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Sample Lessons from Our Latest STEAM Book: *STEM to STEAM Education for Gifted Students: Using Specific Communication Arts Lessons with Nanotechnology, Solar, Biomass, Robotics, & Other STEM Topics* (ISBN 0-910609-63-2) by Harry T. Roman & Robert E. Myers. COST: \$27.00 Including P&H. <http://bit.ly/143Cm7i>

Lesson in Nanotechnology

THE BUILDUP

Writing a Thriller

We invite your students to write a “thriller” in this lesson. Because there must be a number of events in a thriller to create the requisite amount of tension, it is usually of novel length. Such an undertaking as an assignment is impractical, and so we say it should be the length of a short story. It is possible for your students to write a short version of a story that has the elements of mystery, intrigue, danger, and marvelous deeds, but it isn’t easy. Therefore, you will be pleased if some of your students are able to pull it off. Those who don’t should be given credit for trying.

The elements you are looking for in the stories are listed in the lesson. They can be used to evaluate the stories. They are:

- characters with memorable personalities
- danger (without it, the story isn’t a thriller)
- vivid descriptions of people and places
- a climax
- a satisfactory and plausible ending

Targeted Learner Outcomes: The student will:

- learn the elements of a thriller, and
- write a short thriller.

Buildup and Thriller Lessons

A. The original definition of nanotechnology was “to build things from the bottom up, with atomic precision.” Often we use that expression “to build up” to mean enhance or puff up someone’s confidence, reputation, or ego, as in “After the buildup, Charmaine’s reputation as an actress enabled her to land a part in the film.” You can build up people in many ways: publicity for entertainers, flattery for the gullible, and training for professionals.

B. Thrillers build up to a climax in popular literature. Events succeed one another in a way that creates suspense, and then a critical moment occurs. This formula never varies for the thriller authors such as Mary Stewart.

Write a story which has events that build up to a climax in which the tension is resolved. If you haven’t read a thriller recently, find someone who enjoys that type of fiction and get a recommendation of one to read. It will reveal to you how an author builds up the suspense in a plot and then devises a clever ending. Your story should be about the length of a short story. It should have these elements:

- characters with memorable personalities
- danger (without it, the story isn’t a thriller)
- vivid descriptions of people and places
- a climax
- a satisfactory and plausible ending

Lesson on Robotics

YOUR OWN ROBOT

Writing a Fictional Narrative

Robots are being designed to be more sensitive to what we want them to do, responding more flexibly, anticipating and adjusting to what humans desire. In this lesson, we presume that the robots imagined by your students can do remarkable things. The assignment is for them to write a brief narrative, describing what happens when a robot takes over an onerous job. The idea is for the imaginary experience to be quite memorable. If the student can put together events that are scary, hilarious, surprising, or astounding, the piece will be successful.

Your students are instructed to make their fictional narratives brief, but they should be sufficiently long so as to get the reader involved. Their narratives can be evaluated by these criteria:

1. Is there a narrator whose voice relates the experience?
2. Are the events presented in chronological order?
3. Is there a unifying action?
4. Are the characters portrayed vividly?
5. Is the setting described adequately?
6. Is the narrative successful in resolving the action and having a satisfactory ending?

Targeted Learner Outcomes: The student will:

- understand what a fictional narrative is, and
- write a fictional narrative about an experience with a robot.

Lessons on Writing a Fictional Narrative

A. Robots were originally conceived as machines that would do work that was highly repetitive and also to do work in situations where humans couldn't operate. The idea of something doing a job we'd rather not do is appealing, and so a few robots have been designed for such tasks as housework. The thought that has occurred to many people, however, is that if we have robots do all of the tasks we don't like to do we'll soon be flabby and indolent. Science and technology have relieved us of troublesome, boring, and dangerous jobs, but what will be the price if we eliminate nearly all of the jobs we don't like?

B. Pick one task that you really dislike. Imagine that a robot can be constructed to do the task and that you have purchased it. Write a brief narrative of what happens when your robot first takes over your job. Using your imagination, conceive of an incident with your robot that is amusing, disastrous, frustrating, or exhilarating.

The genre called for here is **fictional narrative**. Perhaps the most famous fictional narrative is *Don Quixote* by Miguel de Cervantes. Your fictional narrative will be a great deal shorter than his, however. It should be just long enough to relate the events and produce a satisfactory ending. Events in a narrative are related in a chronological order. The fictional narrative is usually related by the author. There is a plot or unifying action. In addition, the reader should get a good picture of the characters and setting.

Excerpts from the Publisher's Introduction

STEM to STEAM Education for Gifted Students demonstrates how to successfully integrate the STEM Curriculum with excellent Communication Arts lessons to achieve the beginnings of a 21st century curriculum. Moreover, the authors provide a rigorous program for educating our greatest natural resource, the gifted children of America. Both authors are highly qualified to teach gifted students by using an integrated STEM curriculum, or what is presently called *STEAM education*. Harry T. Roman has worked for many years as a professional design and electrical engineer. For the last ten years, he has also worked at the Thomas Edison Institute and in the New Jersey Public Schools where he provides advanced instruction in technology and science education. Robert E. Myers has been a classroom teacher of the gifted and curriculum developer in the areas of creative learning and communication arts. He has produced many instructional materials in these subject areas that have been applied by teachers across the nation. Please read the biographical statements at the end of the book in order to obtain more information about their extensive and pertinent educational work.