RANKIN COUNTY SCHOOL DISTRICT

# SECONDARY CONNECTION

MIDDLE SCHOOL / HIGH SCHOOL CURRICULUM NEWSLETTER

OCTOBER 2017

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# New Teacher Spotlight

Cindy Christian

Rankin County School District is home to a handful of new teachers each year. Many teachers transfer to our district from other schools and areas from across the state. Our district also has a group of brand new teachers who are making their mark and changing lives throughout the district.

One of these teachers is Miss Victoria Burnham. She is a first year physical education teacher at McLaurin High School, and she is undoubtedly moving her students from great to best. Miss Burnham is a native of Florence, Mississippi, where she attended Florence High School. Then, she attended Hinds Community College where she played soccer. She earned an Associate's Degree from Hinds and later majored in Kinesiology at Mississippi College. As a student at Mississippi College, she earned her K-12 physical education teaching endorsement. Luckily, after graduation she made the decision to return to Rankin County and begin her teaching career as a Tiger at McLaurin High School.

Miss Burnham is making a direct impact on the students and people from the McLaurin community. She has a contagious energy that transfers into her classroom instruction. When she is asked about her experience so far she states, "I could not have asked to start my teaching career in a better school district! Every one from the people I have met at the county office to the educators and administration at McLaurin has been so welcoming and enthusiastic." She also shows that same enthusiasm for her students.

The team effort at McLaurin is obvious from the moment one enters the building, and especially in Miss Burnham's class. Mrs. Tammy Crossetti noticed it immediately and states, "[Miss Burnham] has the *It Factor* as I love to call it. She has the natural ability to encourage students to want to learn. She has her PE classes read an article from Achieve once a week and write a response to the thought question. She is such a rock star for McLaurin High."

Miss Burnham also includes a variety of teaching strategies that engage her students and create an atmosphere of respect and student learning. She explains, "I have found the best strategy I use is to take physical education from one dimensional to multi-dimensional. I incorporate the history and origin of every sport we cover into my lessons and we take the time to read relevant articles and write adequate responses. It is my belief that every student should be a well-rounded individual whether they are active in athletics or they are in a physical education classroom." Miss Burnham's knowledge and enthusiasm for learning will continue to take McLaurin High School and RCSD from great to best!

*Victoria Burnham McLaurin High School*

# Google Apps for Education:

## Transforming the Classroom

by Brian Gaddie
Instructional Technologist

The Google Apps for Education or GAFE suite has expanded at a remarkable rate. There are now a multitude of applications for teachers to use in their classrooms to enhance and transform their classroom. In the past when we thought of Google, we thought of a search engine. While that is still true, there is so much more in the way of collaborative and engaging tools available. GAFE is a cloud-based collection of applications that allow students and teachers to access their files, images, documents, folders, and many other items from any computer or mobile device with an internet connection, anywhere in the world.

Using GAFE allows teachers the opportunity to view students' work in real-time and provide immediate feedback.

The opportunity to create an entirely new learning environment is now possible for any teacher any time. With the implementation of 1:1 in our district, we are now able to do even more with these applications such as the creation of collaborative documents between multiple students and/or teachers at the same time using Google Docs, Sheets, or Slides or the implementation of creative projects that allow students to explore, make, and own their learning using an application such as Google Drawings. When our students take ownership of their learning, authentic learning occurs. Through creation, collaboration and research, students can immerse themselves in learning and gain invaluable knowledge that is measurable and applicable outside of the school.

Below are few examples of GAFE and what they can do for teachers and students:

Google Docs: Students can create documents that are similar to what they are used to creating in other programs. Beyond those standard documents, Google Docs can be shared with others, allowing multiple people to work on a single document at the same time. Students can also research and cite sources within a Google Doc using the many tools and add-ons available within the application.

Google Drawings: This is a lesser-known app but it is one of the most powerful apps in the GAFE wheelhouse. Drawings allow students the opportunity to not only draw and create custom graphics, but it also allows teachers to create things like interactive worksheets, annotated images, or maps and even things like mind maps and graphic organizers. Like all apps in the suite, this app is also collaborative. Students and/or teachers can work together on a single canvas to create something that is truly meaningful.

