Fall 2017
Volume 1, Issue 1

Making Connections

Professional Journal of the Math-Science Special Interest Council

Contents

"Making Connections" is the voice of the MSSIC membership. We welcome articles and Letters to the Editor and will endeavor to publish as many of these as space permits especially those that help us to "see farther". The views and opinions expressed by the authors do not necessarily reflect those of MSSIC or its executive.

Message from the Editor

Welcome to the inaugural edition of ***Making Connections***! We hope you enjoy this edition and the perspectives of our contributors.

This is our first foray into a more traditional means of sharing ideas, observations and practices related to the teaching of Math and Science. We hope this journal will form the third side of our strategy to keep our members informed and, more importantly, connected to what's happening in math and science education, classroom practices and perspectives, and more!

Unlike our Facebook page and Twitter feeds, ***Making Connections*** will be written for and by MSSIC members. If there is a topic you would like to know more about, let us know. If you are interested in contributing, we want to hear from you. The number of issues each year will be contributor-dependent; the more contributors, the more issues.

Your feedback is always welcome. Contact cwhite@letstalkscienc.ca with your thoughts and ideas.

Meet the MSSIC Executive

Need something done? Ask a busy person! You are no doubt familiar with this axiom. We all know someone who seems to be involved in everything; and more importantly, willing to take on additional duties. However, with the increasing pace of our work and personal lives, this practice may become a thing of the past. Formal and informal organizations all over are experiencing this effect. Fewer people are stepping up to take on volunteer roles.

That is why it is such a great feeling when a group of people come together, to give freely of their time, for the benefit of others. And this is the case with the teachers who have formed the second executive of the re-formed Math-Science Special Interest Council (MSSIC).

Executive
President: Yvonne Dawe – Centre for Distance Learning and Innovation
Vice-President (intermediate/secondary): Nicole Ash – St. Kevin's High School
Vice-President (primary/elementary): Stephanie Collins – Morris Academy
Treasurer: Karen Yetman – NLESD Program Specialist
Secretary: Nancy Ryan – St. Matthew's School
Communications Officer: Lori Powell - Morris Academy

Board Members
Avalon East: Linda Stacey– Holy Heart High
Avalon West: Aprille Whelan – Waterford Valley High
Central: Tammy Manor – Holy Trinity Elementary
Western: Sara Matchim – Waterford Valley High
Northern Peninsula: Joe Brown – Mary Simms All Grade
Labrador: Vacant
Student: Vacant

Board Associates
Saiqa Azam – MUN Faculty of Education
Craig White – Let's Talk Science

Thanks to everyone for taking on this important leadership role!

Science is something you do

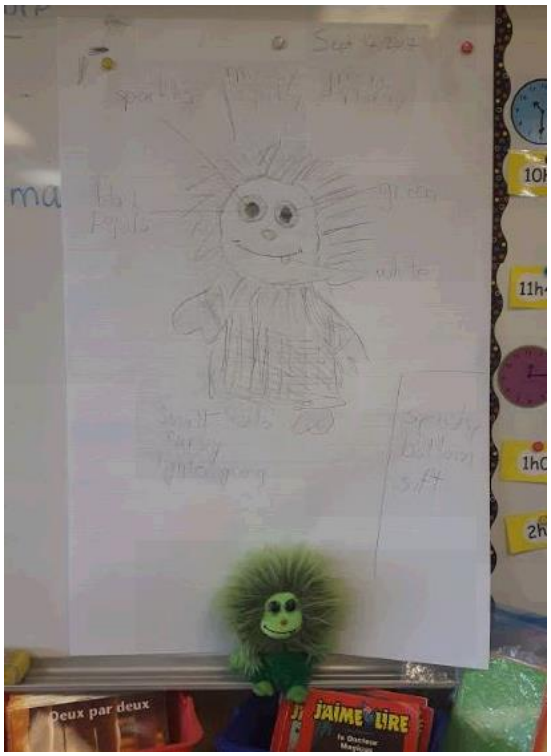
Tammy Manor

… it's as simple as reintroducing the 5 senses. … I remind the students that they are scientists… and that scientists ask important questions based on their observations.

