

# GATEWAY

**December, 2016**

**Mrs. Anderson,  
Mrs. Contrino,  
Gateway Teachers  
Grades 6-7**

## **Newsletter Highlights:**

- **Mission**
- **Tier 3 Intensive Supports**

### **MISSION**

To support **ALL** students through talent Development and to identify, challenge and encourage academically advanced and creative thinkers.



## **STEM**

**Grade 6:** Students expanded their “Tools of a Scientist” by developing their own inquiry based activity. Using a guided inquiry activity which tested the validity of the “five second rule” as our impetus, students brainstormed other things they wondered about bacteria. These questions were then developed into testable questions and investigations were developed. Some questions included:

- Is there more bacteria on places we touch than places we walk?
- Do textured surfaces grow more bacteria than smooth surfaces?
- Do more bacteria grow in dark or light locations?

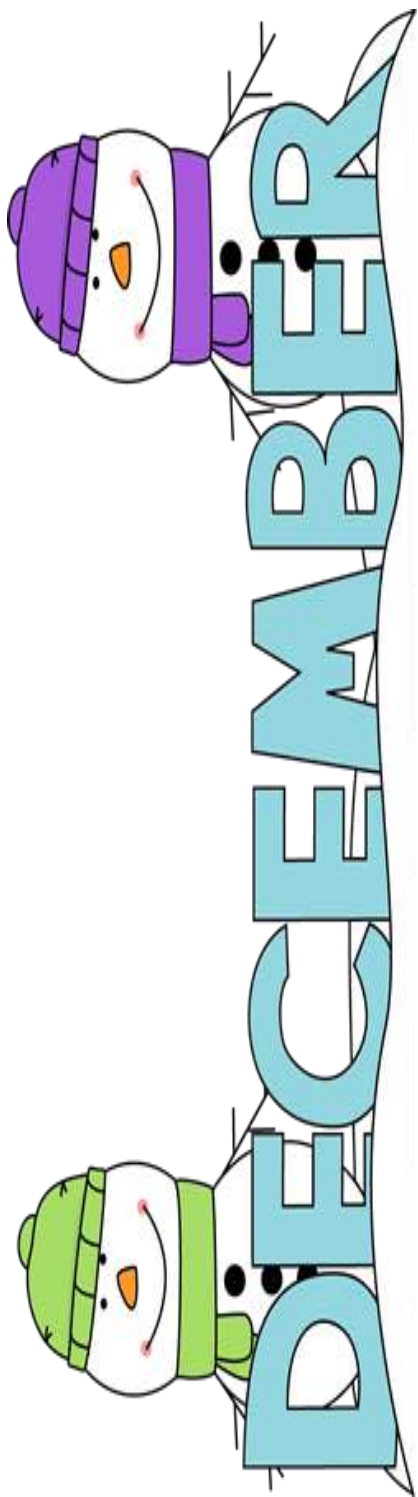
After developing their testable questions, the students took time to research; this research helped them to create the best investigation possible. Research included determining the most traffic ridden hallways and bathrooms, determining the most utilized keyboard in the library, and determining how areas are disinfected within the school. Variables were determined and each team of students created a procedure. Samples were collected and the students energetically charted the bacterial growth after 72 hours and after one week. Using this data, the students analyzed the results and synthesized information to create further questions for investigation and offer recommendations for change. In the student’s own words these are some things they learned from their investigation:

- I should take my shoes off before going in my house
- I should wash my hands after gym class
- I shouldn’t touch the faucet when I wash my hands
- I learned about how to count bacterial colonies

Further questions to investigate:

- Does using hand sanitizer in the computer room decrease the amount of bacteria found on the keyboards?
- Do boys wash their hands less than girls?
- Are the bacteria that we grew dangerous?
- Why did the girl’s room grow more bacteria than the boy’s room?
- How can I identify bacteria?
- Will changing the sponges/cleaning materials more often lead to less bacteria on surfaces?

**Grade 7:** We have spent the past six classes exploring Newton’s Laws of Motion. Students began by investigating forces and how these forces impact motion. Misconceptions about gravity and falling objects were disproven. By experimenting with paper, a paper clip, and a role of masking tape, we learned that gravity acts upon all objects the same; it is drag that causes objects to fall at different rates. Following this activity, students were able to experiment with the force of buoyancy. By creating neutrally buoyant balloons, they proved Newton’s First Law of motion (when forces are balanced, no motion will occur). Then by changing the air pressure in front of the balloon, students were able to “walk” their balloon. As a culmination of our learning, students created rocket racers. The racers applied Newton’s Third Law of Motion; however, each law needed to be considered to build a successful car. After a bit of problem solving and redesigning, each team managed to create a car that moved forward with speed and efficiency. The most successful car traveled a grand distance of 916 inches. Well done!! As an aside, each student has enjoyed observing and playing with my Newton’s Cradle. I do believe it would be a welcome addition to any holiday list.



## Advanced Math Gateway

**Grade 6:** Our pattern work has continued in class, and students have been introduced to patterns within Pythagorean Triples. We utilized a proof of the Pythagorean Theorem to determine if a triangle is right, acute, or obtuse. In the coming weeks, students will utilize Pythagorean Triples in proofs of the Pythagorean Theorem to determine the distance between two points and apply the theorem in real world situations. Students should continue to practice their first fifty perfect squares and the patterns associated with the squares. In addition, students should be well versed in the patterns with Pythagorean Triples; in particular how to create “parent families” and how to create “family members”. I am sure this can be an engaging dinner time conversation.