Google Keep: Note taking is necessary at times but it's not always the most exciting and engaging form of instruction. Google Keep changes all of that with its collaborative note-taking interface. Students can create short or long notes and have them all in one place all the time. Google Keep allows users to insert images and links within their notes to create a truly engaging and interactive note-taking experience. Another great feature of this application is that it integrates directly into Google Docs for easy transfer of thoughts into document creation.

This is a small sampling of what GAFE offers. There are many more amazing applications available, and I would encourage to take a look at each one of them. Play with the apps and jump in head first to explore everything available and how it may benefit you and your students.

## reminders

### Book Me

Teachers and administrators may book me anytime for one-on-one or small group trainings involving any type of classroom technology use. Just go to the technology page on the RCSD website and click the instructional technology page. Or use this direct link to book a time and date: *briangaddie.youcanbook.me*

### Continue Being Good Stewards of Bandwidth

Remember to limit the amount of streaming you do in your class. Streaming includes things like YouTube videos, online music, and any type of podcasts/webcasts. Showing videos and the like from your projector to the entire class rather than having students stream individually on each of their computers is a much better option and will ensure that you are being a good steward of our bandwidth.

# Implement tasks that promote reasoning & problem solving

by Pam Franklin_ LaVonda White_ Jennifer Wilson

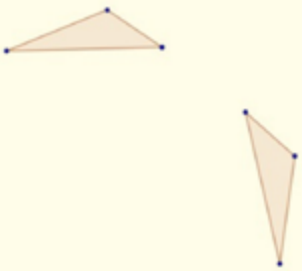
Implement tasks that promote reasoning and problem solving is one of the 8 Mathematics Teaching Practices from the National Council of Teachers of Mathematics' *Principles to Actions*. "Effective teaching of mathematics engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow multiple entry points and varied solution strategies."

The Mathematics Teaching Practices are for teachers. These are practices that we use while planning and enacting our lessons. They complement the Math Practices found in our standards - how we want students to learn and do math. In particular, implementing tasks that promote reasoning and problem solving will likely provide students the opportunity to engage in MP1 make sense of problems and persevere in solving them and MP3 construct viable arguments and critique the reasoning of others.

What tasks have you implemented in your classroom recently that promote reasoning and problem solving? What tasks do you plan to implement in the coming weeks?

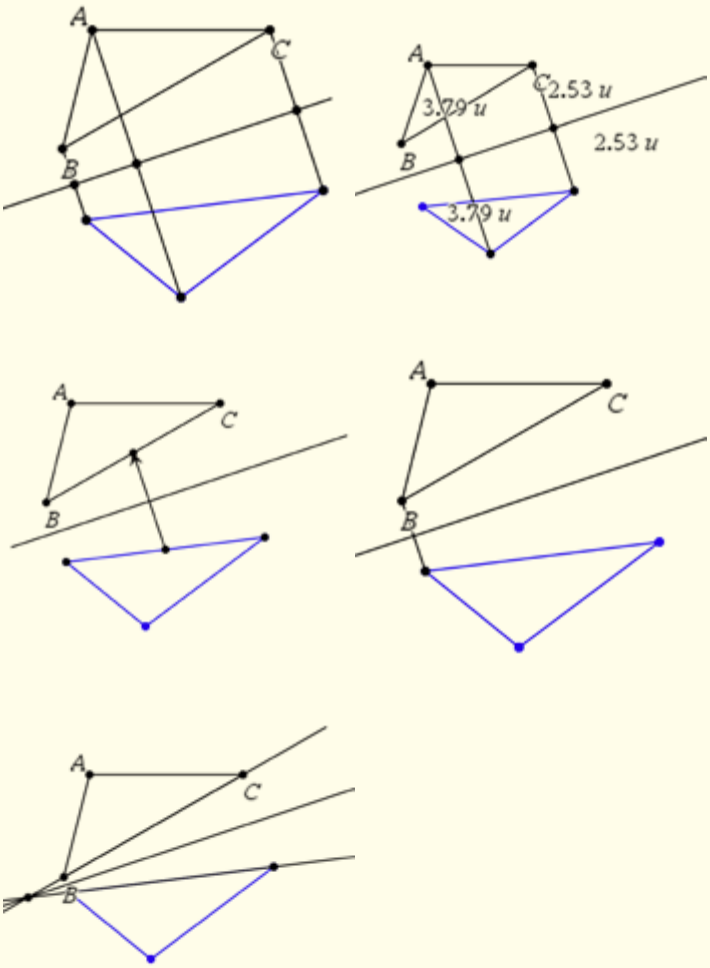
Students in a geometry classroom recently engaged in the *Reflected Triangles task* from Illustrative Mathematics.

