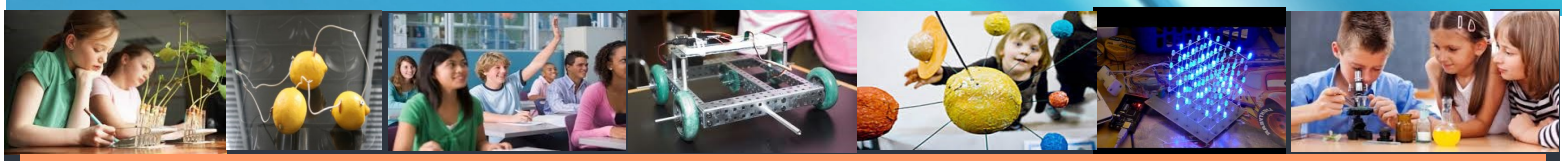
Vol. 3: ISSUE 2 | Winter | 2014

Curriculum Matters...

Transformative Work by the Faculty and Students of SAU 21



Common Core State Standards & Our Schools Working Together for Student Success

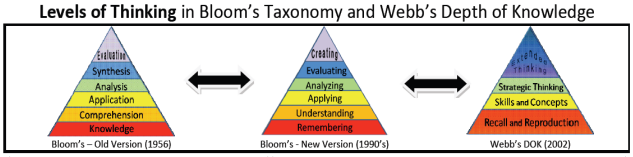
The teachers and administrators of SAU21 have continued to work on aspects of the Common Core State Standards that provide added value to our students. There are a couple of broader implications that we are advancing to impact our students in a very positive way. Our collective responsibility for students' literacy and numeracy skills. In our past issues you may have read about the Vertical Curriculum Teams and their efforts to fortify reading, writing and numeracy skills beyond the usual core courses. Whether it is in social studies, the arts or physical education and health, all teachers have the responsibility to contribute to students' vital skills. Our new Professional Learning and Teacher Appraisal Systems will encourage joint efforts that focus on the reinforcement of student performance across subject areas. The ability to read both fiction and informational writing with understanding is critical to ongoing learning throughout a lifetime. The ability to write persuasively and include information that quantifies outcomes provides substantial support to any argument or presentation. Beyond CCSS, we continue our aim for student-centered learning for every student, which means providing supports and greater challenges for every student's success.

According to the Teachers College Record, "implementation details are critical to CCSS's success because they ask for bigger changes than the nation has ever required of classroom teachers, building administrators, curriculum developers, and state and district leaders. Not only must new and more rigorous materials be developed and tested, teachers must fundamentally change the way they interact with students in the classroom—teaching facts and procedures must yield time to in-depth development of students' thinking and writing about challenging concepts." (Excerpted from http://www.tcrecord.org/Content.asp?ContentID=17451 in February, 2014)

The implementation process has been ongoing for our teachers and students. Some teachers and staff are *weeding the garden* so to speak, and making decisions about important learning that has leverage and value to support students' future learning but weeding out noncritical information so there is time to delve deeper. Many of our teachers already focus on deeper student thinking and use the writing process as a vehicle for understanding student thinking and learning. Students will face challenges as they are asked to explain their reasoning, not just their knowing. To grasp a better concept of these skills, see how the Depth of Knowledge (DOK) charts have changed over the years.

Across SAU21 the Vertical Curriculum Teams are also pursuing avenues that can help to quantify student growth through their respective curricula. Teams have identified common areas of focus to improve student performance and are working on ways to assess and chart this growth. And, although the teams are in different places along this trajectory, our Professional Learning Committee has worked with teachers at their respective schools to advance S.M.A.R.T. goals that include measurable outcomes. In time, these goals for student learning and performance measures will be known as Student Learning Objectives or SLOs. This April 4th, presenters from the NH Dept. of Education will offer an awareness session about SLOs designed to advance student learning. We know everyone will work at these in different ways, but collectively it will mean many more "eyes on the prize" of successful learning by each of our students!

Levels of Thinking in Bloom's Taxonomy and Webb's Depth of Knowledge



Bloom's six major categories were changed from noun to verb forms in the new version which was developed in the 1990's and released in 2001. The knowledge level was renamed as remembering. Comprehension was retitled understanding, and synthesis was renamed as creating. In addition, the top two levels of Bloom's changed position in the revised version.

Bloom's Taxonomy	Revised Bloom's Taxonomy
Knowledge	Remembering
Recall appropriate information.	
Comprehension	Understanding
Grasp the meaning of material.	
Application	Applying
Use learned material in new and concrete situations.	
Analysis	Analyzing
Break down material into component parts so that its organizational structure may be understood.	
Synthesis	Evaluating
Put parts together to form a new whole.	*Make judgments based on criteria and standards.*
Evaluation	Creating *(Previously Synthesis)*
Judge value of material for a given purpose.	*Put elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing.*

Norman L. Webb of Wisconsin Center for Educational Research generated DOK levels to aid in alignment analysis of curriculum, objectives, standards, and assessments.

Webb's Depth of Knowledge & Corresponding Verbs

**Some verbs could be classified at different levels depending on application.*

Recall and Reproduction *Correlates to Bloom's 2 Lowest Levels*

Recall a fact, information, or procedure.

arrange, calculate, define, draw, identify, list, label, illustrate, match, measure, memorize, quote, recognize, repeat, recall, recite, state, tabulate, use, tell who- what- when- where- why

Skill/Concept

Engages mental process beyond habitual response using information or conceptual knowledge. Requires two or more steps.

apply, categorize, determine cause and effect, classify, collect and display, compare, distinguish, estimate, graph, identify patterns, infer, interpret, make observations, modify, organize, predict, relate, sketch, show, solve, summarize, use context clues

Strategic Thinking

Requires reasoning, developing plan or a sequence of steps, some complexity, more than one possible answer, higher level of thinking than previous 2 levels.

apprise, assess, cite evidence, critique, develop a logical argument, differentiate, draw conclusions, explain phenomena in terms of concepts, formulate, hypothesize, investigate, revise, use concepts to solve non-routine problems

Extended Thinking *Correlates to Bloom's 2 Highest Levels*

*Requires investigation, complex reasoning, planning, developing, and thinking-probably over an extended period of time. *Longer time period is not an applicable factor if work is simply repetitive and/or does not require higher-order thinking.*

analyze, apply concepts, compose, connect, create, critique, defend, design, evaluate, judge, propose, prove, support, synthesize

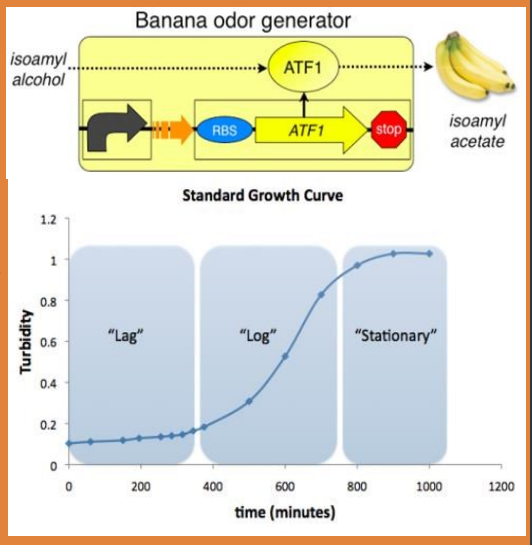
Debbie Perkins, 2008

See our back page and this link for a full DOK Chart: http://www.sau21.org/sau/index.php/departments/99-curriculum

THE SAU21 Science Team has chosen an inquiry focus to their work. In support of Common Core State Standards and Next Generation Science Standards, the team has focused on sharing the ways they foster inquiry thinking or problem solving with their students. How students gain ownership of a healthy skeptism in science and think creatively to design investigations that test out their hypotheses provides experiences that mimic the ongoing nature of science. When students act as scientists, they are more critical of their work and realize the benefits of a learned mind. Very often, it becomes the stimulus that drives intrinsic motivation. Students learning science by doing science!

