

## Haywood County Schools

### What's Happening at Hazelwood and Junaluska?



AIG students at Hazelwood and Junaluska Elementary Schools have been working independently and in teams to solve problems in the areas of verbal reasoning, spatial reasoning, mathematical reasoning, and logical reasoning. They are also working in teams to solve STEM (science, technology, engineering, mathematics) challenges. Third grade

students are building towers which are both as tall and as strong as possible. Fourth graders are learning about electrical circuits and will be designing circuits to accomplish certain tasks. Students in the fifth grade are exploring concepts and designing solutions to challenges involving the physics of motion. They are learning about kinetic

and potential energy, Newton's laws, centripetal force, and friction. These concepts will be applied to a roller coaster building challenge.

Article Index

School	Page
Bethel Elem	2
Clyde	1-2
Hazelwood	1
Jonathan Valley	3
Junaluska	1
Meadowbrook	2
Riverbend	1-2
Waynesville Middle	3-4

### 2<sup>nd</sup> Grade at Clyde, Jonathan Valley and Riverbend

The first nine weeks at all three schools have gotten off to a tremendous start. Second grade students started the year learning about organizing information and using Venn diagrams. We are now building Dancing Birds using our We Do Lego sets. Each group builds the model then they program the birds to dance using a computer program. We then experiment with the program and model to see how we might be able to change the spinning

direction and the speed. We are next going to work on picture and word analogies.

Third grade AIG students have been learning about buildings and sturdy structures. They built a structure to hold a ping pong ball using only paper and tape. They have worked with Legos to determine strongest polygons and learned how to strengthen unstable polygons. They are now

working on a free standing structure that when turned upside down will continue to stand. Third graders will get their turn with WeDo Legos by building and programming a soccer game complete with kicker, goalie and fans.



*“2<sup>nd</sup> grade at Bethel and Meadowbrook have been focused on critical thinking, and strategies to solve new problems”*

## 4<sup>th</sup> and 5<sup>th</sup> Grades at Clyde, Jonathan Valley and Riverbend

Fourth graders are excited about their field trip to Discovery Place November 5. In Class students have been working in groups building freestanding structures. The first structure used only straws and pipe cleaners. The structure had to hold a golf ball for 30 seconds. They also built a structure using straws and paper clips that had to hold a tennis ball. The straws and paper clips were assigned values and the winning structure was the one that held the tennis\_ball and

utilized the least amount of expense. We are getting ready to begin a unit on the relationship between electricity and magnetism.

Energy, force and motion are the topics in 5<sup>th</sup> grade AIG. We began the year discussing types of energy and potential and kinetic energy. We had a jumping frog contest with paper\_frogs made in class. Then the students built some very interesting kinetic sculptures. We used Legos to build a vehicle to experiment

with friction, weight and gravity. The students changed weight and the wheel size to gather their data. After collecting their data, the students developed a conclusion based on that data. We will continue studying Newton’s Laws of Motion.5<sup>th</sup> graders are also extremely excited about their spring trip to Space Camp

## 2<sup>nd</sup> , 3<sup>rd</sup> and 4<sup>th</sup> Grades at Bethel and Meadowbrook

2<sup>nd</sup>grade has been focused on critical thinking, and strategies to solve new problems, 3<sup>rd</sup>grade is really getting in to shape, they have been working with polydron shapes to learn about 3 dimensional shapes and nets, they are moving into finding the patterns found in the building of bridges, they will research the different types of bridges and then design a blueprint of a bridge that they will build to span 12 inches. The bridge will need to be able to support weight. The

construction that holds the most weight and spans 12 inches will win the building competition. 4<sup>th</sup>grade started the year with compasses and protractors, and learning how to use the tools to draw specific geometric shapes and angles, this moved into a spatial visualization unit in which the students are learning how to go from a 3 dimensional shape to a 2 dimensional drawing to a 3 dimensional drawing with different points of view. This

lesson taught the students how to find surface area, volume and perimeter of unconventional shapes. The culminating activity is to design a building and construct it according to the blue prints they draw. The students must draw at least two different points of view before construction. Students will need to market their building, explaining why their building would be best for the buyer.

## 5<sup>th</sup> Grade at Bethel and Meadowbrook

5<sup>th</sup> grade started the year with Genetics projects centered on dogs and hybridization of the species, we learned about, original breeds, inherited traits vs. behavioral traits and how to develop a breed for a specific purpose. We developed our own breeds based on what we wanted in a canine companion. *We are really rolling now as we use rollercoasters to help our*

understanding of Velocity, gravity, friction, top speed, acceleration, average speed, g-force, data collection and the representation of our findings through graphs and tables. The students will complete this lesson by building a rollercoaster for a specific type of ride, i.e. fastest, highest lift, longest ride duration, etc... They will then have to market their

rollercoaster to the buyer, making sure to use their findings as a support for the specialty of the coaster.

