**Punnett Square Praxis Paper**

Punnett Squares are a valuable tool when teaching the theory associated with Mendelian Genetics because it is a simple starting point for the basic laws. In a favourable learning environment, this skill can assist analysis of basic genetics by offering simple manipulations of known factors to attain possible unknown factors.

To facilitate learning, an acquisition guide has been created and utilized in the introduction as a means to assess prior knowledge, to utilize some basic terminology in context, as well as to spark interest in the topic at hand. Terminology will be introduced and reinforced frequently throughout instructional discourse to ensure that students are given ample opportunity to get comfortable with the language. Every effort will be made to ensure that students have a uniform foundation of critical terminology by encouraging students to share their understanding with others in a safe and inclusive atmosphere or seek assistance, if necessary.

To promote effective learning, examples are collectively shared in a constructive manner, whereby learning is appropriately scaffolded through modeling with a skilled educator. After the successful completion of multiple exemplars as a class, the students will be placed into mutually-beneficial groups to collaborate with scenarios that transfer and reinforce the concepts presented from the lesson.

In today’s classroom, the need for differentiation is paramount with an increase in student diversity. (Vacca, Vacca & Mraz, 2013). Sensitive recognition of an individual’s strengths and needs is a skill and a necessity. Thus, we are mindful of the potential for dominant or recessive human characteristics being misconstrued. To ensure that insinuations of preferential or exclusionary representations were impossible; we address genetics utilizing the fictitious form of alien modeling. The lecture also integrates multiple forms of literacy through tools embedded in the lesson and activity that tap into many learning styles. The presentation offers visual and aural component as the form of stimulus to benefit either type of learner. As well, a portion of the activity is hands-on to facilitate the kinesthetic learners. The PowerPoint and worksheet appeal to those learners who benefit from the reading and writing component of education, with a story added to the worksheet. Additionally, students are given freedom to apply their own shorthand to answers, thus encouraging students to find meaning in their integration process.

To master the skills of the Punnett Squares, the student must practice repeatedly through an assortment of unique and innovative configurations, to ensure that retention will not be a challenge. To strengthen connections and support authentic learning, the culminating activity highlights both inductive and deductive methods of learning. By utilizing an activity that incorporates both general and specific models of learning, students can make a greater connection between how answers are obtained, as well as, how to work backward from answers. As stated in the text (pg 139) “…practice sessions are designed to provide experience with the strategy. Students should reach a point where they have internalized the steps and feel in control of the strategy.” As a means of endorsing this internalization, evaluation of the worksheet to ensure and maximize comfort with Punnett Squares is suggested.

As we strive to be the most effective teacher possible, we must ensure that we continue to offer multiple platforms to engage and empower our students, so that they may progress individually.

**References**

Vacca,R. T., Vacca, J.L., & Mraz, M. E. (2013). Content Area Reading: *Literacy and learning across the curriculum* (11th ed.). Toronto, ON: Pearson Education.