



## 50 : 50 Chances

### Data Table 1

#### Group members:

Write the number of boys and girls out of 6 tosses for each family.

Family	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Girls (Heads)															
Boys (Tails)															

### Data Table 2

Place a check in the appropriate box for each time the combination occurs in a family.

Possible Combinations	6 girls 0 boys	5 girls 1 boy	4 girls 2 boys	3 girls 3 boys	2 girls 4 boys	1 girl 5 boys	0 girls 6 boys
Number of Combinations							



# Probability Questions

Name:

Date:

1. Which combination occurred the most often (Data Table 2)?  
\_\_\_\_\_
2. Which combinations occurred the least often?  
\_\_\_\_\_
3. Why is using a coin toss a good method to show probabilities of having male vs. female children? \_\_\_\_\_
4. Using a Punnett square, there is a 50:50 probability of a couple having a boy vs a girl. Looking at your second data table, out of 15 families how many combinations gave you 3 boys and 3 girls? How accurately does your overall results match with the predicted outcome?  
\_\_\_\_\_  
\_\_\_\_\_

## **Written Journal Response:**

Explain why mathematical expectations of probability do not always match up to the experimental results.

## Answer Key for Probability Questions worksheet:

### Questions

1. Which combination occurred the most often (Data Table 2)?

depends on individual results

2. Which combinations occurred the least often?

depends on individual results

3. Why is using a coin toss a good method to show probabilities of having male vs. female children?

A coin has two sides, therefore, only two possibilities. There are only two possibilities of gender in offspring, male or female.

4. ANSWERS WILL VARY.

### Written Journal Response:

Explain why mathematical expectations of probability do not always match up to the experimental results?

Answers will vary. Main points to look for:

- probability is a mathematical prediction, like a weather forecast, but it is not guaranteed
- mathematical probability is more accurate when using larger samples