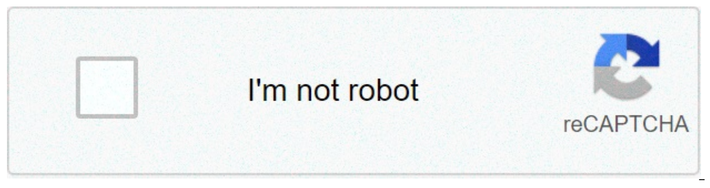

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Bikini bottom incomplete dominance

Students in Action I begin this lesson with this display of flowers. In the last lesson, Genetics, Introduction to Punnett Squares, we concluded with this image. Some traits are blended when combined. Incomplete dominance is one of the ways a variety of flowers are created. Mendel's laws helped us create Punnett squares where alleles were either dominate or recessive. Today we will revisit the residents of Bikini Bottom as we explore how to use Punnett squares to predict the outcomes when two traits are blended that is there is incomplete dominance and a combination of alleles creates an intermediate color. In this example, white flowers and red flowers yield genetic offsprings that are pink. I continue this lesson by working through the first three problems with students. The problem set is introduced with a story about flowers. In this case red and blue flowers, which when crossed produce purple flowers. This is not unlike the example I have already shared with students. We determine the genotypes for each of the colors or flowers. Questions 2 and 3 asks us to complete the Punnett squares for different cross of Poofkin flowers. We review the definitions of genotype and phenotype for each problem. These are vocabulary words that I want my students to master so I really appreciate that each question asks the students to identify the genotype and phenotype for the offspring. I ask the following questions to clarify student understanding. What does the Punnett square tell us? The genotypes of the offspring. How do you know the phenotype? We determined which letters to use in question 1. The next questions probe student understanding of probability. I want to be certain that they understand that the Punnett square is a prediction over time. What other information does the Punnett square tells us? The probability of each flower color. Is it possible in question 3 that we could cross the purple flowers and end up with only purple offspring? Yes, the Punnett square only predicts the probability for offspring, not what actually happens. How is predicting probability using Punnett squares like flipping a coin? When you flip a coin, say 10 time, you might have 7 heads or tails in a row instead of having an equal number of heads or tails. You have to flip the coin a large number of times to see exactly 50% heads and 50% tails. The Punnett square predicts the results over time. I challenge students to complete the rest of the problem set themselves, then check their work with a neighbor. I walk around the room as they are working and answer clarifying questions. When I speak of clarifying questions, I am expecting that students will ask specific questions and not give a blanket statement such as "I do not understand any of this!" If students do make such a statement, I redirect them to show me what specifically they do not understand. Often students will start explaining what they think they do not know and before they finish proclaim that they get it now. This problem set does require careful reading. In this video I share some of my favorite things about the organization of the student practice sheet. Please copy and paste this embed script to where you want to embed Genotypes, Punnett, Spongebob, Phenotypes, Dominant, Jellyfish, Plants, Percentage, Bikini, Heterozygous, Genetics, Scientists, Bottoms, Quia, Www.quia.com Bikini Bottom Genetics Name Scientists at Bikini Bottoms ... - Quia