I was once told that science is something you do. It is not a passive transmission of information from the teacher to the student, but a series of collaborative learning experiences between the students and the teacher alike. Open-ended, inquiry-based problems afford students the opportunity to engage in authentic hands-on learning, in environments that value risk-taking and the power of failure. By implementing scientific skills, such as asking questions, making observations, devising procedures, using tools, and drawing conclusions, students become empowered in learning about their world.

From the moment they're born, children observe the world using all of their senses. Hearing, sight, touch, smell, and taste all work together to help build understanding. Unfortunately, as children grow, their observations often become limited to a passing glance or a quick wrinkle of the nose. Our society is more fast paced than ever, and there seems to be little time to stop and really observe all that surrounds us.

Yet, observation is a key component of any science curriculum. Without it, without having the opportunity to genuinely connect with what they study, students are robbed of the opportunity to direct their own learning. But how do we slow down a generation of students that have grown up in an "instant" world? How do we get the natural sense of wonder back? How do we get them to truly observe their environments?



Students make their observations of class mascot Mélo

For me, it's as simple as reintroducing the 5 senses. Each September, before we crack the spines of our science resources, I remind the students that they are scientists... and that scientists ask important questions based on their observations. By reviewing how we can observe objects in and around our environment, using appropriate senses, the students are reminded that we don't just observe with our eyes.

Working together as a whole class, I help the students observe an object from the classroom. This year, we focused on our class mascot, Mélo, recording our observations using sketches and labels. Not surprisingly, the students were quick to point out what they could see. We talked about colour and size, shape and form. The students also suggested texture words as they observed how Mélo felt when we touched him.

As we continued to observe Mélo more details came into focus. Mélo smelled new and his bottom made a scrunchy noise if the students squeezed it. Of course, as we talked and jotted down our observations, the questions came pouring in. I wonder why he's fuzzy?

Continued on page 3… "I wonder…"

I wonder... continued from page 2

I wonder why his bottom makes that noise? I wonder why he's green?

I then encouraged the students to choose an interesting object from the classroom to observe. It was amazing to see just how detailed some of the observations were after such a small amount of instruction. I knew that they were ready to begin the first unit of grade 3, Exploring Soils. By the third week of school, the students had collected soil samples from around the school to be used in their explorations and observations. Using various tools (e.g., magnifying glasses, pencils), the students observed the collected samples, noting how different each was. They were able to identify soil components, colour, texture, and moisture level simply by taking the time to make detailed observations. The questions that resulted from the students' observations now provide the framework for the rest of the unit.

Hands-on Minds-on in Action

Science is something you do. It isn't something to be taught, a succession of unending facts to be memorized and tested. Providing students with opportunities to be engaged in and to direct their own learning helps create lifelong learners.

Tammy Manor B.Ed.
la Troisième Année / Grade 3 EFI
École Élémentaire Holy Trinity /

MSSIC Membership

… professional conversations… building connectivity… local content… address professional development needs… help shape our learning community...

The Math-Science Special Interest Council (MSSIC) of the Newfoundland and Labrador Teachers' Association (NLTA) exists to foster professional growth and development of its membership in the areas of math and science teaching and learning.

MSSIC also advocates for the special interests of teachers of math and science. MSSIC works to form partnerships with like-minded partners in the educational enterprise for the welfare of its membership as well as the development of students in the areas of math and science education.

Membership in MSSIC is open to all NLTA members and others interested in supporting the teaching and learning of math and science in Newfoundland and Labrador. Membership categories are as follows:

- **Full Member**: a person who is currently a member of the NLTA. Membership fee included as NLTA member.
- **Associate Member**: a person who is Math and/or Science teacher or who is interested and involved in Math and/or Science education, and who is not an active member of NLTA. Membership fee $25/year.
- **Student Member**: a person who is enrolled in full-time post-secondary studies in Math and/or Science and/or Math and/or Science education. No charge.

If you would like more information about becoming a member of MSSIC, please email nancyryan@nlesd.ca.

Oodles and Oodles of Google

Stephen J Tizzard (@TeacherTizzard)

In December of 2016 I started exploring the World of Google Classroom. Actually, with the NLESD adopting G-Suite for Education that same year, I found myself exploring many new and exciting technology ideas with my students, both G-Suite related and otherwise.

