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Feature Story

RIO RANCHO, N.M. - Watching a burning car tumbling down a cliff isn't the typical school day for most high school students. But sights like that are becoming a tradition at Rio Rancho High as part of the school's forensics curriculum.

On a recent Thursday morning, forensics students in the class of Mary Robinson gathered behind the school to watch the flaming BMW tumble down the steep cliff that runs along the backside of the campus. The car was the first step in creating a murder mystery students must solve.



Each year, Robinson comes up with an elaborate, and realistic, murder scene. Students must use the skills they learn in class to find out who did it. The teens are split into teams, and it's a race to see which solves the crime first.

This year's murder involved the discovery of a body in the trunk of a burning car that belongs to a teacher. Rio Rancho Fire Rescue volunteered to participate in the exercise. Fire crews started the car on fire and pushed it off the cliff. A crew waited below to put out the flames. Students must try to find out when the murder occurred, the owner of the car, with whom the victim was last seen, possible motives for the crime and what kind of weapon the killer or killers used. "The more information that is gathered," Robinson said, "the more likely the students are to solve the crime."

As in real life, pulling off the perfect crime is almost impossible. Robinson spends hours coming up with an idea for the murder, lining up all the necessary materials, writing a back story and creating a realistic crime scene. Even with the preparation, things do not always go off quite as planned. In this case, the plan was for the fire department to set the car on fire and launch it off the cliff. The hope was that the car would have enough momentum to make it to the bottom of the hill. There was a small problem: "The car seems to have been left in gear," a firefighter on top of the hill radioed to battalion chief Sean Bergen, who was standing at the bottom of the cliff. "It's stuck in gear?" Bergen said. "Yes, in gear," the firefighter said. "Mary, the car was left in gear," Bergen said.



The pronouncement was followed by laughter from not only Robinson but her students and the firefighters. But the firefighters didn't let a little thing like a gearshift stop them from completing the task at hand.

Feature Story

They doused the flames, reached into the car and popped the gear. Moments later, the car was sailing off the cliff enveloped in flames. The momentary delay meant the flames were not as big as planned and the car had less of a running start before flying off the edge. As a result, the car didn't quite make it to the bottom so students had to trek up the cliff to look for clues.

The class has become a favorite and has grown from one to several sections. Parents Terry and Sherry McCabe came to watch the event. Their daughter, Micah McCabe, who was home-schooled until eighth grade, is a senior at the school and enrolled in the course. "She loves the class," Sherry McCabe said. "It's been interesting and exciting for her. It's just neat that Rio Rancho High School will support their teachers to do something like this and that teachers will go all out to help students learn."

About the Fearless Forensics Teacher: "I've been teaching Forensic Science for ten years and three years ago I integrated Kendall Hunt's Forensic Science for High School program into my curriculum. Many people are surprised that forensic science is being taught in high schools, and frequent responses include, "Why didn't they have classes like that when I was in high school?" and "Aren't you just teaching them how to get away with committing a crime?"

Well, the focus of my curriculum and Kendall Hunt's program is the same: excite students about science by applying what they've already learned in other science classes in a meaningful, real-world way. In the course, students are using multiple disciplines to apply science concepts to solve problems, and they must use observations, data analysis and logical reasoning in their investigations. The Kendall Hunt program allows teachers to pick and choose activities from the program that are embedded in each chapter. Teachers can differentiate instruction to different levels of students by using the going further sections of the chapters and doing the more advanced labs.

Best of all, teaching the course is a blast! (By the way, to answer the "are you teaching them to get away with a crime?" question; by the end of the course, students realize how difficult it is to not leave traces of themselves behind wherever they go!")

- Mary Robinson
High school teacher
Rio Rancho High School
Rio Rancho, NM

Doing Science

Teaching Tips for Teachers by Teachers

"Over the years, the single most important guiding light I have followed in my teaching is something I learned from internationally known educator (a local science teacher and friend) Harry Wong. I highly recommend to use this to all teachers:

'Do something every day in class to make it a special day for your students.'

- Harry Wong, Science Educator

Do all you can so that the student experience in your class stands out in dramatic contrast to the usual background of the school day routine. Whenever possible, make it relevant to the current topic, but every day, do something crazy, off-the-wall, weird, dramatic or unexpected. Your students will begin to look forward to coming to your class, not knowing WHAT to expect.

Your class will become the topic of conversation around dozens of dinner tables each evening (you'll have real "parent involvement!"). Most importantly, you will have your students' attention; and as you well know, you can't teach them much unless you have their attention!

