

TEMPLATE: Contextualized Learning Activities (CLAs)

For the “other required credits” in the bundle of credits, students in a Specialist High Skills Major program must complete learning activities that are contextualized to the knowledge and skills relevant to the economic sector of the SHSM. Contextualized learning activities (CLAs) address curriculum expectations in these courses.

This template must be used to describe the CLAs. The completed form must be submitted to the Ministry of Education for approval.

Submit all material in Microsoft Word.

Contact Information	
Board	Waterloo Catholic District School board
Development date	August 2010
Contact person	Richard Sloos; Don Cleverley
Position	CommTech Teacher; Math Teacher
Phone (School)	(519) 741-1990 (Richard); (519) 622-1290 (Don)
Fax (School)	(519) 741-5096; (519) 622-1292
E-mail	richard.sloos@wcdsb.ca ; don.cleverley@wcdsb.ca

Specialist High Skills Major	<i>Information Communication</i>
Course code and course title	<i>MCF3MI Grade 11 Functions + Applications</i>
Name of contextualized learning activity/activities	<i>Student-run media presentation of a real-world math concept from the MCF3MI course.</i>
Brief description of contextualized learning activity/activities	<i>The SHSM Information Communication student will take a concept/real-world problem from the MCF3MI course and produce a presentation (possibly for the class and/or published in, example, schooltube.com), in video or PowerPoint format. An alternative activity is also included.</i>
Duration	<i>6-9 hours</i>

Overall expectations	<p><i>(Identify the overall expectation(s) of the Ontario curriculum to be assessed or evaluated through the activity(ies). Include the strand and expectation code *)</i></p> <p>A 3. solve problems involving quadratic functions, including problems arising from real-world applications;</p> <p>B 2. identify and represent exponential functions, and solve problems involving exponential functions, including problems arising from real-world applications;</p> <p>C 3. identify and represent sine functions, and solve problems involving sine functions, including problems arising from real-world applications</p>
Specific expectations	<p><i>(Identify the specific expectations related to the above overall expectations that will be addressed in the instructional and assessment strategies. Include relevant strand titles. No codes are required)</i></p> <p>A 1.1 pose problems involving quadratic relations arising from real-world applications;</p> <p>A 3.1 collect data that can be modelled as a quadratic function, through investigation with and without technology, from primary sources, using a variety of tools;</p> <p>A 3.2 determine, through investigation using a variety of strategies (e.g., applying properties of quadratic functions such as the x-intercepts and the vertex), the equation of the quadratic function that best models a suitable data set graphed on a scatter plot, and compare this equation to the equation of a curve of best fit generated with technology (e.g., graphing software, graphing calculator);</p> <p>B 2.1 collect data that can be modelled as an exponential function, through investigation with and without technology, from primary sources, using a variety of tools;</p> <p>C 3.1 collect data that can be modelled as a sine function (e.g., voltage in an AC circuit, sound waves), through investigation with and without technology, from primary sources, using a variety of tools.</p>
Catholic graduate expectations	<p>CGE4f -applies effective communication, decision-making, problem-solving, time and resource management skills;</p> <p>CGE3c -thinks reflectively and creatively to evaluate situations and solve problems;</p> <p>CGE2b -reads, understands and uses written materials effectively;</p> <p>CGE5g -achieves excellence, originality, and integrity in one's own work and supports these qualities in the work of others;</p>
Essential Skills and work habits	<p><i>All of the following skills are or are possibly incorporated into this CLA:</i></p> <ul style="list-style-type: none"> • Reading Text • Writing • Document Use • Computer Use • Oral Communication • Numeracy <ul style="list-style-type: none"> ○ <u>Money Math:</u> ○ <u>Scheduling or Budgeting and Accounting:</u> ○ <u>Measurement and Calculation:</u> ○ <u>Data Analysis:</u> ○ <u>Numerical Estimation:</u> • Thinking Skills <ul style="list-style-type: none"> ○ <u>Job Task Planning and Organizing</u> ○ <u>Decision Making</u> ○ <u>Problem Solving .</u> ○ <u>Finding Information</u> • Working Safely • Teamwork • Reliability • Working Independently • Initiative • Self-advocacy • Customer Service • Entrepreneurship

Instructional/Assessment Strategies

Teacher's notes

1. This CLA is designed for a student who is registered in the Information + Communication [I/C] SHSM and who is required to do a component of the MCF3MI course in their Specialty. This component is satisfied by assigning one of the suggested examples included with this CLA (or any other relevant, real-world concept that the teacher considers appropriate for the course) and completing a presentation. It is presupposed that the student has an acquaintance with their Specialty area from taking a previous or concurrent Communication Technology course (ex. TGJ2O and/or TGJ3M). Liaison of the Math teacher with the CommTech teacher(s) is suggested before initiating this CLA. It is not presupposed that the Math teacher has any particular skills in the CommTech area.

Note: The assigning of this activity should not create an excessive time, photocopying, or marking burden for the teacher. The end product should be reasonably professional, entertaining, and should include original material only - in which the name(s) of the student(s) and/or they themselves are included in the presentation. It should be a minimum length (see handout), and show that the student has clearly understood + explained the Math concept assigned. At the discretion of the teacher, this activity may be

a) Done as an individual project, or as a partnership if there is more than one I/C SHSM student in the class (perhaps assigning more than one of the examples);

b) A presentation to the class, or just submitted for assessment (the project could be submitted on USB drive or DVD, or by email, or via any other predetermined media).

If the MCF3MI teacher has an I/C student in their class, it is suggested that they make the student aware of the requirement for this activity early in the course, but not require its submission until later (possibly after the Math concept assigned is actually covered, or as a Final Summative Project). This will give the student time to plan out the activity, connect with the CommTech teacher, and gather resources. The total time taken for the activity should be between 6→9 hours.