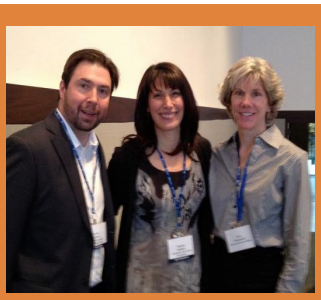
Lincoln Akerman School, Hampton Falls
BioBuilder Synthetic Biology Program via MIT

Last winter eighth grade students at Lincoln Akerman School became the first middle schoolers in the country to participate in the BioBuilder synthetic biology program. The BioBuilder Foundation was established by Natalie Kuldell, a professor in the Department of Biological Engineering at MIT to familiarize students with the growing field of synthetic biology. Synthetic biologists combine biology and engineering to design entirely new systems to solve pressing world problems such as creating bacteria that can change color to detect water contamination in developing countries.



The students at Lincoln Akerman piloted BioBuilder's new middle school content. The students worked with a harmless type of bacteria that had been modified to give off a banana smell at certain phases in its growth cycle. This bacteria was designed by the 2006 MIT iGEM team. Through this series of labs, the students learned the principles of synthetic biology, the techniques involved in working with biological systems, and the vast potential for synthetic biology to help solve the problems facing society today. They even proposed uses for synthetic biology in their own lives as one student suggested that a system could be designed to detect cartons of soured milk through color changing bacteria! For more information see BioBuilder.org.

The students learn the concepts of combining biology and engineering in synthetic biology, the concept of using a plasmid to transform genes, proper handling of microorganisms, 'clean' technique (as opposed to sterile - can't claim that), the growth requirements of and the lab techniques involved in the growth of microorganisms, and the identification of growth phases through the function of the transformed gene. Ms. Woodruff hopes to repeat this experience this spring with her current classes.



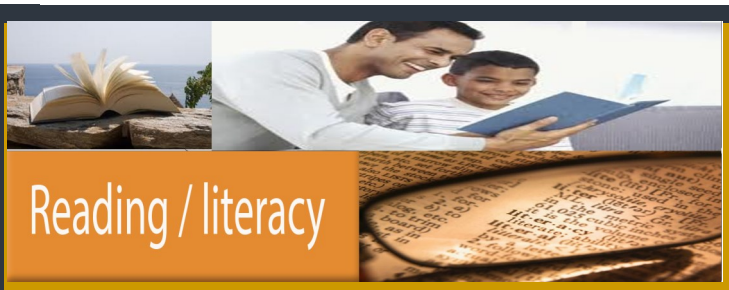
WHS Biology Inquiry & Chemistry Precursor ~ Tree Health and the Spectrophotometer Project

What do you remember from your biology class? Let's see...photosynthesis, food webs, and energy flow! Let's not forget about cellular respiration! Do you remember the difference between the light and dark cycles? These are topics that Science Teachers, Michael Handwork & Shani Scarponi were teaching, but to enhance learning established a challenge project so students had a reason to figure them out and to understand them. Commonly referred to as inquiry teaching or backward design, this pedagogical method encourages students to question and reason!

WHS Biology students embarked on research questions, learned about global climate research from a world-renowned scientist, Dr. Barry Rock, and worked with a $15,000 UV-VIS Spectrophotometer on loan from the Advancing Science Program at the Leitzel Center, UNH. The students conducted field work, used current research protocols to extract pigments, and documented qualitative and quantitative outcomes by combining their observations with spectral analysis. They figured out how to read spectral curves and calculate chlorophyll a and b concentrations as they assessed tree health. Their quest began with the following excerpt:

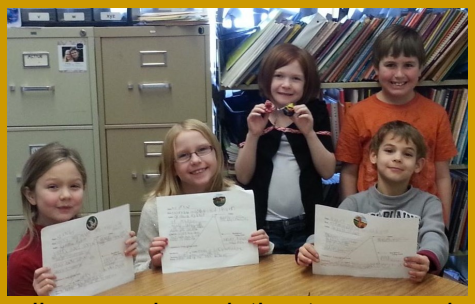
> Imagine that you are on a research team that analyzes environmental issues and questions for towns and schools. You have been asked to study maple trees that grow in New Hampshire. Specifically, your team will have access to sugar maple (*Acer saccharum*) and Norway maple (*Acer platanoides*) leaves that were collected from the NH Seacoast during the fall and frozen to preserve the samples. Leaves were collected during the last week of August and the four weeks of September for a total of five weeks of leaf samples to study.
>
> You and your teammates must design a question or problem that can be analyzed using what you have learned in class. These concepts and skills include pigment extraction, pigment concentration, spectral analysis, visible light, leaf anatomy, and photosynthesis. Your research team may design a controlled experiment or make a series of observations that help you answer your question. Each member of your team will design a scientific poster to present your findings and conclusions. The general sections of the scientific poster are listed below:
>
> - Abstract – summarizes your work and findings
> - Background – communicates your research about the topic (minimum of 3 sources)
> - Methods – describes the materials and procedures utilized in your experiment
> - Results – displays your findings
> - Discussion – interprets the data
> - Conclusion – analyzes the major results with the question in mind, discusses errors, suggests improvements

This guided inquiry experience allowed students to design their own investigation using the samples and materials available to them. Although the students worked with Norway and Sugar Maple trees, some decided to examine the degradation of chlorophyll a and b as fall progresses. Other groups tried to learn why leaves change color in the fall and focused on additional pigments. Students shared that the project/poster experience was challenging and that they were proud of their work. One student approached us at the end of a class after using the centrifuge, vortex, and spectrophotometer and shared a picture of a lab with similar equipment. His sister works at Lonza in Portsmouth/Newington and realized that he (at 14) was using similar equipment.



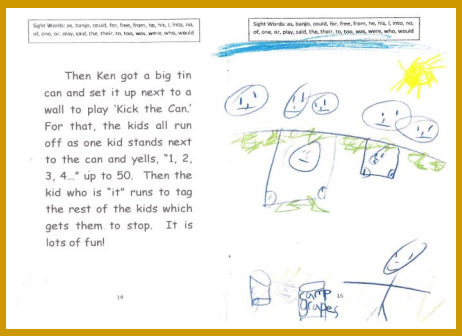
Visualization Skills to Enhance Comprehension

From Annemarie Grigus, Seabrook Elementary School: My third grade reading students read "Belle" by Rachel Sills from the My Sidewalks program of the Reading Street program. They then drew three pictures to illustrate the sequence - beginning, middle and end of the story.

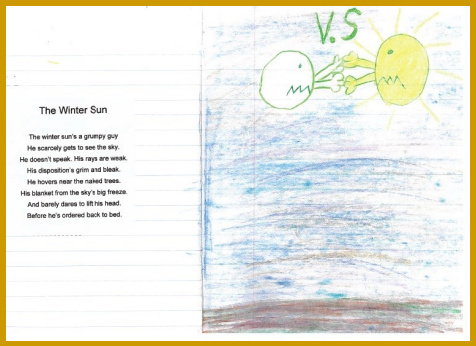


From Patricia Antlitz, Lincoln Akerman School:
One way that we are addressing Common Core literacy standards in the lower grades is through the use of graphic organizers and asking students to provide evidence for character emotions or actions. In this Story Arc Graphic example, a small group of second grade students read “Henry and Mudge and the Cold Shivers” by Cynthia Rylant. While reading, students are utilizing literary terms such as characters, setting, rising action, conflict, climax and resolution to summarize the plot. During discussion, students were asked to provide evidence that Henry was worried and evidence to show when he stopped worrying about Mudge. "Mudge ate crackers" was the evidence that he was feeling better.