I found that the Google Classroom model fit perfectly into the realm of reading and writing. I couldn't possibly count the endless ideas I had for creating activities for language arts, social studies, and other disciplines that lend themselves well to more traditional forms of analyzing text, answering questions, or creating something to represent your knowledge.

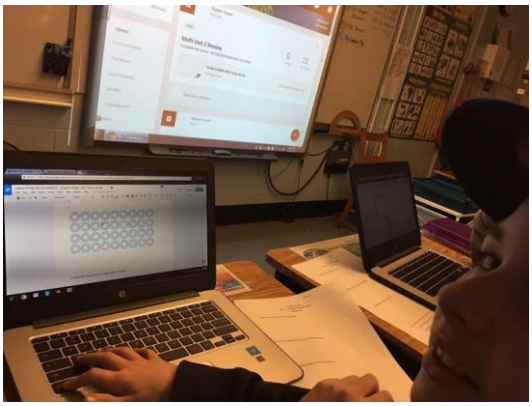
After several months of doing exactly those types of projects in Google Classroom, I wondered why only a few of my activities were within areas of math and science. Without trying to answer that question, I set to work on finding new ways to bring these new and exciting technology-based learning resources into math and science activities.

When designing technology-based learning for and with my students, I try to do it with the intent to "reimagine learning." This idea was made popular by Richard Culatta. The process of using technology to reimagine learning requires that the teacher examine the purpose of using technology and to ensure that use is to do entirely new things in education. I like to think this keeps me focused on using technology as a new form of learning and not just a way to save paper.

In other words, not using technology simply to digitize things we would normally do with paper and pencil.

This year especially, I have been collaborating with a grade 6 teacher at another school, Stacey Hopkins. Shout out to Stacey for her mutual love of collaboration and technology. ☺ We have been finding things online, creating, and sharing. It's been great.

Among other resources, most notably I have used Sphero SPRk+ Coding Robots to model fraction strips. I've used Google Forms for assessment and exit tickets. I use Google Drawings to digitally represent math manipulatives, and I have had students create their own math Kahoot! Quizzes.

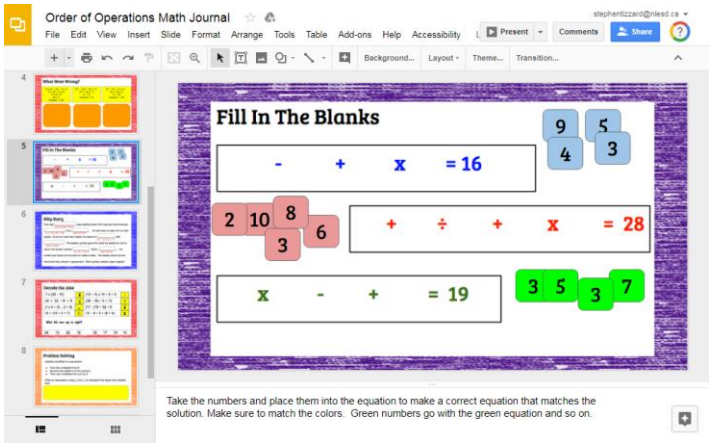


Below I will share examples of the types of new activities I have been exploring using the G-Suite app, Google Slides.

Continued page 5... "I have been using..."

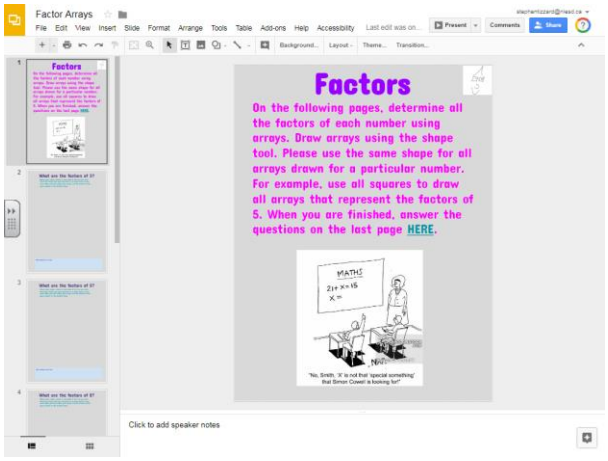
I have been using Google Slides a little differently this year. Traditionally, Google Slides is a presenting app used to enhance and demonstrate ideas during a presentation. Used in this way, Google Slides is indeed a valuable way for students to represent their knowledge and be assessed.