The triangle in the upper left of the figure below has been reflected across a line into the triangle in the lower right of the figure. Use a straightedge and compass to construct the line across which the triangle was reflected.



- What do you notice about the task?
- How is the task different from other tasks you've seen on reflections and triangles?
- How might this task promote reasoning and problem solving for students?

Here is some of the student work from the task.




- One student constructed the line of reflection by connecting the midpoints of the segments connecting all three pairs of corresponding vertices.
- One student constructed the line of reflection by connecting the midpoints of the segments connecting two pairs of corresponding vertices.
- One student constructed the line of reflection by constructing the perpendicular bisector of the segment connecting one pair of corresponding vertices.
- One student constructed the line of reflection by constructing the perpendicular bisector of the segment connecting the midpoints of one pair of corresponding sides.
- One student constructed the line of reflection by extending one pair of corresponding sides and then constructing the angle bisector.

How does this task promote reasoning and problem solving for students?

Where would this task fall for most of your students in Smith and Stein's Task Analysis Guide?

From Principles to Actions (NCTM 2014, p. 17): Research on the use of mathematical tasks over the last two decades has yielded three major findings:

# Implement tasks that promote reasoning (continued)

## The Task Analysis Guide

| Lower-Level Demands | Higher-Level Demands |
|---|---|
| Memorization<br>• involve either reproducing previously learned facts, rules, formulae or definitions OR committing facts, rules, formulae or definitions to memory.<br>• cannot be solved using procedures because a procedure does not exist or because the time frame in which the task is being completed is too short to use a procedure.<br>• are not ambiguous. Such tasks involve exact reproduction of previously-seen material and what is to be reproduced is clearly and directly stated.<br>• have no connection to the concepts or meaning that underlie the facts, rules, formulae or definitions being learned or reproduced. | Procedures With Connections<br>• focus students' attention on the use of procedures for the purpose of developing deeper levels of understanding of mathematical concepts and ideas.<br>• suggest pathways to follow (explicitly or implicitly) that are broad general procedures that have close connections to underlying conceptual ideas as opposed to narrow algorithms that are opaque with respect to underlying concepts.<br>• usually are represented in multiple ways (e.g., visual diagrams, manipulatives, symbols, problem situations). Making connections among multiple representations helps to develop meaning.<br>• require some degree of cognitive effort. Although general procedures may be followed, they cannot be followed mindlessly. Students need to engage with the conceptual ideas that underlie the procedures in order to successfully complete the task and develop understanding. |
| Procedures Without Connections<br>• are algorithmic. Use of the procedure is either specifically called for or its use is evident based on prior instruction, experience, or placement of the task.<br>• require limited cognitive demand for successful completion. There is little ambiguity about what needs to be done and how to do it.<br>• have no connection to the concepts or meaning that underlie the procedure being used.<br>• are focused on producing correct answers rather than developing mathematical understanding.<br>• require no explanations or explanations that focuses solely on describing the procedure that was used. | Doing Mathematics<br>• require complex and non-algorithmic thinking (i.e., there is not a predictable, well-rehearsed approach or pathway explicitly suggested by the task, task instructions, or a worked-out example).<br>• require students to explore and understand the nature of mathematical concepts, processes, or relationships.<br>• demand self-monitoring or self-regulation of one's own cognitive processes.<br>• require students to access relevant knowledge and experiences and make appropriate use of them in working through the task.<br>• require students to analyze the task and actively examine task constraints that may limit possible solution strategies and solutions.<br>• require considerable cognitive effort and may involve some level of anxiety for the student due to the unpredictable nature of the solution process required. |