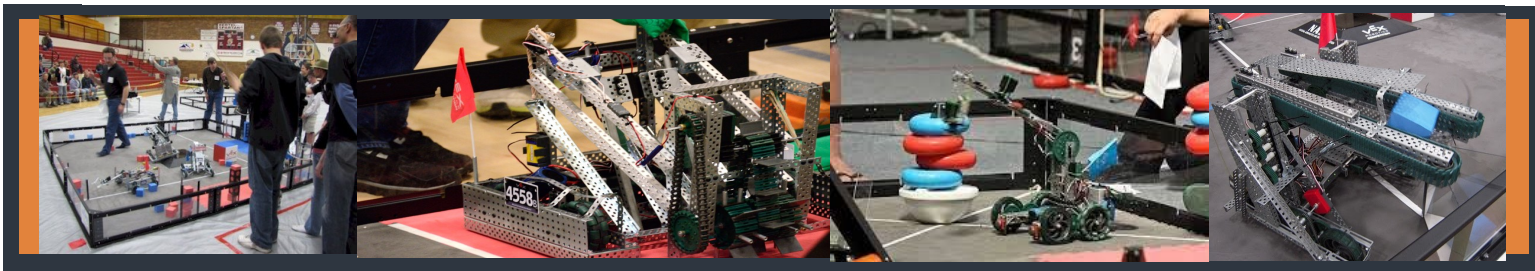
From Nola Joyce, Lincoln Akerman School:
I'm forwarding a page from a little book I wrote to encourage visualization skill development to enhance reading comprehension. One of my 2nd gr students (on an IEP) drew this. You can see lots of detail and depth. I wish I could have shown his complete book. On other pages he portrayed the passage of time for events that happened during the day by showing a bright sun on one page, a colorful sunset the next, and a black sky with a campfire on the next. (The time of day was hinted at but never explicitly stated in the story. Same with the campfire. The kids in the story were gathered around in a circle on logs to sing songs at the end of the day. The campfire wasn't referred to in the story.) Adding in their own pictures brings the story to life and individualizes it for each child. I love this quote by Samuel Johnson, "A writer only begins a book. A reader finishes it."

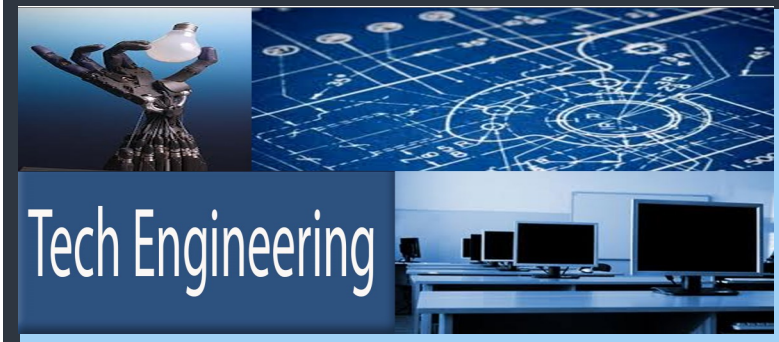


From Carol Dugan, Barnard School:
During Heroes Month last October, students K-8 wrote opinion/argument letters to nominate their heroes for the “Wall of Heroes.” During the following months, students further explored the qualities of their chosen heroes as they developed the Hero Stamp Project with Diane Scheckells, art teacher. Now, upper grade students learn how to create Garage Band musical videos with music teacher Kathleen Wooten to further honor their heroes. All will be displayed during our spring Celebration of Learning.



From Nicole Outsen, North Hampton School:
Second graders at North Hampton School practice comprehension through visualizing using poetry. Students read a poem together and discuss key vocabulary, then they record how they visualize the poem. This is more than creating an illustration to go with the poem; students work hard to convey meaning through their visualization.





New England Vex Competition

Winnacunnet High School once again hosted the Seacoast Winter Classic event which is an all-day, New England-wide, Vex Robotics STEM Competition on Saturday, February 8 in the WHS gymnasium. Sixty four high school teams from all over New England competed in this year's game, the VEX Toss Up. The Seacoast Winter Classic, is in its second year and is one of five preliminary qualification events held from October through February throughout northern New England. Teams are attempting to gain entry into the next level of competition, the New England Regional Event held in March in Worchester, Massachusetts. The events aim to bring to the educational forefront, the integration of Science, Technology, Engineering and Mathematics (STEM) curricula. Student teams comprised of 2 to 5 students, with guidance from their teachers and mentors aim to build the most innovative robots possible to score the highest point value in the current year's game challenge. In addition to just having a great time and building amazing robots, through their participation in the VEX Robotics Competition and their work within their team, students will learn many academic and life skills. These include adventurous problem solving from the mechanics of movement to electrical loads on motors and how to think strategically within a competition that changes year to year. Strong mathematics and materials science plays a critical role as students design their systems and make choices in the parts and construction techniques they can use.

The basic kits cost about $2000 but are re-used year after year. Sponsors assist teams with both expertise and financial assistance so a little investment goes a long way to engage many students over time. This year teams included multiple grade levels including middle school students. Community engineers are highly valued as they assist teams learning to design, build, and program the robots. They use rechargeable batteries, multiple motors, pneumatics, sensors, autonomous programming, and an abundance of creativity as they strive to produce a dependable and responsive machine. Multiple grade level teams also assist in passing the learning along from student to student.

In an effort to promote the VEX competition and STEM initiative here in the seacoast region the Winnacunnet Engineering Team has reached out to local high schools who have expressed interest in participating in the VEX challenge. We are proud to have assisted three new seacoast schools to the event, Exeter High School, Berwick Academy, and Portsmouth Christian Academy into the VEX competitions. In each instance students from the Winnacunnet Engineering Team have either traveled to the school to assist new teams with their design approach or have invited the new teams to our practice facility in the Winnacunnet Engineering and Technology building during one of our 'build' sessions. In the coming years Winnacunnet hopes to have a VEX event that is made up of solely seacoast junior/middle schools, senior high schools and other organizations such as rec clubs. James Muthig is the VEX Robotic Coach at Winnacunnet and has worked with the SAU to engage our sending schools in the pipeline to engineering and robotics. Jim is also a teacher for the Project *Lead the Way* engineering program at Winnacunnet. If you are interested in assisting a team or helping to develop engineering experiences for students in the seacoast, please contact Jim (jmuthig@winnacunnet.org) or SAU21 Assistant Superintendent, Barbara Hopkins (bhopkins@sau21.org).

Local VEX Robotics competitions are being held in many different cities, states and countries. Teams can register for the VEX Robotics Competition to get their official VEX Team Identification Number and Team Welcome Kit at RobotEvents.com. Events are held worldwide and are being added every week
For more information, please visit: http://www.vexforum.com/wiki/index.php/Toss_Up http://robotevents.com/

Talking About Technology ~ *an interview with Chris Cassamas*

Chris Cassamas has a wealth of knowledge about technology and students. Chris and his students have assisted us with some of the design of Curriculum Matters. We had a discussion about students and technology and Chris shared some different perspectives that make a lot of sense for our students to think about. He has noticed that when students enter WHS, they arrive with a wide range of abilities and skills with technology. Since Middle Schools have dropped specific "tech ed" classes (e.g. engineering, woodworking, graphics, etc.) to include technology through the main curriculum, there is some effect on skills. One might also mention that many households include two working parents so there may be less time for do-it-yourselfers and thus less exposure to the unified arts. Winnacunnet offers a wide range of tech classes including Technology, Engineering and Woodworking which are set up as electives. This means that depending upon the course schedule of students, there may not be time in the day to advance their technology know-how. Chris suggests that tech and computer labs could be open throughout the day so students could use the labs during their unscheduled time. He also suggests afterschool opportunities with a qualified teacher present, so that students who might not have the time during the school day, could still advance their software skills. Students today need to have an increasing number of skills in technology and incorporating sophisticated software in presentations and problem-solving for college and the workplace. These skills include many Microsoft products. As well as an ability to progress with proprietary software. Did you realize that an entry level position with an insurance company requires employees to be able to conduct a query or filter information from a large database? By learning more depth using Microsoft programs and others like the Adobe Suite of design program, students do advance their communication skills. WHS students have access to these programs and can use them to create more professional looking posters or presentations for their core classes such as science or social studies. They can also become acquainted with more sophisticated graphic software to print posters on the large format printing machine in the tech department rather than resorting to paper, scissors and glue.

