 50 times and determine the fraction of times they have drawn a red tile. Remind students to shake their bag each time to ensure random sampling. Students can revise their mark on the probability continuum if they choose to do so.
3. They return the papers to the group that colored the Design a Bag and find out what the original probability was.

Remember, the purpose of this activity is simply to determine approximately where on the continuum the probability might be—not to actually calculate it. At the end of the activity, have students explain (on the back of the handout or in their journals) how they decided where to place their mark on the probability line. ELLs and students with disabilities can benefit from sentence starters, such as, "In the bag we received, there were _____ red and _____ blue tiles. We first thought _____. After we did our experiment, we thought _____. We picked this probability because _____."

From Van de Walle et. al. (2014). *Teaching Student-Centered Mathematics Grades: Developmentally Appropriate Instruction for Grades 6 – 8 (2nd Ed.)*. Toronto: Pearson Education, Inc. (p. 357-358).