

# Your Perfect Mate

Objectives: To provide fun practice with Mendelian crosses. To recognize that offspring may look very different from their parents. To see that each parent provides half the genes even though they may not be expressed.

Ca State Content Standards 7<sup>th</sup> Grade: Genetics 2a and 2c

## Procedure:

First each student decides on his/her own genotype based on a best guess from any information about relatives. For the purpose of this activity we agree that talent is hereditary, each student decides his/her “talent genes” based on success and enjoyment of certain activities as well as parents’ talents. For example if a student is in the band she puts down a gene for music. If she gets an A in math and science maybe she should put down a gene for mechanics. If English another student’s strength, he puts down writing. If his greatest love is baseball he puts down athletics. All students must choose two genes, and they should be double only if it seems to be an outstanding talent.

Name: \_\_\_\_\_

Trait	Gene	Gene	Your Phenotype
Talent	_____	_____	_____
Hair Color	_____	_____	_____
Eye color	_____	_____	_____
Height	_____	_____	_____

Now we choose your perfect mate! The containers are passed around by FATE (the teacher) and each student draws two genes for each trait. This will be the genetic make up of his/her spouse. (Invent a name for your spouse)

Name: \_\_\_\_\_

Trait	Gene	Gene	Your Phenotype
Talent	_____	_____	_____
Hair Color	_____	_____	_____
Eye color	_____	_____	_____
Height	_____	_____	_____

\*To figure the phenotype for talent, we do creative combining. If there is a gene for music and one for athletics, he could be a ballet dancer. A music-mechanical combo could be a guitar maker. Be creative.

- Use the squares below to create Punnett squares for each trait. Your traits go in the top two open squares, your mate's traits go into the side (left) two open squares.

Talent		

Hair Color		

Eye Color		

Height		

- You will create 5 children from the information in these Punnett Squares. Decide the gender by flipping a coin (heads=girl; tails=boy). Create a name for a child. Fill in the chart below, starting with the name. Use the #1 square to create the first child genetic make-up; the second square to create the second child and so on. The fifth child can be your choice, but needs to be in the genetic "mix"(from one of the punnet squares).

#1 = top left box                      #3 = bottom left box  
 #2 = top right box                    #4 = bottom right box

Child #1 Name: \_\_\_\_\_ Gender: Boy or Girl (circle)

Trait	Genotype	Phenotype
Talent Square #1		
Hair Color Square #1		
Eye Color Square #1		
Height Square #1		

Description: \_\_\_\_\_

---

---

---

Child #2 Name: \_\_\_\_\_ Gender: Boy or Girl (circle)

Trait	Genotype	Phenotype
Talent Square #2		
Hair Color Square #2		
Eye Color Square #2		
Height Square #2		

Description: \_\_\_\_\_

---

---

---

Child #3 Name: \_\_\_\_\_ Gender: Boy or Girl (circle)

Trait	Genotype	Phenotype
Talent Square #3		
Hair Color Square #3		
Eye Color Square #3		
Height Square #3		

Description: \_\_\_\_\_

---

---

---

Child #4 Name: \_\_\_\_\_ Gender: Boy or Girl (circle)

Trait	Genotype	Phenotype
Talent Square #4		
Hair Color Square #4		
Eye Color Square #4		
Height Square #4		

Description: \_\_\_\_\_

---

---

---

Child #5 Name: \_\_\_\_\_ Gender: Boy or Girl (circle)

Trait	Genotype	Phenotype
Talent Square #5		
Hair Color Square #5		
Eye Color Square #5		
Height Square #5		

Description: \_\_\_\_\_

---

---

---

3. On the back side of this paper (or another piece of paper) create a family portrait of your family—all 7 people. You may draw the people, cut them out of paper, or use magazine photos. Make sure you show each of the 4 traits for each person.