Technology has also enhanced student communication with teachers and mentors. Teachers can post information and websites for students and review student work electronically. This reduces paper, printing costs and time. Google docs and cloud storage are highly effective and efficient programs for students to access their work from anywhere, collaborate with peers, and to share it with the teacher. Students don't have to worry about leaving their paper at home or losing a flash drive anymore. Many colleges and universities utilize programs like Blackboard for this type of interaction between faculty and students.

Chris is looking forward to one-to-one computing at WHS as a reality and feels it would be more efficient. He is pleased the 5-year Technology Plan will improve student access. He is also cautious about the dangers of Social Media; students need to know that indiscreet promotions can not only damage a student's chance at a college or career, but can also ruin a person's life. Web sites are not private, and it is very difficult to delete items. Anyone can view a person on Facebook and networking sites. One wrong picture or phrase can hurt a student's future indefinitely. Student's are not always aware of just how easy it is for their posts to be misunderstood and misused by others. Teachers and parents need to help students to understand their responsibilities and etiquette in working with greater technological access. By the way…it is NOT OK to text and check personal email while you are working for someone else or in class It can limit your opportunities in the long run!

Graphic Design Projects from WHS

Designed By Trevor Duquette

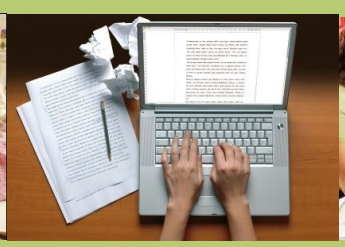
Writing Across the District SAU21

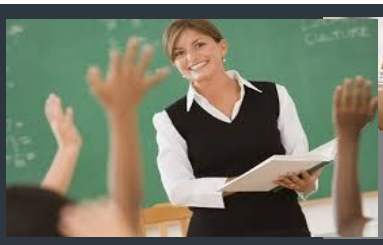
Lincoln Akerman eighth graders are stepping into the shoes of world leaders. We have just begun a unit called “Modern Dilemmas”. In this unit, students research and begin to understand the difficult situations facing our world today, like: nuclear proliferation, climate change, human rights and more. In groups, students present their findings on these issues in “news broadcasts” to their class. Once the class understands the dilemma, they hold a model United Nations to discuss and debate the issue, and vote on resolutions. Throughout all of this, students are working on an argumentative essay stating their opinion on one of the modern dilemmas being debated. Given that these issues are being debated in our own Congress and the United Nations, we are encouraging students to submit their essay to newspaper’s editorial section. (Liz Szeliga and Don Conti)

Students at the Seabrook Middle School write daily in most of their classes. The goal is to give students the experience of writing in the four basic genres: informational, descriptive, narrative, and argumentative. The new Common Core Standards places an emphasis on narrative and argumentative writing in all content area classes. For writing methods, guidelines, rubrics, and focus correction areas, teachers draw information from two basic programs: 6 Traits + 1 and the John Collins Writing Program. The key to the growth and success in students' writing is to assign various types of daily writing responses in all classes. (Elaine Smith)

WHS Writing-Intensive American Literature Essential Skills Class
Targeting students who need more support with writing skills, two sections of American Literature ES focus on writing this year. Using the school-wide writing rubric for argumentative/persuasive writing as a guide, students focus on one or all aspects of the rubric, depending on the assignment. In this year-long course, students have written opinion pieces, letters to local businesses, persuasive essays, and fully researched argumentative essays throughout the 1st two trimesters. Students write every day in some capacity, and we have utilized class blogs to respond to readings or specific questions. Using this format, students get feedback from both the teacher and their peers. We have seen tremendous growth in both their writing stamina and the level of depth they have achieved using this writing-intensive format. We feel that the practical nature of the assignments gives authenticity to their writing, and better prepares them for the rest of their high school experience and beyond. (Chellis Kirkland)

The North Hampton School celebrated 50 years of Oratoricals this January! The Oratorical unit is a tradition that showcases 7th and 8th graders speech writing and performance. All 7th and 8th grade students write a 3-5 minute speech that has a topic of their own choosing, and then they spend the next several weeks researching, writing, drafting and practicing oratory skills. They then share these speeches at a podium with an audience of peers and teachers. A selection of students are then chosen to share their speeches in a competition at WHS to a larger audience of parents, families, younger students and community members. This writing process and performance is a wonderful way for students to grow as writers and to share their passionate voices to an authentic audience, their community! We are proud that this annual tradition has been alive and vibrant for 50 years! (Lauren deConstant)



Faculty Profiles

Tammy Thomson
Grade 2 Teacher
Seabrook Elementary

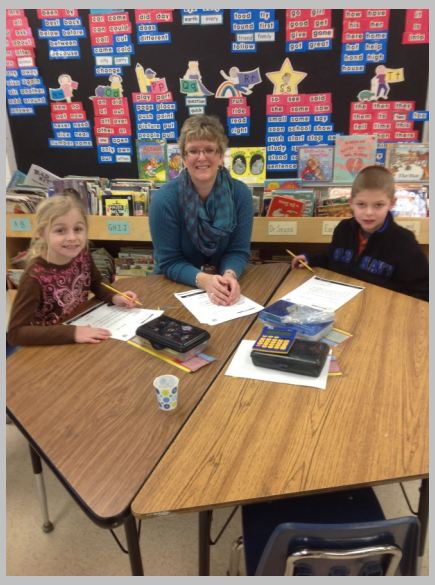
Born: Beverly, MA, moved to Seabrook in first grade
Education: B.A. Child/Family Studies, M.Ed. Elementary Ed., UNH

Tammy attended Seabrook Elementary and Middle School growing up and graduated from Winnacunnet High School. In high school, she played field hockey. After high school, she attended UNH in order to pursue a teaching certificate and masters degree. Tammy returned to Seabrook Elementary School and was hired as an Educational Assistant for the 1994-95 school year. She was hired full time as a 1st/2nd grade looping teacher and has been there for 19 years!

Tammy married her High School Sweetheart, also a graduate of Winnacunnet. They are the proud parents of two wonderful women, Keri (age 15) and Kelsea (age 10). Both are very involved with dancing at *Steppin Out* Dance Academy in Kingston, NH. Tammy's hobbies include reading, cooking, watching basketball and boating. She also enjoys camping on Ossipee Lake and quality time with family.

Tammy is a member of the Grade 2 team and the Sea Stars After School Program as a staff member. Previously, she participated as a Grade Level Team Leader, Staff Development Representative and member of the Seabrook Data Committee.