This year I have been using and creating "Interactive" Google Slides for math. In Google Classroom I post an assignment with a copy of a Google Slide for each student.



The interactive part involves the students clicking and dragging various parts within the slides to show knowledge of a certain concept. Some examples include, moving numbers into an equation to show the order of operations, placing a set of integers on a number line, or using the shape tool to draw factor arrays.

Last year I used Google Slides during the 2D geometry unit. Students had to use the cameras in the Chromebooks to take pictures of authentic 2D shapes. They then had to annotate those pictures in Google Slides to show what part of the picture was the 2D shape.



I have found Google Slides to be more engaging for my students when used in this way. A general model I try and adhere to is: Whole class instruction of new concept, Google Classroom/Google Slides Interactive activity, Google Form exit card.

The Google Slides activities and Google Forms are both great assessment tools; I also use them to inform my instruction. I feel I am only scratching the surface with G-Suite for Education learning possibilities in my classroom. I'm excited to see where this awesome resource will take me and my students next!

Stephen Tizzard has been teaching with the NLESD for 9 years and is a grade six teacher at St. John Bosco. He recently completed a Masters Degree in Education (Information Technology) and is interested in creating, exploring, and collaborating on new and exciting technology resources for teaching and learning, especially G-Suite for Education. He can be reached at stephentizzard@nlesd.ca, on Twitter @TeacherTizzard, and through his website, https://sites.google.com/nlesd.ca/mrtizzard.

Math-Science Special Interest Council

*The **Math-Science Special Interest Council** of NLTA is a professional learning community dedicated to fostering growth and development of its membership in the areas of math and science teaching and learning.*

We are Social!

Like us at:
https://www.facebook.com/MSSICnl/
Follow us at:
https://twitter.com/NLTA_MSSIC

MSSIC's New Logo

Did you notice our new logo? This was one of the things the first executive took on as part of the development of our by-laws and organizational structure. As our Council represents teachers from K-12, across two disciplines and four grade levels (primary, elementary, intermediate, high school), we wanted something simple that would indicate "math" and "science". It also had to be Facebook and Twitter friendly and to be recognizable when shrunk as it is here.

Thanks to NLTA graphic designer John Bishop for taking the ideas that President Yvonne Dawe came up with and giving our executive some graphics to work with. Special thanks to Yvonne for leading us through the debates over which font, which color, etc. as well as the final tweaking that resulted in the finished product you see here. While it doesn't represent every science or every level of math, we are proud of it and hope you will be too.

Standing on the Shoulders of Giants: A Call for Articles

Making Connections is the professional journal of MSSIC. This journal is, in effect, our collective voice; it is an opportunity for each of us to share our knowledge, expertise, and opinions.

When congratulated for his successes and insights into the workings of the natural world, Sir Isaac Newton is reported to have replied "if I have seen further than others, it is because I have stood on the shoulders of giants." While Newton was certainly being generous, he was also commenting on the fact that advancement in any discipline is an incremental process with one advance or understanding providing the foundation and impetus for subsequent advances and understandings.

So too it is for educators. Our understanding and subsequent success can be supported and encouraged by the experiences and insights gleaned by our colleagues. We all see a little further when we stand on the shoulders of the giants among us, as well as those who went before us.

We hope the perspectives of the authors in this issue have helped you "see a little further." We encourage you to share your vision with your colleagues. Please consider submitting an article for a future edition of ***Making Connections***.

While we will consider all submissions, articles submitted for publication should be no more than 1500 words in length and address topics/issues of concern and interest to Newfoundland and Labrador educators. We will publish previously published articles as long as the original publication allows this practice.

Notice of intent to provide an article for consideration should be made by email to cwhite@letstalkscience.ca.

We would also like to hear your thoughts on the various articles contained in each edition. Letters to the editor will also be considered for publication.

Math-Science Special Interest Council