

Inheritance of disease.

In this activity we will review the occurrence of inherited disease from parents to their offspring. We will use cystic fibrosis, an inherited disorder caused by inheriting two copies of the recessive allele, as an example.

1. Work in pairs.
2. Find 2 Australian coins in your bag. Each coin contains two sides, one side with Queen Elizabeth's head (head, dominant gene (F)) and the other side with a picture (tail, recessive gene (f)). These will be used to represent the cystic fibrosis gene in a parent (coin).
3. Complete the following Punnett square to determine the theoretical probability of each phenotype and note it in the table below:



	F	f
F		
f		

4. Toss the coins on the ground.
5. Record the combination of alleles from each coin in the table below that will be passed to the offspring. Remember, each coin represents each parent and each toss can only turn a coin up one way and therefore a parent can only give one allele to each child. Toss the coins another 49 times.
6. Determine the percentage of offspring who will only have the dominant gene, the recessive gene and those who are carriers.
7. How close did your actual results come to your expected results? Why?

	Tally	Experimental Probability	Theoretical Probability
FF			
Ff			
ff			