

Testimony of
Mrs. Amy Attard
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Good morning committee members and national winning teams. My name is Amy Attard and I teach seventh grade science at West Hills Middle School in West Bloomfield, Michigan. I have been teaching for six years in the Bloomfield Hills School District, which serves suburban students north of Detroit. I would like to take this opportunity to share with all of you the wonderful enriching and engaging experiences students can have as part of their science class.

The Toshiba/National Science Teachers Association ExploraVision Program is just one venue that provides a challenging opportunity for students to become excited about science. This program encourages students to think of an invention that could come to life twenty years in the future. West Hills Middle School has been participating in the ExploraVision Program for over 10 years; it has become a tradition at the seventh grade level. This year we were fortunate to have one of our teams take home the second place title in the nation for the seventh-ninth grade category. The Intra-Trachea Breathing System Team (I-TBS) team made up of seventh graders Claudia Cooper and Samantha Tarnopol chose to work successfully as a team of two, which meant they had double the amount of work compared to a team of four. This year's top winners were selected from a group of 4,346 team entries. Through Claudia and Samantha's hard work and determination they won a number of prizes for themselves and West Hills alike. West Hills was awarded a Toshiba laptop computer and the mentor, Russell Purdy, and I were awarded Toshiba HD camcorders, along with Claudia and Samantha. In addition to the amazing technology, both Claudia and Samantha were awarded a U.S. EE Savings Bond worth \$5,000 and an all expenses paid trip to Washington D.C to attend the ExploraVision Awards weekend along with their families and teachers. In addition to Claudia and Samantha's great success, nine other teams from West Hills earned honorable mentions in the ExploraVision competition. Along with receiving notoriety, the honorable mention groups also received a gift for their accomplishments in addition to every participating group receiving an award and a small participation prize. We continue to promote the ExploraVision Program at West Hills because it allows students to think creatively, and provides them an opportunity to look into their future. In doing so, students are challenged to use their ingenuity to plan, research, and design a product that will benefit mankind. This model forces students to think globally, use problem solving skills and incorporate technology, all skills that are paramount in the future of education. Overall West Hills has done very well in the competition. For the past six years that I have been enriching students with this project we have always been awarded with at least one honorable mention team and in 2008 I had the privilege of coaching another team that also took home the second place national title.

The ExploraVision competition is part of a mandatory class assignment in both science and language arts classes. The unit is designed to be interdisciplinary between the two subjects, as both classes worked in tandem to complete the rigorous requirements of the program. Through their science class, students chose their own partners for the project. Each group was made up of seventh graders and they are all from West Hills. Two hours of each day, one hour in science and one in language arts, were devoted to work on this project, which was three weeks in duration. During science students worked collaboratively and in language arts they worked independently. In science the unit was looked at through the lens of scientific research and the process of the project was presented using the Design Cycle model. The Design Cycle model, which is part of the International Baccalaureate program, is a way for students to problem solve and continually evaluate and reflect on their process as they worked through the project. In addition to the scientific research aspect of the project, the students focused on collaborating and communicating with their team as they worked through the Design Cycle to brainstorm invention ideas and proceed through the research process. At the same time in language art's class students learned how to properly take notes from various sources, write a research paper, evaluate sources, and cite all of their information correctly. Overall, this project allowed students the opportunity to be creative and forced them to think 20 years into the future. But more importantly, through this project students developed the skills of being an inquirer, a problem-solver, and a communicator and hopefully they will take these skills with them as they move forward in school and eventually out into the real world.

In order to inspire students we looked at famous inventors and how their inventions have contributed to our everyday lives, and to stimulate the innovative minds of the students we posed the question "How can my creativity impact society?" In order for students to move forward they had to answer the following questions: 1) What did I want to improve? 2) Who was my audience going to be? 3) Why would people want my invention? These questions set the stage for students to investigate possible invention ideas, which then led to sketches and design briefs of each invention, and finally students researched the positives and negatives of each idea and its impact it would have on society. From their investigation, each group then collectively selected the idea they wanted to move forward with for the project. Russell Purdy and I provided the structure, deadlines, and rubrics for the students in both science and language arts class, while the students divided up the project equally amongst their team and set their own goals and expectations for each individual member. While working on this project, students researched information, interviewed family members who had knowledge in certain areas, and in some instances even held phone interviews with companies that sold products related to their invention ideas. The final piece of the project was the culminating research paper and the creation of the web page graphics, which provided a great opportunity for students to learn various drawing programs on the computer and actually see their process and invention come to life in front of their own eyes through their graphics they created.

In addition to the ExploraVision competition, I also encourage students to participate in other science competitions throughout the school year. Other science competitions in which some of my students participate in are the Science and Engineering Fair of Metro Detroit, The DuPont Challenge Science Essay Competition, and the SunWise with SHADE Poster Competition. Students have done particularly well in these science competitions. This year a current seventh grader took first place in the nation for her poster entry in the SunWise with SHADE Poster Competition and five students across grades seventh and eighth placed in the Science and Engineering Fair of Metro Detroit.

Overall STEM projects, such as the ExploraVision competition, continue to emphasize the relevance and real-world application of science, math, engineering, and technology. These projects also allow schools to showcase the amazing skills that many of our students possess; skills that might otherwise go unnoticed in the community at large. As teachers it is our role to make sure our students are ready for the future. Whether the future is the next grade level, college, or the workforce having a good foundation and knowledge in the areas of math and science are important in and out of the classroom. As our society continues to grow into a digital world, technology skills are becoming more of a necessity rather than just a skill. Furthermore, when looking at engineering the process of being able to problem solve, collaborate with others, and continually reflect is relevant in and out of the classroom and more importantly it is what makes students become inquirers. As curriculums continue to become more rigorous for students it is important for teachers and parents to work together and support students so they can reach their maximum potential and more importantly see the relevance in what they are learning in order to become life-long learners and successful members of society.