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1. If a family decides to have 4 children, how many boys and how many girls will they have? We will use a simulation to discover the distribution of boys and girls.
a. Roll a die 4 times. A number 1-3 indicates a boy and a number 4-6 indicates a girl.
b. Record the number of boys and girls in a spread sheet.
c. Repeat steps $a$ and $b 15$ times.
d. Create a histogram of your data.

| Boys | Girls |
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2. Based on your simulation:
a. What is the most likely distribution of boys and girls?
b. What is the least likely distribution?
3. Make a tree diagram to illustrate the four children family distribution.
a. How many result in 4 boys and 0 girls?
b. How many result in 3 boys and 1 girl?
c. How many result in 2 boys and 2 girls?
d. How many result in 1 boy and 3 girls?
e. How many result in 0 boys and 4 girls?
f. What is the sum of the probabilities?

What is the probability of this event occurring?

What is the probability of this event occurring?

What is the probability of this event occurring?

What is the probability of this event occurring?

What is the probability of this event occurring?

