



February 2023

### ARGUMENT-DRIVEN INQUIRY IN

### MIDDLE AND HIGH SCHOOL SCIENCE CLASSES

#### FEBRUARY DIVERSITY DATES

##### Black History Month

**February 14:** Frederick Douglass' Birthday and St. Valentine's Day

**February 15:** Nirvana Day is the annual multicultural festival commemorating the death of the Buddha once he reached Nirvana. Buddhists celebrate Nirvana Day by visiting temples or monasteries and meditating.

**February 15:** Susan B. Anthony's Birthday

**February 20:** Presidents' Day

**February 22:** Ash Wednesday, a day of fasting and prayer that kicks off the season of Lent in Christianity. Catholics celebrate Ash Wednesday by heading to mass and having ashes drawn in the shape of a cross upon their forehead.

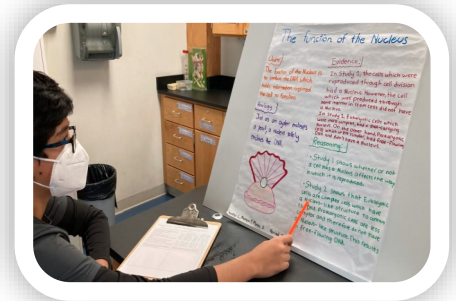


Just as technology has evolved over time, so has science instruction. In the past, the emphasis on science instruction was deeply embedded in content, memorization, and labs that reiterate scientific principles with little student inquiry. Since the introduction of the NGSS (Next Generation Science Standards/NJSLS), the instructional focus has changed to embed a three-dimensional approach to learning. The three-dimensional approach intertwines content with science and engineering principles (SEP) and crosscutting concepts (CCC).

Some examples of Science/Engineering Principles include:

- \* Constructing and designing solutions;
- \* Engaging in arguments from evidence;
- \* Carrying out investigations, and evaluating information.

The crosscutting concepts include critical thinking skills such as cause and effect, and identifying patterns. When these three dimensions come together, science learning becomes a more authentic and student-driven experience.



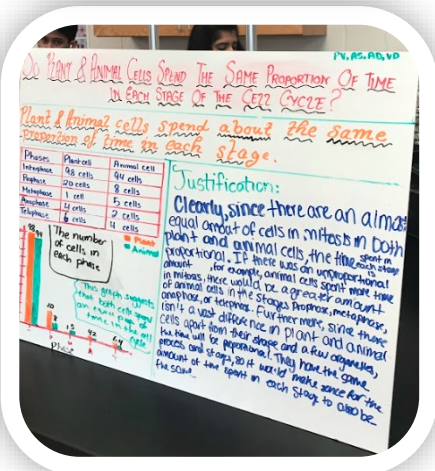
Parsippany science educators are designing experiences in the science classroom that build these critical skills. One way we do this is through **Argument-Driven Inquiry**, a multi-step approach to science where students are provided a guiding question or problem to solve. Students use background knowledge from class and readings to collaboratively plan out an investigation and create a lab proposal where they try to solve a problem or explore a phenomenon.

This planning process allows students to learn the critical elements of creating a controlled experiment that derives usable data. Part of the planning piece also involves the students determining how they will collect and present their findings to an audience (i.e table, graph, etc.).

Once the experiment is designed and completed, students analyze their data and create an argument board. The argument board includes their answer to the guiding question (claim), evidence (data collected), and a justification or reasoning section where the evidence is explained and tied to scientific principles. Students then participate in a peer feedback gallery walk where they provide feedback identifying areas of strength and ways to improve either the experiment itself or a portion of the argument board. Once the peer review is complete, the groups then meet to review their feedback and revise their work before submitting their final findings.

These lessons combine science instruction with critical skills in communication, scientific and information literacy, and self-management. Additionally, the high degree of student ownership and communication in these tasks results in strong student engagement and increased student achievement and academic confidence.

*Thank you to Rachel Villanova for contributing to this article.*



## ***NO VAPING!***

One of the district's Strategic Planning Goals is to establish programs and opportunities that develop a district-wide culture of wellness. Toward this end, all schools have developed programs designed to teach empathy, reinforce positive physical and mental health behaviors, and promote a community of caring.

A strong focus on physical and mental health includes direct instruction on dangerous substances and behaviors, including vaping and smoking. The middle school Advisory programs have especially focused on **anti-vaping**. In addition to assembly programs from state and local law enforcement on substance abuse, the Student Assistance Counselors have held small group meetings with students to discourage vaping. Earlier in the school year, Chief of Police Rich Pantina and I sent a [Parent Letter September 2022](#) to families identifying the consequences for smoking/vaping on school grounds.

As a reminder, smoking/vaping is prohibited on school grounds. Students in possession of tobacco products, including electronic smoking devices or their cartridges/oils/waxes/components, and/or smoking/vaping while on school grounds will be subject to a two (2) day in-school suspension.

Further, since the contents of an electronic smoking device cannot be determined through casual observation or easily tested, students in possession of electronic smoking devices/components will be considered under suspicion of being under the influence of drugs while at school as would any student in possession of anything that would constitute drug paraphernalia. Therefore, the school will contact a parent/guardian, who must immediately take the student for a drug screen and physician's clearance. A positive screen or verified possession of drugs/alcohol will result in four (4) days of out-of-school suspension for a first offense, ten (10) days for a second offense, and indefinite out-of-school suspension pending Superintendent's review upon a third offense. All offenses require a substance abuse evaluation by an accredited facility and adherence to their recommended counseling plan.

All offenses carry co-curricular activity and athletic suspensions. All positive drug screens must have a second drug screen showing lower levels prior to returning to school. In other words, it's a big deal to get caught vaping at school.

We urge parents to talk with your children about the consequences of vaping. Resources such as [Vaping—What You Need to Know and How to Talk With Your Kids About Vaping](#), as well as contacting the school counselors can help guide these important talks with students. Together, we can work to keep our children safe, healthy, and ready for all the wonderful opportunities available to them in Parsippany Schools!



### **SPELLING BEE RESULTS**

Congratulations to these Grade 5 students for their achievement in the Women's Club 5th Grade Spelling Bee, held on January 13 in the Parsippany Hills HS Auditorium.

After 29 rounds, the winners were:

First Place: Yogita Pansare, Knollwood School

Second Place: Rishaan Sharma, Northvail School

Third Place: Vaikha Bheemana, Knollwood School