Tammy describes her passion, "I love teaching! I love trying to help each child learn and grow. I enjoy the challenge of finding the specific methods and strategies that help each individual. I value the relationships and connections that I build with the children in my class. I look forward to seeing and hearing from students of the past ". She strives to teach academics, but also to build social, emotional, and behavioral skills. She wants children to see how everything is connected and to understand the purpose for the work they do in school. Tammy hopes to instill in students the desire to do their best, to "reach for the sky", and to let nothing stand in their way. Tammy's favorite part of teaching "is making a difference every day, for at least one child, and over time for many".



Recent *Professional Learning* that Tammy has included to enhance learning for her students:

- **I-Pad training**- To integrate technology into the classroom
- **Fred Wolff,** *Six Traits of Writing*- To enhance writing in the classroom. "Fred reminded me of the strategies and best practices for writing that I learned about in college, but have faded over the years."
- **Common Core Discussions** To understand the standards and expectations and to utilize resources and collaboration to best teach for student success.

Tammy has been involved in the following SAU21 Committee Work recently:

- **Book Group**: *The Art of Slow Reading* by Thomas Newkirk



Tri-State Math Meet

On Wednesday, January 29, 2014, Winnacunnet HS hosted a regional math meet. Kathleen Rhoades and Erica Howell, advisors to the WHS team, organized the meet for thirteen schools. Dover, Winnacunnet, Londonderry, Pinkerton Academy, Portsmouth, Exeter, Windham, Great Bay Charter School, Timberlane, Amesbury, Oyster River, Masconomet, and Somersworth High Schools all participated with both Varsity and Junior Varsity teams competing. The Winnacunnet teams had a great home advantage, scoring their highest all season with both Varsity and Junior Varsity finishing in 3rd place. Many WHS teachers volunteered to proctor or help out with our home meet. Kudos to all for a great meet! Here are a few thoughts to help our teachers, parents and students understand what Math Team is all about!

What is a Math Meet?

Math meets in the tri-state math league occur 6 times per year at various schools. Other member schools attend to compete in 5 different categories and team round. The categories change each meet, but are the same from year to year. Each school has a varsity team and some have a JV team. There are also spots for alternates (non-scoring). Each team has 10 students. They are allowed to compete in 3 categories each as well as team round. A correct response earns 3 points.

What is the flow and challenge like?

Each round (category) is 10 minutes. Students participating in that category go to their designated rooms and answer 3 questions. The difficulty ranges within each category so that the 1st question is usually the easiest, and the third the hardest. Each meet always has 3 categories that freshman can compete in. (You would need to know some geometry) 2 categories are typically for upperclassmen (would need at least Algebra II). At the end of the ten minutes the students hand in their work and the next category begins. Team round is after the completion of all 5 categories.

What types of problems do students encounter?

The problems vary in difficulty from meet to meet and category to category.

Are they all singular responses or are there team problem solving events?

The 5 categories are individual. During team round each 10 person team is split into 2 groups. They answer 5 questions (1 from each category). These questions are typically a lot more difficult.

How do students get involved with the team?

We hosted a sign-up meeting in early September. We also recruited Geometry Honors freshman by writing a letter to them and distributed the letters through their freshman seminar teachers. Additionally, we have typically recruited students in class/other activities that would appear to be interested in this type of club.

What recommendations would you make to students aspiring to become part of the WHS team?

Just sign up! We would love to have students join at any point during the year. We have weekly practices and would be happy to see new faces at any time.

What is the pace of the competition like?

Each category is 10 minutes and students compete in 3/5 categories. So there is time in between to socialize/snack/etc.

How does this competition help to prepare students for their future?

They will be doing a lot of problems in which they must apply different concepts/skills within 1 problem. They need to work together in the team round – good communication is key. There are also leadership opportunities as we have several senior captains each year.

Is this notable for college applications? How have students used this experience in the past?

Yes. Additionally, there are scholarship opportunities available for the high scorers of the league (awarded at the last meet).

How would you describe the camaraderie of the team members?

They get along with each other really well. Typically the older students help out the freshman and newer members during the meets.

What is the usual participation like? Do students compete all through high school?

They can participate all 4 years. The questions get easier once the students get a few years under their belt. They know more math and better know the types of questions that will be asked. Some students will come to a few meets a year because of other commitments (sports, etc.) so we encourage many to participate in order to represent our school well.

Does it assist students in their academic studies…how do you see it?

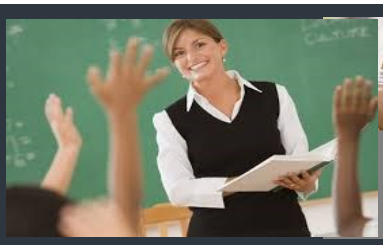
Sometimes. It makes a lot of the students less afraid of dealing with more complex/multi step problems in class. It also helps kids use skills they may not have used in a while. For example, an Algebra II student might not remember a lot of geometry but they see it in math team so they are more prepared for trigonometry when they see those types of problems again.

What do you like about it as coaches?

I love seeing the kids get excited about math. My favorite part of each meet is seeing how the kids interact with each other during the team round. They have great academic conversations. I like seeing how different students take a different approach to solving the same type of problems. I have had great conversations with kids about multiple solutions to questions.

What are the challenges you face in building a successful team?

It is always a struggle to get kids to come to practice. Part of it comes from our audience. We have a lot of kids who are so committed to many different clubs, activities, and sports. It is difficult for them to find time to come to a lot of practices when they have so much going on. We have tried to be flexible in that because in the end, we want kids to participate.



Faculty Profiles

Drew Szeliga
Math & Social Studies Teacher
Barnard School

Born: Born and raised nearby in Newmarket, NH
B.S. Math Education, Masters in Education, UNH
Teacher: Grades 5-8 mathematics and Grade 7 Social Studies

Drew has been with SAU 21 for 7 years. One year as an intern at North Hampton and six years as a teacher at South Hampton Barnard School.

Drew says he is “nothing of a world-traveler, but has been across the northern half of the country with his wife, Elizabeth. I once spent two weeks in France during high school and struggled greatly to acclimate to French culture”. Music, cycling, basketball and birding are all hobbies that he is very passionate about. In his free time he pursues those interests with his wife and new son, Luke.

Striving to be the most effective teacher possible is always the greatest challenge in teaching according to Drew. Having the same students from grades 5 through 8 has given him a special teaching situation, where he can really follow his students’ progress. One of his strengths and pleasures has been to become an advocate for reluctant math learners, helping them gain confidence and enjoyment in a subject that was once a struggle for them.

Drew has been working recently on Performance Tasks and Assessments and how they can show student growth and understanding over the long term. It is something he has started to include in his classroom. He introduces his students to more rigorous problem sets and alternative forms of questions that require reasoning and proof. He has been working most recently with the Professional Learning Committee developing a new learning plan for the district and has been a member of the SAU21 Vertical Mathematics Team. Drew states that “The best part of his “day is sharing in laughter with the kids”.

Common Rubric Used for Mathematics Grade 3-8 from Drew Szeliga

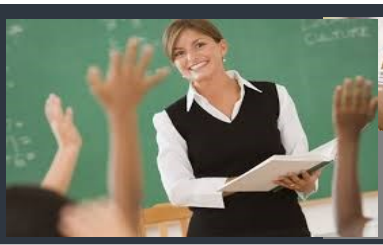
Common Math Assessment Rubric (grades 3-8)				
	Level 1: Limited Progress	Level 2: In Progress	Level 3: Meets Expectation	Level 4: Exceeds Expectation
Calculations	I have consistent errors in my calculations AND/OR I have consistent errors in my process	I have consistent errors in my calculations BUT my process is correct	My calculations are correct and my process is correct	My calculations and process are correct AND my process can easily be followed (neatly organized)
Explanations	I wrote an explanation BUT I did not support it with correct math concepts	I wrote an explanation and supported it using a correct math concept but there were consistent errors in the process	I wrote an explanation and supported it using a correct math concept AND my process is correct	I wrote an explanation and supported it using more than one correct math concept AND my process is correct.
Visuals	I created a visual but it was not used correctly to support my process	I created a visual that was used correctly to support my process BUT I made consistent errors	I created a visual that correctly supports my process	I created a visual that was used correctly AND my visual can easily be followed (neatly organized)

Grade 5 Fraction Assessment

Mortimer had 3 ½ bars of chocolate. If he wanted to give ¾ of his chocolate to his friend Alan, how much chocolate would Alan receive?