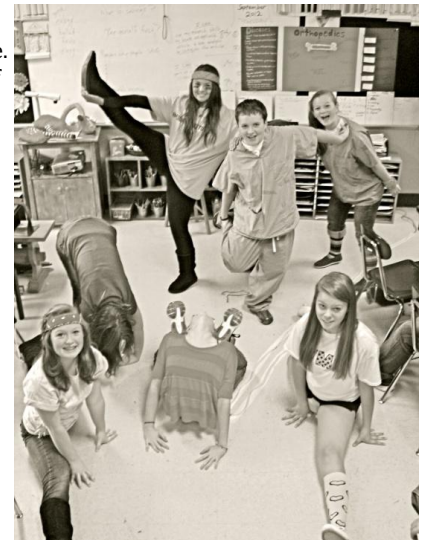


## 6<sup>th</sup> Grade at Waynesville Middle

In sixth grade, the concept of teamwork is investigated, and the classroom simulations are designed to build necessary teamwork skills to get the most out of AIG and other classes as well. We definitely subscribe to Dr. Howard Gardner's view that "It's not how smart you are--it's how you are smart." Recognizing our strengths and developing new talents is a foundation for personal growth as well as an appreciation of others' unique abilities as fellow team members. Students are asked during the simulations to assess their teaming strengths and to consider how they can apply these in various aspects of their lives. Earlier in the semester, sixth graders embarked on an **Odyssey**, a mythology simulation which required creativity, close communication and teamwork, and extended knowledge of Greek myths and their characters. Team members rotated through individual roles with highly structured

responsibilities and limitations. A few activities: students summarized Heracles's twelve labors in caption blocks and drawings as well as created a thirteenth labor, scoring extra points for originality and humor in the story and artwork. They classified English words with Greek and Roman mythological origins, developed a five-frame color comic strip with a new Greek hero, sent a telegram to the gods, and planned a party for Pandora's revenge. Students improved their group skills by attempting to include everyone's creativity in team solutions to the tasks presented in *Odyssey*--all within tight deadlines. Aviation history, principles of flight, and mapping skills are at the center of our current simulation **Flight**. Students are grouped in teams of three and work together in the flight school phase to earn bonus miles for studying aviation history and practicing map skills such as using a scale for distance and plotting location with latitude and longitude. Pilots-in-training

also learn about the physics of flight during some excellent science videos, and they attend "Flight School" at a NASA website and attempt to earn a flight "license" online. Students study skills involved in piloting, navigation, and co-piloting and eventually take a final "exam" to be fully licensed. A hands-on segment involves building a sled kite, designing and testing paper airplanes for distance flights, observing the forces of thrust, lift, gravity, and drag, and making adjustments to the planes to increase flying time and distance. The actual flight contest consists of an imaginary cross-continental air race. Teams file flight plans and keep a flight log of daily events during the race. The winning team reaches the destination city first or has the most bonus miles.



## 7<sup>th</sup> Grade at Waynesville Middle

Seventh graders study the concept of creativity throughout the semester and the role creativity plays in their own life as well as the world at large. Students watched the award-winning documentary *Why Man Creates* and generated answers that included for greed, to advance life, to impress other people, to collect knowledge, to express emotion, to serve, to adapt, to make one happy, to test possibilities, to achieve the impossible, and to expand the mind. Students defined creativity, listed characteristics of creative persons and how to increase one's creative output, determined in what ways they express their creative nature, and described a time when they have experienced a "flow" state and tapped into their own creative spirit. In order to measure their own creative process, students took the Purdue Creativity Test which focuses on the specific skills and cognitive abilities that enable

one to go beyond what has been termed *functional fixedness* and see more uses for an object than the few most often attributed to it i.e. When is a cup not a cup? When it is used with string and becomes a walkie-talkie; or when it is used to prop a window open; or... Discussions on the importance of valuing and nurturing creativity in our schools, willingness to take risks, embrace failure as a learning opportunity, and daydreaming as a means to open-mindedness and idea synthesis segued into our current unit on entrepreneurship, corporate biographies, and the stock market. Coming up is the math/science simulation, Space Probe. Students will explore engineering and do online research to learn about engineering specialties, the process of becoming an engineer, current innovations in particular engineering fields, and how any type of engineering is inherently a

creative endeavor. Students will then be grouped into engineering firms that compete to bid on contracts with a space agency to build probes to test atmospheric conditions. Students will first build and test rotor probes for rate and accuracy. Results of probe tests will be graphed and evaluated with new design approaches strongly encouraged. Students will also practice drawing to scale and completing reductions and enlargements of figures. Later, teams will construct both cylinder probes and glider probes. Student engineers will calculate surface area and volume in order to design and price cost effective shipping containers for the probes. Geometric concepts and careful, precise measurement and construction are important elements in designing the space probes. Once again, teamwork is invaluable to the company's ultimate success. Students share leadership and responsibility for quality probes