Stein, Smith, Henningsen, & Silver, 2000, p.16

1. Not all tasks provide the same opportunities for student thinking and learning.
2. Student learning is greatest in classrooms where the tasks consistently encourage high-level student thinking and reasoning and least in classrooms where the tasks are routinely procedural in nature.
3. Tasks with high cognitive demands are the most difficult to implement well and are often transformed into less demanding tasks during instruction.

If you are looking for additional tasks to implement that promote reasoning and problem solving, the following sites are some of our favorites.

*Formative Assessment Tasks*
*Estimation 180*
*Open Middle*
*Which One Doesn't Belong*
*Visual Patterns*
*Math Talks*
*Would You Rather?*
*Fraction Talks*
*Fraction Splats!*
*Dan Meyer's Three-Act Math Tasks*
*Andrew Stadel 3-Act Math Tasks*
*Robert Kaplinsky Lessons*
*101 Questions*
*Brilliant*
*NRICH*

If you are having difficulty finding a task to align to one of your standards or if you are trying a task for the first time, we are glad to provide support … just let us know how we can help you implement tasks that provide reasoning and problem solving. And as always, we love to come visit your classrooms.

# AMAZ

## Building Collaboration Within the Content

by Catherine Beasley

This year, we are taking the time to build a community of educators within each individual discipline and provide the opportunity to build more collaboration with these colleagues. The idea was that the conversation that could happen when everyone in the room has the same goal is **AMAZING**! And that is just what we have had... **AMAZING** conversation and collaboration, **AMAZING** suggestions for future growth, and an **AMAZING** start to building a community of history teachers across this district.

The theme for this year's social studies professional development is "Building Student Skills Within Our Discipline." It is important to recognize that literacy looks different across the disciplines. Teachers have now had the opportunity to look at and discuss Barry Olsen's article, *Academic Writing Across the Discipline*. This article led to a great discussion opportunity amongst social studies teachers about what literacy looks like in the history classroom. Here, we took the time to visit what reading and writing looks like for students across their day and make some decisions on what we, as social studies teachers, really want students to grow and learn in this discipline.

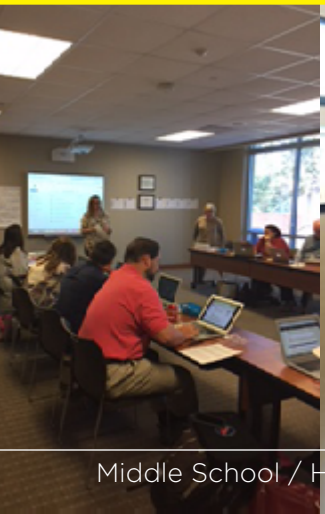
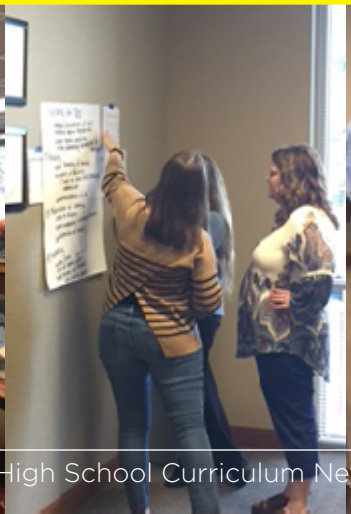
All of this discussion led us to the question, "How, then, can we create the opportunities for our