Part A: Show your work (your mathematical calculation), draw a model of the scenario and solve.

Part B: Explanation: Explain the parts and process of the mathematics that help you to arrive at the correct answer.



Faculty Profiles

Janice Arsenault
Business Teacher
Winnacunnet High School

Education and Degree(s):
- ♦ Merrimack College: BA Business Administration
- ♦ New Hampshire College: MA, Business Education
- ♦ Post graduate work at New England College

As a child, Janice thought she wanted to be a teacher, more specifically an English teacher, however her path changed after taking a high school book-keeping class. Janice enrolled in college to become an accountant. She was employed for many years as an accountant for a women's clothing manufacturer, KGR, in Lawrence, Massachusetts. She would drive by schools on her way to work and realize that teaching in a school was where she really belonged. Teaching was her passion and she made the decision to change careers. With the support of her family, she returned to school to make this dream a reality.

Janice began teaching at Winnacunnet and has continued with devotion for the past 15 years. Her love for her students, her classes, and her enthusiasm for thoughtful changes that make a difference to students are emulated by her professional commitments. She is the Student Council Advisor, a LifeSmarts Coach, and the Project Unity Advisor. Her embedded professional learning projects emphasize thoughtful changes to her strategies and curriculum that assist students in making better decisions. During professional development this year, she worked with a colleague, to create a rubric that would ensure that assignments and assessments in the Business Department reached levels three and four on the Webb's Depth of Knowledge scale (see http://www.sau21.org/sau/index.php/departments/99-curriculum). She and her colleague are creating and revising assignments to meet these goals. By requiring students to reach beyond memorization and to instead use their knowledge to apply to real life situations and simulations, they are giving students the tools needed to become college and career ready. It is an opportunity to develop beyond a text book or classroom.

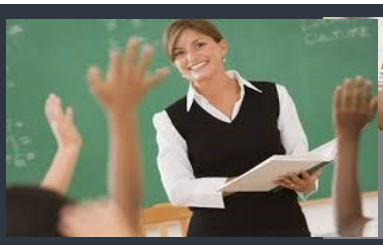
Janice loves to read and attend Winnacunnet sporting events, plays, and concerts, where she enjoys the opportunity to see her students and others through a different lens (other than in the classroom). Janice has been involved with the WHS Curriculum Committee, Grading & Assessment Committee, and the NH Quality Performance Assessment Committee.

She has had the privilege of working with many students at Winnacunnet High School, not only in classes, but also in the extra curricular activities she's involved in or volunteers for. She states, "The successes in my work are our students' successes. Student Council has been recognized as an Honor Council for seven years. Winnacunnet is home to the third NH State President [of Student Councils] in the last six years. Our LifeSmarts team is traveling to the state championship competition this year. Project Unity is planning their second annual respect rally to recognize the achievements of some students that are rarely publicly recognized. I am very proud to play a role in all of these endeavors."

Janice's biggest challenge is time! The most limiting resource in our world. She explains that "both students and I are challenged by the lack of time to accomplish all that we would like."

Her favorite part of teaching: "That moment when you realize that a student 'gets it'. When you see the understanding unfold and know that the students will take what you just shared with him or her and use it in their future."

Level of Complexity (measures a student's Depth of Knowledge)	Key Verbs That May Clue Level		Evidence of Depth of Knowledge
Level 3 **Strategic Thinking** Requires reasoning, developing a plan or a sequence of steps, some complexity Bloom *Analyze* "Breaking information into parts to explore understanding and relationship." *Evaluate* "Checks/Critiques – makes judgments based on criteria and standards."	Appraise Assess Cite evidence Check Compare Compile Conclude Contrast Critique Decide Defend Describe Develop Differentiate Distinguish	Examine Explain how Formulate Hypothesize Identify Infer Interpret Investigate Judge Justify Reorganize Solve Support	• Solve non-routine problems • Interpret information from a complex graph • Explain phenomena in terms of concepts • Support ideas with details and examples • Develop a scientific model for a complex situation • Formulate conclusions from experimental data • Compile information from multiple sources to address a specific topic • Develop a logical argument • Identify and then justify a solution • Identify the author's purpose and explain how it affects the interpretation of a reading selection
Level 4 **Extended Thinking** Requires an investigation, time to think and process multiple conditions of the problem. Most on-demand assessments will not include Level 4 activities. Bloom *Synthesize* "Putting together elements and parts to form a whole *Evaluate* Making value judgments about the method."	Appraise Connect Create Critique Design Judge Justify Prove Report Synthesize		• Design and conduct an experiment that requires specifying a problem; report results/solutions • Synthesize ideas into new concepts • Critique experimental designs • Design a mathematical model to inform and solve a practical or abstract situation. • Connect common themes across texts from different cultures • Synthesize information from multiple sources



Faculty Profiles

Melodee Carter Guyette
Special Education Teacher
Lincoln Akerman School

Born: Born and raised in Newburyport, MA
B.S. Elementary Education and Special Education, Westfield State, MA , M.Ed. in Curriculum & Instruction, Notre Dame College , NH, CAGS Inclusionary Education, University of New England

Melodee is a Middle School Special Education Teacher, Case Manager and grade 7/8 Literature Co-Teacher. She has been with SAU21 for over 25 years.

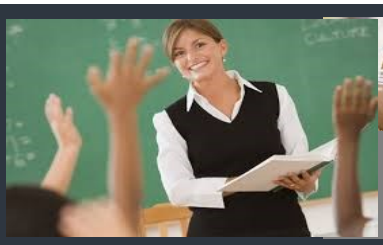
Melodee grew up in Newburyport , MA and always wanted to be a teacher. Her career in teaching began after her two daughters started school. She was a long term substitute in Seabrook and then at LAS. On the last day of that position she was told the teaching position was available. Melodee moved to Hampton Falls and both of her daughters attended LAS and WHS. Over the years, Melodee says she has "been blessed with wonderful mentors (professors, administrators, friends)" who have supported her in furthering her education and reaching beyond the walls of the classroom. Learning how to write grants has led her to participating in The Christa McAuliffe Fellowship and The Japan Fulbright Fellowship programs. She has been a Presenter at national and international conferences on topics of portfolio assessment and special education. Learning about other people and their cultures is important to her and her family. Melodee's oldest daughter taught on an Indian Reservation in South Dakota. Melodee was able to spend her school vacations at the Indian Reservation working with her daughter. Melodee also has family and friends who live in Europe. She and her family visit Europe whenever they can.

Her greatest joy is spending time with family, especially her granddaughter. Her second joy is traveling, especially to Asia, she has been to Japan four times. Melodee loves to read, garden, and attend artistic experiences (visiting museums, attending concerts). She is a member of the Seacoast Education Association, Council of Exceptional Children, Learning Disabilities of America.

The biggest challenge for Melodee is working in the same position over the years and not getting "stale". She has followed in the footsteps of the wonderful people she has worked with over the years who continued to teach "fresh". This challenge has also inspired her to take advantage of all the resources available at LAS, SAU 21 and the community at large. Melodee enjoys helping others follow their dreams. She mentors staff and students and enjoys teaching college level classes.

