

**PDIG Final Project Report**  
**Stem Bins**  
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Our cycle three teaching team created ready-made STEM bins filled with the materials needed to do a wide variety of projects. We strongly believe in the creative and problem solving strategies that the students practice while going through the steps of a STEM project. We believe these tasks will strengthen problem-solving skills across all subjects, as well as give them the opportunity to work without constant guidance and learn more through trial and error, and discovery. Our ready-made bins aim to reduce the amount of time it takes to organize these activities for our classes. Often when projects take too much time to prep, or we need to go out to the store to purchase necessary items, we put it off or wind up never getting to it. We were able to create a STEM closet full of materials and a wide assortment of projects for each grade. The projects cover different holidays or events during the year, as well as projects aligned with the QEP touching on Earth, Physical and Life sciences.

We noticed that we were all doing STEM projects in our classes, buying our own materials, but not collaborating or sharing. Sometimes a teacher will start to do a STEM project and realize the group has already done that one the previous year. This sharing and tracking allows us to communicate the ones we've done and to build on them each year, as well as cover a wider set of skills and themes. We decided that creating these bins would not only encourage us to do more hands-on science projects but also encourage us to work as a cycle to create a standard that will help students transition comfortably from one grade to the next. Our hope is that their ability to problem solve will continue to evolve as the challenges become more complex.

Our first couple of days working together was spent coming up with a system. We needed to come up with a varied bank of projects that were linked to the QEP, that were grade appropriate, and involved simple, easy to find materials. We decided to create a Google Team Drive folder to organize the projects in a way that was accessible to all of us, as well as having a binder with a printed version of each project to leave with the bins. We've been keeping notes on the STEM challenges we've completed. We might note a change in materials that worked better, or an amount of time that was insufficient. We leave it as a sticky note on the project itself so another teacher can decide whether to change the way they take-on the project in their own class.

The next challenge that we had was finding a place to store our bins that would be accessible to the three of us. We decided to use a closet that was full of stored items. It took us a few days to clean, re-organize and finally get a space that was big enough to use.

We were then faced with deciding if we were going to make an individual bin for each project or have our materials organized together in bulk. Organizing in bulk ended up working more efficiently in our storage space. We made a list of all the materials required for the projects we selected, and then went out to buy them all. Most of them were purchased at Dollarama. A list of materials was also included in our STEM closet and we write down any materials that are low, or materials we'd like to add the next time we replenish our stock.

We are overall really pleased with how our STEM closet turned out. It's already being put to good use. Everything has its own place and is set up in a way that makes it easy to add more projects in the future. It's easy to keep it cleaned and organized, easy to leave messages and feedback on projects we've done or materials we need. We feel that by having these materials and projects already set up and ready to go, we will be more motivated to do more hands-on challenges and projects in our classrooms. This was an important project for us, as we feel strongly that by participating in STEM challenges, students learn to solve problems, work with time constraints, work hands-on, and work collaboratively as well as take on different roles within their groups. These critical thinking, problem solving and collaborative skills are a very important part of becoming a successful learner. It also helps us teachers save time, money, and work together as a cycle team.

Our project has already been shared amongst the staff at our school. Many of the teachers, from cycle 1 and 2, have visited our STEM closet and expressed a desire to do something similar. This makes us cycle 3 science teachers pretty excited because teachers reluctant to experiment with hands on activities can see that it can be manageable. If students have more experience with the procedures of STEM before they arrive in cycle 3, it only makes our jobs easier. Unfortunately there is a lack of space in the school to have storage in different areas of the school. It could however, be done on a smaller scale in the classroom and still be shared within the cycle. The other problem can be finding the funding to buy all the supplies. We used student teacher money and excess class size monies to buy ours, but that is not available to everyone. There are alternatives like fundraisers, grants, asking for donations from families, etc. Many of the materials we used were from the dollar store. We are very open to sharing with other schools if there is an interest. We never meet as science teachers in the board to share

materials, lessons or ideas, but would be interested in doing so. We could share with the school board's science ped consultant, and that could be shared via their web page. We would like to have at least a year of using the system before we start giving advice, that way we can see what worked, what didn't, and improve the way we use STEM in our classrooms.