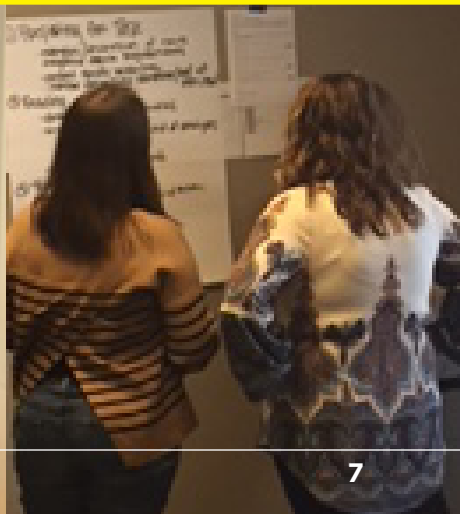
# ZING!

students to practice the skills that they need to understand literacy within the discipline of social studies?" The idea is for students to get practice in a variety of different skills that specifically relate to the content within history classes. We want students to interact with primary sources and become familiar with the language of the time periods that are studying. We want students to be able to read speeches and look at political cartoons and analyze the meaning behind them. We want students to grow in their knowledge of our past in order to become better, more productive citizens that can make decisions based on facts and carry on civil discourse. How does this happen? We build their skills in all of these practices!

As a district, the social studies teachers have built a toolbox of skills that can help specifically in the content. These skills are specific to the skills that RCSD teachers have decided are important within their individual content areas. Please take a moment to look at the resources the district social studies teachers have reviewed on the *LDC website*. Also, make sure that you are able to access the Canvas Resource course for Social Studies teachers - RCSD Social Studies. This will become a great collaboration page for you on your journey.

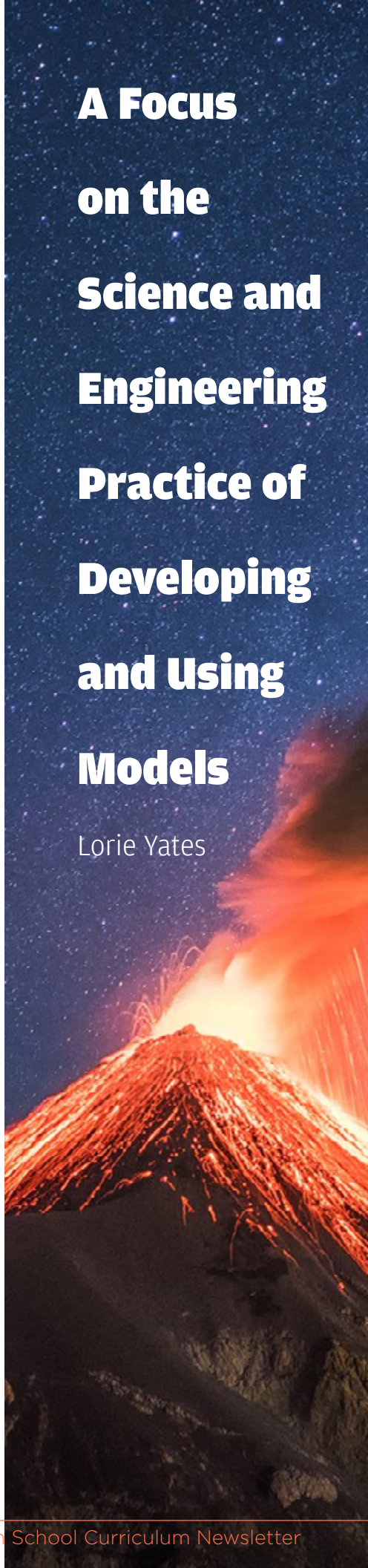
As I take the time to reflect on the professional development that we have completed with social studies teachers across the district this year, I am so thankful that our students have such a wonderful opportunity to interact with these great minds. Also, I am reminded that we must continually push ourselves to grow and learn in our field and discipline, but we must also push our students to exceed our expectations as well as their own!