Melodee is currently enrolled in an online doctoral program in Educational Leadership at the University of New England. At first, she was skeptical about online learning, but has found that it is a good fit for her. The pace is very manageable, there is no traveling, and she studies with others from all over the world. Using the online format has helped her in using online technology with her own students.

Her favorite part of teaching is "The kids!!!!". "Living and teaching in Hampton Falls is such a blessing! You get to know the kids and their families so well. I love to see them after they have left LAS ….how they have grown, the adventures they've had, etc. I am just beginning to have the children of past students, as students. It is a wonderful experience!"



Faculty Profiles

Wendy Crowley
6th Grade Teacher
North Hampton School

Born: Houston, Texas. Grew up as an "Air Force Brat" she says and moved around every few years which included home in California, Missouri, Massachusetts, Nebraska, Newfoundland, Arizona, New Zealand, Pennsylvania and New Hampshire.

Education: B.A. in Education & Anthropology, Victoria University, New Zealand, M. A. in Integrated Studies, Cambridge College, Boston

With a parent in the air force, Wendy learned to adapt to new schools and new situations; a benefit of her experience moving often while young. She enjoys traveling in combination with her interests in anthropolgy and archaeology. Wendy has been teaching in SAU21 for 40 years! She began student teaching at Winnacunnet High School and was hired to teach Social Studies. After two years she transferred to teach at North Hampton School and has been there ever since.

Her hobbies and interests have waxed and waned over her career. As her three children were growing up (all successful graduates of North Hampton and Winnacunnet - she says thank you to all the wonderful teachers who mentored them along the way), Wendy enjoyed running as an outlet and it continues to this day. Recently, her son Ryan convinced her to run a ½ marathon. She has completed 4 and is training for her 5th at the end of April. Wendy loves to read and always has several books going. at once. She enjoys hiking despite having had a near death fall on the Gulfside Trail in the White Mountains in early June a few years ago!

For the past 10 years Wendy has been involved with the UNH Belize Teacher Program, a four credit graduate course that brings classroom teachers to classrooms in the Toledo District of Belize for February break. Originally, she took the class as a participant and found that it changed her both as a teacher and as a person. It stretched her "outside her comfort zone" and reminded her about what it was like to be a student, just figuring things out she says. She has been able to pursue personal interests; archaeology, herbal remedies and the Mayan culture, but has also been able to connect her students here directly with Belizean students. Last year her 6th graders created picture books about their study of the moon, which she brought to Belize to share. She found that the 5th form students there, coincidentally, had also recently completed a study of the moon! Those connections have helped her students appreciate how small our world really is. This year is Wendy's 7th year as a staff member of the program and she will be bringing 11 educators to Independence in the Stann Creek area of Belize. Wendy highly recommends this program to everyone.

When Wendy first began teaching she vowed she would never become a teacher who "got stuck in a rut and never changed". When new teaching opportunities presented themselves, she tried them. She began her career at the high school level teaching anthropology, which she was passionate about. Next she taught 7th and 8th grade social studies, which she was also passionate about. Fifth grade was her next teaching adventure and she loved the students and the teachers she worked with. Then she decided she "needed to be with slightly older students" and 6th grade has been her home ever since. She began as a social studies teacher, then math, reading and currently science. Wendy never thought she would teach science, but she is exuberant about the subject. She explains, "it has been about discovering and sharing new things and then helping my students see all the connections around them".

Wendy is constantly looking for new "real life science" for her students. This summer (thanks to her daughter Morgan) she signed up for 6 days of Intro to Remote Sensing and Digital Maps. These free summer workshops are offered through the NH Geographic Alliance, taught by passionate people, who love maps and data. It was a stretch for her, but she could see the applications for her students. It was a beautiful blend of a Social Studies map background with all the data that scientists have been organizing together digitally. She reflects on the idea that she is also a student, constantly learning new things to share with her own students.

Over the years Wendy has been involved with many SAU21 and school committees. Currently, she is focusing on composting and recycling at North Hampton and getting students into the new greenhouse. Her favorite part of teaching, "Every day is different – never boring!" She loves the students she meets and gets to know over the course of the years. Visiting with them years later and learning about where they have gone and what they have done is a delight.

5th Form classroom in The Punta Gorda Methodist School

World Languages

The World Language teachers are embarking upon the annual placement exams for this year. The exams will be given during the month of March and reviewed by teachers on April 4th during our early release. The team will also be participating in the awareness session about Student Learning Objectives or SLOs. This common placement exam is one way in which teachers across the SAU are able to document their students' performance. By using an assessment throughout the year that focuses on a particular area of development, 8th grade World Language teachers would be able to chart their students' growth. This is the basic premise to Student Learning Objectives, where a specific area of student learning is tracked over time.

For example, the teacher might have numerous opportunities to document through writing samples or taped interviews, a student's ability to communicate in Spanish. The teacher might use a well-written rubric that documents things like word choice, verb conjugation, inflection, or other attributes that add value to communicating well in that language. All of those indicators are extremely valuable in giving students feedback, but they also help to tell the story of student growth. Some might also argue that they are more reliable because of the multiple opportunities for students to perform rather than just one pre and post assessment. All of our teachers will begin using SLOs by 2015.

There are numerous examples on the web for World Language SLOs at different grade levels and some rubrics for the college level. The most effective will be those that truly assist teachers in defining high expectations for student performance and then charting the pathways for students to get there and using real student work to evaluate how well we are doing.

Curriculum Matters is a communication tool for SAU 21 teachers, parents, and community members. It provides a mechanism for the Vertical Curriculum Teams to share their efforts to build a coordinated curriculum that enhances the learning opportunities and performance of all students. Please learn with us as we embark on these efforts and look for opportunities that align across disciplines. We encourage our larger community to follow some of the **web** links to see how our work is influenced and to help students understand how to do their very best in their learning and achievements. Please direct any questions or suggestions to Anne at the SAU 21 office at 926-8992 x105. We appreciate your input as we learn together.

Social Studies

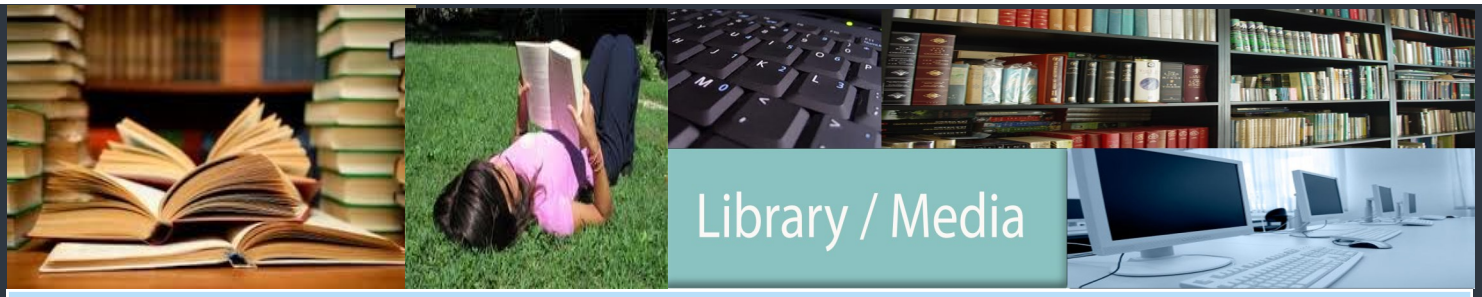
Model Congress at Lincoln Akerman School

Many of our schools prepare students for educational field trips by setting the stage through in-classroom experiences or research that engage them in the history or significance of the places they will be visiting. One example is the preparatory unit for the 7th grade class trip to Washington D.C. Each of our Middle Schools in SAU21 has a Washington D.C. trip.

