

Mrs. Grace Martin's Vision of Science Teaching

My vision of teaching science is to engage students in multiple ways to enjoy, investigate, collaborate, apply, analyze, and create scientific information and explanations. Fun and collaborative classes should combine hands-on activities with carefully designed teacher instruction, videos, demonstrations, and research projects to enable student discovery and learning.

I envision teaching science as a cooperative journey into the principles, facts, and unknowns of the natural world around us. A good science education makes connections in between concepts. I believe in teaching the relationships between structure and function, the applications to technological advancements, the impacts on the environment, and the potentials for future improvements. These exemplify the multiple understandings involved in the knowledge, skills, and attitudes that the Alberta curriculum wishes to convey.

However, I also believe that teaching science goes far deeper into individual students' lives. What do they care about? What interests them? How do they feel that they can make a difference through their science education? I believe that a good teacher gets to know his or her students to draw in examples and activities that intrigue them. A good science teacher facilitates exploratory activities for his or her students, engages them in thoughtful questions to encourage further inquiry, and explains concepts clearly with an open and approachable disposition that establishes positive relationships.

Since I envision myself teaching high school physics classes, I always think about the value of a flipped classroom. I do not think that students benefit from lecture-based class time. My class time will be full of activities and problem-solving practice in a safe and collaborative environment. I feel that I can best enable my students to walk the path of success when they have additional guidance on practice problems. I also think that students are more likely to do their homework if it is "easy." A set amount of time to watch a video certainly outweighs the alternative—

meaning hours of frustration while attempting to complete assignments. In this way, I hope to give equal opportunity to all of my students regardless of their previous academic level.

I believe the following statements about teaching and learning:

- Teachers need to be adaptable for each situation that they find themselves in.
- Every individual has a need to feel loved and accepted.
- Students learn by making personal connections to the material.
- Hands-on and cooperative learning is fun and effective.
- Play and sensory activities engages students' attention.
- Youth respond well to teachers who treat them with a caring, trustworthy, and respectful attitude.
- It is important for students to have a safe, structured, non-judgemental environment in order to learn at their optimal potential.
- A great teacher goes beyond the curriculum to inspire, motivate, and facilitate a student's personal and career goals.
- Teachers help students to realize their own potential through encouragement and challenging activities.
- In order to teach healthy self-esteem, a teacher must provide positive reinforcement and embody confidence. One teaches respect by showing respect.
- The teacher's voice should not be the only thing a student hears all day.
- All students learn differently, it is my job to figure out what works best for each individual and bring those learning strategies into my classroom.
- I never make the assumption that I am being understood. Formative assessment is crucial to the learning process.
- Encourage critical thinking: teach HOW and not WHAT to think.
- The relationship between self-esteem and learning is phenomenally important.
- Teachers should dwell in the learner's place with them.