*"At WMS, the students in the Encore class AIG Topics have been creating, crafting, categorizing, calculating, classifying, constructing, and collaborating to enrich core curriculum. At each grade level, a particular concept is explored throughout the semester to help students be more effective and creative thinkers, problem-solvers, and communicators."*

## 8<sup>th</sup> Grade at Waynesville Middle

In eighth grade, the focus is on the concept of leadership and development of leadership characteristics. Throughout the semester, students, individually, in pairs, or as a small group, initiate student-directed learning then take on the role of instructor to present their findings, conclusions, or products. This series of presentations is designed to enhance research methods, public speaking skills, visual aid creation, and knowledge and usage of multimedia formats.

As eighth-graders worked in the simulation Code Blue, students learned about the body and how it functions and taught each other in-depth about their own specialty. They also became aware of several public health issues, how each affects the body, and how problems associated with these health issues, especially adolescent health problems, can be prevented or avoided. During the Grand Rounds conference portion of the simulation, student-physicians presented interesting patients, their problems/diagnoses, and solutions and resources to treat their patient. Virology and the protection of civilian populations

from disease outbreaks and biological weapons was incorporated via the reading of Richard Preston's novels *The Hot Zone* and/or *Demon in the Freezer*.

Why did people leave their homes and everything familiar to sail to an unfamiliar new land in America? Eighth graders will be enacting this scenario as members of a colony in the history simulation Discovery. Some colonies seek religious freedom; others are sent by the English crown to establish a foothold in the New World; and some are private company colonies seeking gold and valuable resources for their investors back in England. Colonies begin by earning money in a series of mapping activities in order to purchase supplies for three ships. After the sea voyage, they must choose a landing site based upon important geographic features and then try to expand their colonies. Each colony consists of four to five team members who rotate roles as Governor, Mapper, Trader, Recorder, and Auditor during rounds of the simulation. Traders negotiate with Native

Americans and other colonies' Traders, while Mappers select land to obtain and update the colonies' holdings. The Governor leads colonial meetings and maintains order, and the Recorder and Auditor track the colony's wealth and food supplies. All colony members must make decisions as a team and keep accurate accounting records of all transactions or face losses to their food supplies. Hazards faced throughout the simulation are based upon actual events in the early colonial period of settlement. In addition, twice during the simulation, students must write diary entries with the option of aging them for extra credit. These diary entries describe events in their colony. At the end of every other round, students must interpret primary source documents written in 1588 and the years following, from Roanoke and Jamestown to the Massachusetts Bay colony. "Translating" Elizabethan era English, studying hand drawn diagrams of native villages, and evaluating colonial laws--to name a few of the tasks--presents an extra challenge and opportunity for learning.



*"AIG students at Central Elementary School have been working hard and learning lots."*

## AIG at Central Elementary

AIG students at Central Elementary School have been working hard and learning lots.

**Fifth graders** are reading **The Giver** and learning about potential and kinetic energy. They are now using that knowledge to design roller coasters.

**Fourth graders** are reading **The City of Ember**, which connects to their study of electricity. Students have designed projects with snap circuits and are designing

cards that light up with conductive paint, batteries, and diodes. The fourth graders also had a great time at Discovery Place in Charlotte. Thanks to the parents who went with us and helped make this a great trip!

**Third graders** are reading **Coraline**. The students also complete math enrichment activities as well as experimenting with snap circuits.

**First and Second graders** have worked on math activities as well as some hands on science experiments. Sadly, our first graders' sugar crystal experiment was a flop. If at first you don't succeed...

## Let's Hear From the Students at CMS and BMS!!

### Year Long Independent Projects

In AIG at CMS and BMS, we have been working on a year-long project that we will present in class in the spring by either bringing it in if you can or taking a picture of it and bringing the picture in. Just to get an idea of the types of projects that people are going to do...a movie creation, a year-long analysis of stock car racing, raising a calf and documenting its changes, learning some of a foreign language, math picture books for use by other students, and many more. Students are creating rubrics for use in grading the projects, which have been submitted on a

contract and have to be approved by parents and the teacher.

(Contributed by Coby Hendrie and Mrs. J. Frazier)

### Middle School Math Video Competition

In AIG, we are making a math video. We have a couple of pages of math problems to [choose] from. My group's is a video about candies and [putting] them into equal groups. We have already filmed but there [are] still a couple groups that haven't done so. We will start

adjusting them and fixing the videos soon. They will go on a math website. There will be hundreds of math videos on the site and the best one gets to go to Universal in Orlando. Come and vote so people can win (and hopefully me). (parentheses added)

(Contributed by Sebastian Cothran)

Watch for further details to be able to help our schools by voting for the videos created by our students!



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