



5.6.1.1 find all possible outcomes of simple experiments using such methods as lists, tree diagrams, area models, and organized lists.

- Go to: <http://www.poissonrouge.com/kidscorner/index.htm>





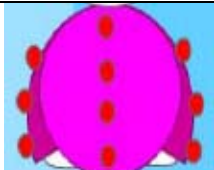
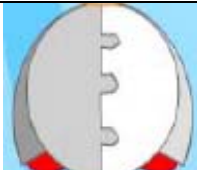

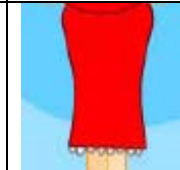




- Click on the face with red glasses.
- Notice that three people have shown up on the new page. Here is one example:





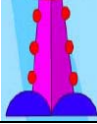
- Click on the , then click the  again. You will notice three different people have shown up on your screen.
- Each time you enter the page, there are different possibilities for the configuration of the figures that appear. Each has different possibilities for a head, a body and legs.

1. In this lesson, you will figure out how many different combinations are possible. Look at the table.

			
Head 1	Head 2	Head 3	Head 4
			
Body 1	Body 2	Legs 1	Legs 2
			

If these are the possible heads, bodies and legs, how many possible outcomes exist? Explain your answer using words, pictures, and/or numbers.

2. Look back at the website. There are many more possibilities than simply 4 heads, 2 bodies and 2 legs. First, determine the number of possible heads, bodies and legs on the first figure by clicking on each body part:

Number of Heads	Number of Bodies	Number of Legs
		
_____	_____	_____

Explain how many possible outcomes exist for the first figure on the screen. Use words, pictures and/or numbers in your explanation.

3. Go to another part of the site: <http://www.poissonrouge.com/artgallery/index.htm>



Click on the image of Marilyn Monroe

As you click on each of the images, you can change the color of the background, the hair, the face, the eye shadow and the lips.

Your task is to figure out how many different combinations of Marilyn Monroe are possible. Make sure to show your work.

Answers:

1. 16 Outcomes:

H1 B1 L1	H1 B1 L2	H1 B2 L1	H1 B2 L2
H2 B1 L1	H2 B1 L2	H2 B2 L1	H2 B2 L2
H3 B1 L1	H3 B1 L2	H3 B2 L1	H3 B2 L2
H4 B1 L1	H4 B1 L2	H4 B2 L1	H4 B2 L2

2. Heads: 11 Bodies: 11 Legs: 11

$$11 \times 11 \times 11 = 1,331 \text{ combinations}$$

(If you consider all three figures, the solution is much greater. There are 1,331 different configurations possible for one person on the screen. However, if you consider that there are 3 figures that appear on the screen, the mathematics becomes much more interesting. The number of screens that can actually appear is 11^9 , or 2,357,947,691!)

3. Background: 6 colors; hair: 6 colors; face: 6 colors; eye shadow: 6 colors; lips: 5 colors.

$$6 \times 6 \times 6 \times 6 \times 5 = 6,480 \text{ combinations}$$