# A Focus on the Science and Engineering Practice of Developing and Using Models

Lorie Yates



The Science and Engineering Practices are embedded in the standards and performance objectives of the *Mississippi College and Career Readiness Standards for Science* so that students develop the habits of scientists and engineers and to emphasize the importance of a student-centered, scientific community within the science classroom.

Although the practices work together and are not isolated, in this article, we will focus on the science and engineering practice of "Developing and Using Models."

Models may include diagrams, physical replicas, mathematical representations, analogies, and computer simulations.

Models should be used to represent a system (or parts of a system) that is being studied, to aid in asking questions and developing explanations, to generate data that can be used to make predictions, and to communicate ideas to others. Models are based on evidence. When new evidence is uncovered, models are modified. Therefore, students should be given the opportunity to evaluate and refine their models by comparing them with information they gather and then adjusting them to gain insights into the phenomenon being modeled. To mimic the practices of real-world engineering, students should use models to analyze a system to see where flaws might develop or to test possible solutions to a problem. Models can also be used to visualize and refine a design, to communicate a design's features to others, and as prototypes for testing design performance.

Often in science class, students are given a "textbook version" of a model and told what it represents. Little time is spent on the evidence for the model or allowing them to create their own models to explain natural phenomena. Students need opportunities to communicate how their models are consistent with all the current evidence on the system they are studying.

8th grade performance objective E.8.7.2 asks students to "create a model of the processes involved in the rock cycle and relate it to the fossil record." Rather than simply have students copy a diagram from a textbook or online resource, a teacher might show the class images of various rocks, rock formations, and fossils. The teacher could allow time for students to Think*Pair*Share what they see in the images, speculate on how the rocks formed, and discuss the relationship between the rocks and fossils in the images. Then, the teacher could ask students to draw a model depicting all the processes that go into the formation of a rock and create the model based on what they currently know about the rock cycle. It would be expected that the models not be perfect but would activate prior knowledge and provide a check of students' current understanding of the rock cycle. Next, students could complete a series of investigations or research the processes of the rock cycle. Students would then discover the connections between the rock cycle and the fossil record. After gathering their evidence on the processes of the rock cycle and how that relates to the fossil record, students then make revisions to their models, making sure they are consistent with the evidence they have gathered. After students have refined their models based on evidence, they then share their models with their peers and provide one another feedback. Finally, students can compare their models to actual scientific models in textbooks, scientific articles or in simulations such as *The Rock Cycle Gizmo* or *The Rock Cycle Interactive*. The class can see that their final models – if constructed from evidence gathered – will be consistent with the scientific model they see in the textbook, article, or simulation. Students would then be able to write an explanation about the processes involved in the rock cycle and how that relates to the fossil record using the model as supporting evidence.

This example illustrates the student-centeredness of the science and engineering practices. The students were not just told what the processes were and handed a diagram of the rock cycle. Rather, they tapped into prior knowledge, explored new content, applied the new learning to a new situation, and through modeling, explained a natural phenomena. Through this practice, students develop enduring scientific skills and deepen their understanding of the science content.

Do you want to learn more about engaging students in the practice of designing and using models? Go to *NSTA Insights: Modeling* and to the *Teaching Channel AUSL Blog* for more information. For examples of activities that incorporate developing and using models, go to *MPRES Toolkit for Teachers*. For an activity on using models to make predictions in earth science, go to *National Geographic*. Use *Annenberg Learner Interactives* and *Gizmos* to provide opportunities for students to design and use models online.

# BIG NEWS ON THE TESTING FRONT!

*by Montgomary Hinton*

Well, well, what a time it is here! Testing season is in full swing!

October 9, RCSD held a practice ACT for those RCSD students who have never taken an ACT test

October 11, all 9th graders took the PSAT. RCSD is seeing record growth in the numbers of 10th and 11th graders taking the PSAT! Go GO!

