



**“Hunger for Probability”:** In *The Hunger Games*’ post-apocalyptic North America, each year a boy and girl (each between ages 12 and 18, inclusive) from each of 12 districts are selected randomly from separate glass bowls of paper slips and then sent away for training for a nationally-televised tournament where only one of the 24 contestants survives. Aside from the ethical questions, this generates several mathematical questions such as:

- In the 73 previous years of annual Hunger Games, the winning person was from District 12 in exactly 2 of those years. If each district were equally competitive, what would be District 12’s expected number of winners?  
A) 1 B) 2 C) 3 D) 6 E) 12
- Is the selection of contestants a simple random sample (where each contestant or pair of contestants have the same chance of being picked)?  
A) yes B) no

Explore the sampling procedure with 7 students (each of one age):

AGE	12	13	14	15	16	17	18
SLIPS	1	2	3	4	5	6	7

- What’s the chance the 18-year-old is picked? A)  $1/18$  B)  $1/7$  C)  $1/4$  D)  $1/2$
- What’s the probability the 12-year-old makes it through all 7 years of eligibility without ever getting picked? A)  $1/7$  B)  $1/5$  C)  $1/3$  D)  $1/2$
- How do you interpret the caption in the *Hunger Games* movie ad (“may the odds be ever in your favor”) ?