**Grade 7:** Students have been progressing very well working with trinomials. They have mastered factoring using a greatest common factor. This strategy allows them to factor a quadratic expression faster and with greater precision. One would certainly appreciate using the GCF when faced with factoring  $18x^2 + 114x - 84$ . By factoring, out the GCF of 6, the trinomial becomes  $6(3x^2 + 19x - 14)$ . Having a smaller lead coefficient, which is also prime, makes it much easier to determine the factors of the constant, how the lead coefficient will impact one factor, and how the terms will combine to create the linear term. The resulting factored expression would be  $6(3x - 2)(x + 7)$ . As an extension of factoring, students worked using a negative quadratic term. For example, given  $-2x^2 - x + 21$ , students made the connection that a -1 could be factored out, thereby changing the signs of each term in the trinomials; especially the quadratic term. This allows one to factor  $-1(2x^2 + x - 21)$  into  $-1(2x + 7)(x - 3)$ . In the coming weeks, students will begin to work with factorable lead coefficients and to explore binomial expansion using patterns in Pascal’s Triangle.

## FPS

**6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> Grade:** All 13 of our Middle Division FPS teams will have completed their 2<sup>nd</sup> Practice Problem by December 7<sup>th</sup>. This problem addressed the challenges facing our world as we realize the implications of our increasing use of Genetically Modified Organisms, and we continue to explore the power (for good and for bad) of genetic manipulation of our planet’s insects, plants, and animals.

The teams will then spend the next several weeks perfecting their understanding of the six step problem solving process, and researching the third topic of the season, 3D Printing, as we prepare for the Massachusetts State Qualifying Problem in February!



Please stay tuned for various volunteer opportunities as we plan fundraising events in preparation for States. Our first BIS yard sale was a big success, earning \$281.00! Thank you to all who participated!

## Advanced ELA



### ***FIELD TRIP ALERT!***

Our 6<sup>th</sup> and 7<sup>th</sup> Grade Advanced ELA students will be going to the Zeiterion Theater in New Bedford on December 9<sup>th</sup> to enjoy a live performance of five classic short stories by Edgar Allan Poe, Mark Twain, W.W. Jacobs, Guy de Maupassant, and Washington Irving. Thank you to The Gateway Department for covering the cost of admission and transportation for all 48 of these lucky students!

**6<sup>th</sup> Grade ELA:** The 6<sup>th</sup> graders have finished reading and analyzing their first novel of the year, *The Graveyard Book*, by Neil Gaiman. The students and I enjoyed vibrant discussion regarding the novel's intricate plot twists and various themes, as well as a close inspection of the masterful techniques that make Mr. Gaiman such an exceptional storyteller. The 6<sup>th</sup> graders further developed their ideas through a writing piece that allowed them to either dream up their own "sequel" to this beloved book, or cast and direct a film version.

Additionally, our 6<sup>th</sup> graders had a blast reading and critiquing the 7<sup>th</sup> grade entries in our annual Creepy Writing Contest. The 7<sup>th</sup> graders were quite impressed with the 6<sup>th</sup> grade entries, as well, and they provided very thoughtful and constructive criticism to help the 6<sup>th</sup> graders sharpen their writing skills in preparation for next year's contest. The 7<sup>th</sup> graders carefully voted, and have decided that their favorite creepy stories were written by: First Place - Zoe Hughes! Second Place – Zac Lindauer! Third Place – Abby Creedon! Fourth Place – Schuyler McMahon! Congratulations to our winning authors!

**7<sup>th</sup> Grade ELA:** The 7<sup>th</sup> graders have finished reading their first (550 page!) novel of the year, *The Book Thief* by Markus Zusak. Our class discussions have addressed the very serious literary themes found within the novel; courage, love, war, suffering, mortality, criminality, identity, and the awesome power of WORDS. Considering that the narrator of this powerful piece of historical fiction is none other than DEATH, personified, the students were asked to conduct interviews and write a journalistic piece that featured various people's philosophical opinions, questions, and theories regarding death and what comes afterward. Lastly, we had a lively discussion regarding the film adaptation of *The Book Thief*. We considered the many editorial choices the film's director made to pare this powerful and lengthy story down to a two hour movie. On a lighter note...

Our 7<sup>th</sup> graders did a fantastic job in the 2016 Creepy Writing Contest! Our 6<sup>th</sup> grade judges were totally impressed by the creativity and writing styles of their "elders." The following 7<sup>th</sup> grade authors were chosen as the winners of this year's contest: First Place – Laurel Buckley! A Three-Way Tie for Second Place – George Atsalis, Ronan Contrino, and Reagan Hicks! Tie for Third Place – Molly Lamothe and Mashal Malik! Congratulations to our winners!

## Barnstable Gateway Program

Kari Morse, Director  
Deana Pulsifer, Admin. Assistant  
Heather Anderson, Gateway Teacher  
Deb Contrino, Gateway Teacher

Morse\_Kari@barnstable.k12.ma.us  
Pulsifer\_Deana@barnstable.k12.ma.us  
Anderson\_Heather@barnstable.k12.ma.us  
Contrino\_Deb@barnstable.k12.ma.us