*UPCOMING*

October 28, National ACT Testing Day

November 27, ACT Accelerate for juniors/seniors only by school invitation only

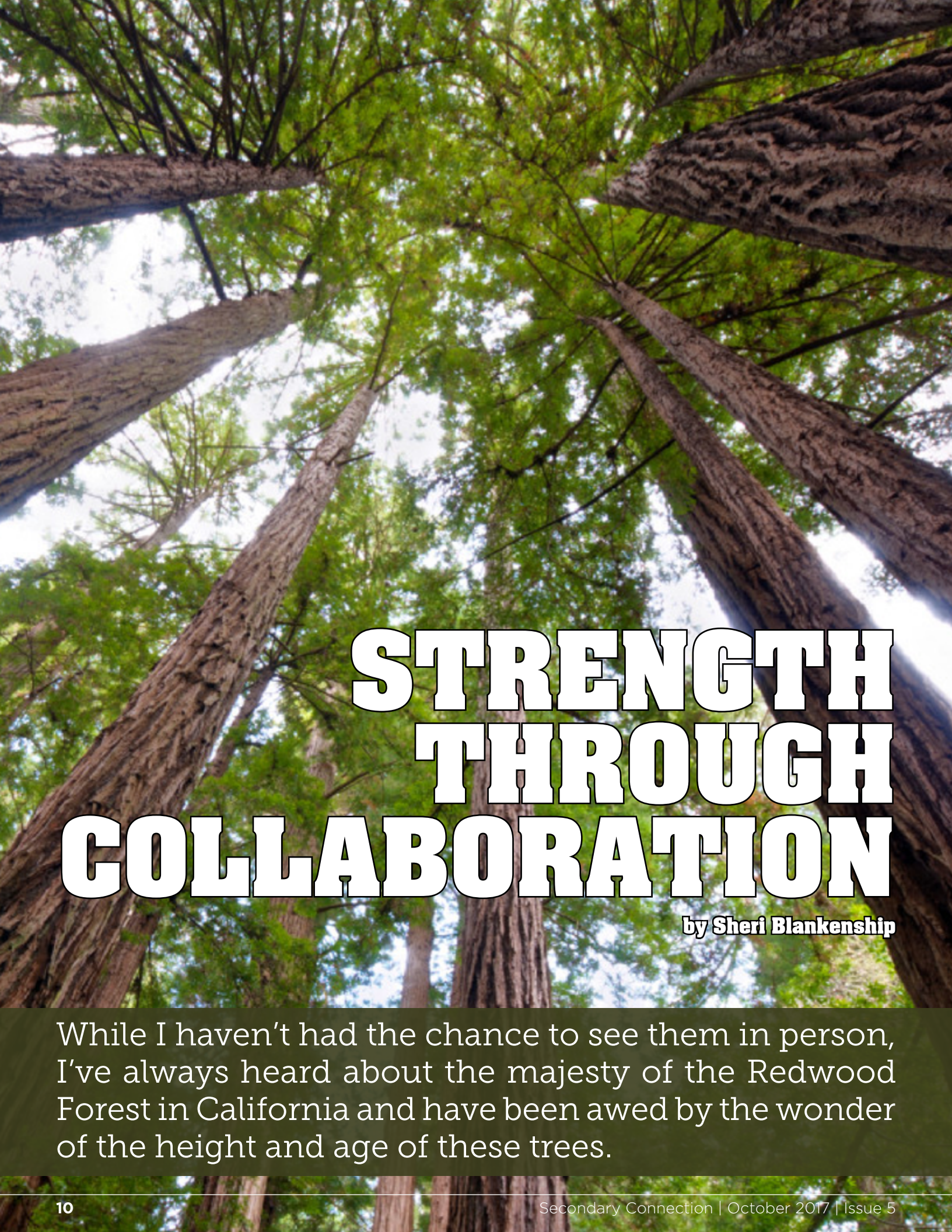
December 9, National ACT Testing Day

*SO, LET'S TALK!*

We now have definitive proof that kids who have taken the ACT more than once are at a distinct advantage over students who have never taken the ACT and wait to take the ACT as a junior. Statistically, our juniors who had never taken the ACT previously scored about 4 composite points lower than those who had taken the ACT multiple times.