At Lincoln Akerman the students begin by exploring topics surrounding the specific sites of Washington and historical events tied to the city. The students are first presented a series of Powerpoint presentations designed to give an overview of people and places in Washington. This helps place into context the sites and information to be covered while on the trip. Next, students explore some specific aspect of DC history or the government and create a topic guide to present to a small group. This topic guide is multifaceted, involving: researching a topic, identifying a historical tie, and relating this to a specific site being visited. Additionally, since September, the class has been simulating a Model Congress to deepen their understanding of how the US government works. Using their assumed roles as a representative from a specific state they debate issues of national importance. In DC students will have the opportunity to meet with their Representatives.

Submitted by:
Don Conti &
Liz Szeliga,
Hampton Falls
Humanities

Designed By Trevor Duquette



One of the areas receiving greater emphasis with the implementation of the Common Core standards is increased reading of nonfiction titles. As a result at Winnacunnet High School, the Hawley Library Media Center has been focusing on further developing this area of their collection, with special emphasis on adding titles for reluctant readers. Through Winnacunnet Professional Development, Library Media Specialist, Linda Osborne, has been researching and compiling a list of titles that will support student research. Library budget funds will be used to purchase these books and library displays will highlight the materials for classes or for simple pleasure reading.

After completing units on website evaluation and plagiarism (CCSS.ELA-LiteracyW.6.8) Sue Harter, Library Media Specialist at Seabrook Middle School, has been working with sixth graders on researching and creating presentations on the 2014 Winter Olympics. Students were assigned a winter Olympic event and asked to research the history of the event, the history of the event in Russia, the equipment used in the event, and the event today. Students used their Google Drive accounts to create presentations to share with their classmates. [CCSS.ELA-Literacy.RI.6.7-Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue]. Library Media Specialist Ms. Ross continues to work with students at Seabrook Elementary School to read and research using nonfiction as well as become able to independently locate library materials.

In order to continue the integration of the Common Core Standards across the curriculum, the Lincoln Akerman School staff is currently reading the book *The Core Six: Essential Strategies for Achieving Excellence with the Common Core* by Harvey F. Silver, R. Thomas Dewing, and Matthew J. Perini. Administrators, teachers, and paraprofessionals are working together in small groups during early release days to identify ways current teaching practices can be enhanced by the practical suggestions outlined in *The Core Six*. Amy Roy, Lincoln Akerman's librarian, has been employing one of the techniques she learned by encouraging her K-2 students to support their opinions about their reading with evidence from the text, a major tenet of the Common Core. At the conclusion of each read aloud she provides a statement about the book. After discussing the meaning of "evidence", students are asked to provide evidence, or examples, from their reading to support why they agree or disagree with the statement Mrs. Roy has given them. Students are enjoying the opportunity to play "detective" as they hunt for information to support their thinking during class discussions.

Fourth grade students at North Hampton School were recently presented with a new debate topic. This coordinates with CCSS.ELA-Literacy.W.4.1 - (Write opinion pieces on topics or texts, supporting a point of view with reasons and information). They chose to debate how they could get more time in Art. Once they began their research, by using a survey, they realized that it was not truly a 2-sided debate issue with a pro and con side. The students collected a great deal of research through real experiences and created two presentations. They wrote a persuasive essay from each point of view and delivered the essays to their peers. They also learned about using all of their senses for input and showed by example this approach to their fellow fourth graders. Each student was presented with a brown paper bag with 5 questions on the outside. They were asked to HEAR what might be inside; to SMELL what might be inside; to TOUCH what might be inside; to SEE what the bag contained; and then to use the contents to construct their own work of art; and finally to TASTE what they made. Clearly many had never thought of our library as a place to do art, but now their thinking has been expanded.

Editor's Note: The above snippets of work being done across SAU21 illustrates the many ways our staff is learning about the Common Core and beginning to implement new activities and resources in support of creative and meaningful student learning. Although I am still wondering about the creations above and how they tasted...I am warmed by the ideas and sharing that our Library Media Specialists bring forward as they meet with each other to discuss the significance of their work. Each lesson tried adds to the learning of our staff and collectively they have the opportunity to scrutinize those that add value to student learning and those that do not. Implementation and getting things right requires experience. Our teachers have considerable experience and continue to learn in capacity-building ways; where one staff can assist others through collaboration, cooperation and coordination of an effective curriculum.

SAU 21 Professional Learning and Teacher Appraisal Systems

Representatives from both committees met on February 10, 2014 to discuss the flow of our developing professional learning and teacher appraisal master plans. This effort supports the developing model which interweaves professional learning in support of effective teaching and student learning. The advancement of a coaching model requires a dedication towards advancing student learning with highly effective teachers. It requires us to reflect regularly on our students' performance and advance our own development focused on that performance. As stated in our previous communications, the appraisal system will depend upon multiple measures of student performance which include school-wide attributions (i.e. NECAP, Smarter Balanced Assessment) as well as local assessments that we develop and use as vertical curriculum or grade level teams, or individually.

To that end, the committees recognize that the S.M.A.R.T. Goals or data goals initiated by individuals or developed by schools or teams will ultimately become the Student Learning Objectives (SLOs) through which we document our students' growth. That growth measurement will provide 15% of the summative evaluation of our professional staff. Therefore two of each teacher's professional learning goals will ultimately be developed as SLOs. We expect that as our plan moves forward for 2014-2015 school year, our efficacy in using student performance information will also grow. We will begin with an awareness session on April 4th open to middle and high school staff and continue with additional training opportunities at each school this year and the beginning of next year. Our elementary teachers are invited to a special Writer's Workshop on April 4th. The *Student Learning Objectives* event will feature a short presentation by NH Dept. of Education staff, followed by collaborative work with teams of teachers. Vertical Curriculum Teams or course specific teams can work together to review student work and begin thinking about SLOs that speak to a specific challenge area of the curriculum. This experience will assist teachers in understanding how their review and reflection of student performance in their own classes should inform their professional learning goals; since SLOs can be developed and used by teams of teachers or individuals. This reiterative cycle of reflection on student performance, goal setting, and review of student data is a major part of both the Teacher Appraisal and Professional Learning Master Plans.

Teachers, Vertical Curriculum Teams, and School Board Members are invited to attend the April 4th awareness and collaborative work session. It should be understood that assessments may be performance-based, test-like, or project-based. We recognize that multiple assessments of student learning over time can be as valid as nationally normed assessments. By using the local assessments multiple times to chart student performance, we increase the likelihood that the results are valid and if we have the opportunity to use the developed instruments with colleagues assessing student work, we increase the inter-rater reliability.

Physical Education teachers in SAU 21 schools have been administering the Fitnessgram Assessment to all of their students. The teachers are focusing in particular on grades 3,5,7 and 9 to assess student's fitness levels across the SAU. The Fitnessgram is a health related physical fitness assessment tool. The test items that are used focus on these areas of fitness: aerobic capacity, muscular strength and endurance and flexibility. Components of the test items are the Pacer (aerobic capacity), Curl-up test (abdominal strength), Trunk Lift (trunk strength and flexibility), 90 degree Push-up (upper body strength) and the Back-saver Sit and Reach (flexibility). Students are tested and their results are not compared to each other, but to health related standards that have been established by The Cooper Institute. The standards have been created by age and gender and indicated good health or the Healthy Fitness Zone. Once the tests have been administered the students conference with their Physical Education teachers to see what areas they fall in the Healthy Fitness Zone and what areas do they need to improve. This allows the Physical Education teachers to tailor their classes to the needs of the students. Students in middle school are asked to set up an individual exercise plan with the assistance of their PE teacher. This is one of our curricular standards that students will be able to create their own fitness plan by the end of eighth grade. While this is going on in the gym the Health teachers are reinforcing healthy eating and exercise in the Health classroom.