

Name _____ Date _____ Class _____

Use after Section 27:2.

COULD THE TAYLOR'S SON BE COLOR BLIND?

A genetic counselor had several appointments every morning. Today, he was asked an interesting question. The Taylors' son is going to take driving lessons. He has been having trouble seeing road signs clearly. The Taylors want to know if their son is color blind. They have several color blind relatives who see red and green objects in shades of gray. The counselor asked some questions and drew Punnett squares.

Use the information that follows to hypothesize what the counselor will say.

Mr. Taylor is not color blind. His father and his brother are color blind for red and green. His mother and his sister can see red and green. Mrs. Taylor and her relatives can see red and green. They are not color blind.

Analyzing the Problem

1. Would you hypothesize that the gene for color blindness might be on a sex chromosome? Why?

2. If the color vision gene is on the X chromosome, how many genes for color vision does a woman inherit? _____ From whom? _____

3. If the color vision gene is on the X chromosome, how many genes for color vision does a man inherit? _____ From whom? _____

Solving the Problem

1. Use the Punnett squares below to show the genes for color vision in Mrs. Taylor's family. Call the gene for color vision *C* and its color blind form *c*.

Mrs. Taylor's Family

		Her father	
		C	Y
Her mother	C		
	c		

Mr. Taylor's Family

		His father	
		c	Y
His mother	C		
	c		

2. From which parent could Mr. Taylor's brother and sister inherit a *C* or *c* gene? _____

3. How can Mr. Taylor have normal color vision while his brothers cannot see red and green?

4. Is it likely that the Taylor's son is color blind? Explain. _____