Here are some examples to engage your students in class:

1. Learn some simple sleight-of-hand magic, or get some easy-to-use special effect devices from a magic shop, practice your presentation, then DO it in class in an appropriate context to make a point about your current topic.
2. Spend extra time in preparing your daily lessons to think of some unique (and startling) way to make the lesson memorable. Do something which reaches all the senses. Remember, your goal as a teacher is for your students to remember and understand. We remember best that which is associated with a dramatic experience, so be dramatic!
3. Use illusions, optical and otherwise, wherever appropriate. The real world is filled with illusions ("movement" of sun, moon, stars; size of moon, "bowl shape" of sky, seeming perfections of the intricacies of life (it all seems "designed"), seeming permanence of species (never seem to change or die out). Science has been so very effective in revealing the realities of nature, of cutting through those illusions.

This more accurate knowledge of the real world enables us to better prevent and treat diseases, reduce pain and drudgery, and go to the moon and beyond. It is useful (and fun) to remind students from time to time of the existence of illusions and the power of science in dealing with them.



Doing Science

Teaching Tips for Teachers by Teachers (continued)



4. If you play a musical instrument (even badly!), incorporate it from time to time, as appropriate, or even crazily inappropriate! Create and find online “songs for science”; sing them with students.
5. Take another look at all the topics you deal with in your course... especially the drier, less interesting or harder-to-teach topics, and brainstorm ideas to make those topics more exciting, dramatic or attractive.
6. IS YOUR COURSE RELEVANT TO CURRENT STUDENT INTERESTS?
If your students seem unmotivated (all too common), make every effort to show how elements of your course fit into those interest. In fact, consider building your course around some practical theme. An excellent theme for most science courses, a topic always of some general interest, is FORENSIC SCIENCE, the subject of CSI (Crime Scene Investigators), currently enjoying popularity in a few TV series. This is one of the few examples of applied science which actually applies the PROCESS of science: solving problems based on the analysis of evidence. Furthermore, forensic science is largely an example of the historical science (similar to paleontology, astronomy, geology, and evolutionary biology). Take a look at a crime scene scenario as a start to your lesson.
7. I was once taught that students learn best from those whom they love, those they care about. To be a truly fulfilled and effective teacher, do all you can to earn that love, admiration, and respect. It begins with caring about your students, their welfare, and their success. You can make it happen!

~Larry Flammer
“Larry’s Tips for Teachers”
Retired Teacher of 38 years
Del Mar High School
San Jose, CA

Doing Science



Digital Learning

Today's economy calls for online solutions for teachers

"Considering today's demands on teachers, not to mention increased travel costs, it just makes sense to offer more online solutions for teachers in a format that is flexible and easily accessible.

We are creating an online suite of science products to meet the needs of a 21st century learning environment. These products will be available to adopters of our programs and will provide our adopters with online teacher editions, classroom resources – such as whiteboard interactivity, test banks and test generators, student editions, and online collaboration areas for both teachers and students to do group work.

A prime example of exciting interactive components is the Forensic Science for High School's virtual autopsies. Students "crack the case" by examining a virtual victim and follow the clues to deduce the cause of death.

We will also be supporting our programs through Professional Development on Demand. These will be short training segments that a teacher can access anytime anywhere to get the help they need with prepping and presenting a specific lesson. We will be developing Teacher Initial Training for our programs to be accessed online as well. This will help first time teachers of the programs get started and feel confident in the material as well as how to teach the curriculum."

- Sheri Glew
Senior Manager of Digital Learning
Kendall Hunt Publishing

"We are committed to improving our products and services through the use of interactive digital learning," said Charley Cook, Vice-President of Kendall Hunt's K-12 Division. "It isn't enough to simply offer technology components with a textbook adoption anymore. Our customers live in a world where they expect a custom fit to meet their specific needs, and we feel that we can accomplish that through a digital learning environment."

Confident Teachers

Resources

Elementary

Check out abcteach.com for tons of free experiments, printouts, and teacher tools to make your job easier!

Go to www.abcteach.com/directory/basics/science

SEEDS (Science Exploration and Education Discovery Series) was developed by The New York Botanical Garden and will help your K-5 students with their science literacy through fun, hands-on lessons! All lessons are directly linked to National Science Education Standards.

www.kendallhunt.com/seeds
800.542.6657

Middle School & High school

Do you want your students to make the connection between their environmental science course and real life? View these helpful resources:

Plant database: <http://plants.usda.gov/>

Environmental Connections, 2nd Edition

Will help your students make the connections between their science textbook and the world outside of the classroom!

Many textbooks include a chapter or some discussion of environmental topics, but often the presentations are cursory, out-of-date, contain bias, or provide inadequate coverage of important scientific concepts. Environmental Connections will help you and your students examine environmental issues in greater depth.

For each topic, the authors have located a range of resources that can be helpful in researching issues further, including:

- Background information that explains the topic in clear, simple terms
- Materials that cover the scientific concept in depth
- Sources of data for further analysis
- Classroom labs and activities

ORDER ONLINE: www.kendallhunt.com/elc
ORDER by PHONE: (800) 338-8290
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