So, our current 10th graders have all taken the PSAT as 9th graders. Based on what math class a 10th grader is in governs when is the best time to take the test. If a 10th grader is in mid stream of geometry or Algebra II, then we suggest the December test because the student can get a copy of his or her test back with their answers for an extra $20.00 more. This also gives them direct access to OpenEd to garner free ACT practice as they head into the spring semester of the sophomore year. Remember that an ACT score is needed for a student to take dual credit classes. Dual credit can put our students at a serious advantage over other students. It gives them a huge jump-start on their college adventure!

The ACT has released information stating that taking the ACT multiple times tends to lead toward a student attaining higher grades in college. Additionally, longitudinal studies have shown that retesters show motivation because they have been willing to give up multiple Saturdays. Additionally, multiple retesters have shown to be more likely to visit the professor after class or seek help either through asking questions in class or finding a remediation resource.



# STRENGTH THROUGH COLLABORATION

by Sheri Blankenship

While I haven't had the chance to see them in person, I've always heard about the majesty of the Redwood Forest in California and have been awed by the wonder of the height and age of these trees.

Part of the wonder comes from how they have survived the inevitable storms and challenges of nature. The amazing secret strength of the Redwoods lies in their root system. Instead of having a traditional tap root, these trees actually have a root system that grows outward, and when the root comes in contact with another Redwood tree, it intertwines with the roots of the other trees, creating an extremely strong bond. In fact, the trees' very survival depends on the combined support of one another. Their power, then, comes in their interconnectedness!

I wonder, then, what lessons we as educators can learn from this miracle of nature. Research in education clearly shows that we as educators are stronger when we are not isolated in our classroom practice as this creates a vacuum and can unintentionally skew our perspective. Collaboration provides us the opportunity to create stronger assignments and more intentional, aligned instruction for students and provides us a natural feedback and accountability partner or team. Many of us have found colleagues in our own schools who become this kind of collaborator and understand the value and the power in these collegial relationships. I wonder, though, just how much stronger we could be for EVERY student in our DISTRICT if we used the intertwining roots of collaborative teams by discipline and by course to harness our collective strength!

Here are some tools we are using to help us bring all of our zones in the district together for this kind of thinking and growing.

Zoom: Many of you have experienced "Zooming" already, but this is a videoconferencing tool that allows people with a shared meeting link to see each other virtually and to share their computer screen with one another so that all participants can be literally on the same page during the session. There is also a recording option, allowing you to preserve your collaboration session and to be able to easily share it with others if they are unable to join you in the live version. There are already upcoming plans in place to reconvene by Zoom for those of us who have attended Anchor Module Professional Development sessions, but this is a tool I would love to help you use if there are other ways you would like to be collaborating with others who teach the same discipline and/or course as you across our district! Email me (sblankenship@rcsd.ms) if you would like to discuss how you can use Zoom.

Task Workshopping Open Call: As a part of our Anchor Module development by discipline and course, we are excited about workshopping the tasks for these anchor literacy modules over the next few months in an effort to work together to guarantee to each other as colleagues and to our students quality, standards-embedded assignments that allow students the opportunity to grow as readers, writers, and thinkers in our respective disciplines. Be on the lookout for Open Call information for the course you teach, and please join us for these Zoom sessions if you can! Check out how LDC currently does this on a national level a couple of times a month by clicking here to watch one of their recorded Zoom sessions. (Their sessions run for approximately 1 hour each time, so you have access to the entire session through the link provided above; however, Nicole Renner, the LDC facilitator for this particular session, actually starts the collaboration around workshopping the task itself around 7 minutes, 45 seconds into the video.)

It is inevitable that education will continue to face storms and challenges not unlike the intensity the Redwood tree has endured for centuries. True, ongoing collaboration to grow as educators and to work smarter together, though, will provide us with a stronger, more connected root system as a school district that will benefit ALL of our students.

# RANKIN COUNTY SCHOOL DISTRICT

## GREAT TO BEST