2. As an introduction to this CLA (for both the teacher and student) view the PowerPoint presentation, which includes an example of the type of project that is required. Hopefully, the student's final work will be of this quality, or even an improvement! Please note that a teacher may add to the requirements (such as discussion of domain + range, showing "completing the square", etc.) or reduce the requirements, to tailor this CLA to the abilities and of the student, and the time allotted.

3. At the same time, give out the Handout included (BLM #!).

4. Follow this timeline:

Timeline [this is very flexible, so please adapt to the exigencies of the individual course]:

Day 1: Teacher meets with student(s), confirms that they are an I/C Specialist, and assigns the activity – a handout is provided. It is suggested that the student view the PowerPoint presentation that is provided with the CLA at this point.

Day 2: This is the date that is assigned for submission of the student's initial proposal. At this point the student will have decided on a topic, put together a preliminary plan, + met with a CommTech teacher.

Day 3: The initial video (examples #1, 2, 3a) or animation (ex. 1a) or video business budget analysis (ex. #3b) is completed by this date.

Day 4: The calculations required for the activity are complete.

Day 5: The PowerPoint (or just video) presentation is completed and submitted/presented to class.

5. Assess the student's work with the rubric provided.

Context

Continuing to develop expertise in aspects of the information technology industry, through the use of video, PowerPoint, and mixed-media formats. An alternative activity is also included, which emphasizes the business rather than media aspects of starting a CommTech company.

Demonstrating proficiency with a major expectation of the MCF3MI course (one of quadratic, trigonometric, or exponential functions).

Strategies

- *Introduce the activity by viewing the PowerPoint presentation that will identify the purpose for the activity, and giving out BLM#1*
- *Review prerequisite skills and concepts, namely the various forms of the quadratic or trig or exponential function*
- *Provide familiar contexts as a starting point e.g. previous notes given in class*
- *Review work accomplished at the indicated stages of the activity and use it to gather formative assessment data and give timely feedback to students*
- *Provide necessary supports by way of handouts and coaching for students experiencing difficulty (with the support of the school's CommTech teacher(s))*
- *Regular student conferencing will help ensure students are on-track and moving successfully through the activity*
- *An assessment rubric is provided for the summative presentation at the end of the CLA.*
- *Accommodations will be made to fit students' needs regarding readiness and ability. Alternate ways of demonstrating the expectations could be made available as options for students to use.*

Assessment and Evaluation of Student Achievement

Strategies/Tasks	Purpose
Initial proposal is submitted	A checkpoint to ensure progress. Feedback is given. This should be in liaison with a CommTech teacher.
Initial video or animation or video business budget analysis is submitted.	A checkpoint to ensure progress. Feedback is given. This should be in liaison with a CommTech teacher.
Completion of the PowerPoint (or video) presentation.	To demonstrate facility with a major Math concept and with media tools. It is suggested that this will be done as a Final Summative Assessment, so would form a component of the final 30%.
Assessment tools <i>A checklist and rubric is included with BLM #1, for assessment.</i>	

Additional Notes/Comments/Explanations**Final Notes:**

1. Wherever possible, the student is encouraged to inject some humour into the presentation (as was attempted with the animation included in this CLA).
2. The activities discussed in this CLA for the Information + Communication SHSM are easily transposable to any other Math course in which the I/C student is registered.
3. As an incentive for the student, it is suggested that their presentation be published to an appropriate website (as an example, a class or school site can be set up at www.schooltube.com – perhaps you have one already?! – view: http://static.schooltube.com/files/docs/help/Channel_Guide_612010.pdf [print format] or <http://www.schooltube.com/video/1f03bf7b51534cde91d8/SchoolTube-for-Teachers> [video format] or <http://www.schooltube.com/video/bcc2a80266ac4457ad62/How-to-Customize-your-SchoolTube-Channel>)
4. For a good, brief review of PowerPoint presentations: see <http://www.digitizd.com/2009/05/11/the-10-commandments-of-powerpoint/>
5. It is hoped that by assigning activities such as this CLA, the Math teacher will gradually compile a portfolio of video/PowerPoint presentations that will be useable in the future for their class or school

Resources

<p>Authentic workplace materials <i>Have the student(s) view the included PowerPoint presentation (file [redacted]). If they wish to try the animation component, they may also view the “How-To” presentation included with this CLA under the file [redacted]. Note that Adobe Photoshop will be needed to see this (this should be available within the school).</i></p>
<p>Human resources <i>Liaison with a school Communication Technology teacher is recommended. Speakers from related business-education partnerships are also excellent resources, if available.</i></p>
<p>Print <i>As supplied in the CLA – BLM #1.</i></p>
<p>Video <i>N/A</i></p>
<p>Software <i>MS PowerPoint; Adobe Photoshop was used for the supplied animation (a separate file shows the steps in making the animation), but other software is fine (inc. PPT itself); video editing software may be required as well. All Math equations were typed in MS Word using Equation Editor (under “Insert”), then the fonts were enlarged, and then the ‘boxes’ were copied + pasted into PPT.</i></p>
<p>Websites <i>As an incentive for the student, it is suggested that their presentation be published to an appropriate website (as an example, a class or school site can be set up at www.schooltube – view: http://static.schooltube.com/files/docs/help/Channel_Guide_612010.pdf [print format] or http://www.schooltube.com/video/1f03bf7b51534cde91d8/SchoolTube-for-Teachers [video format] or http://www.schooltube.com/video/bcc2a80266ac4457ad62/How-to-Customize-your-SchoolTube-Channel) For a good, brief review of PowerPoint presentations: see http://www.digitizd.com/2009/05/11/the-10-commandments-of-powerpoint/ For a review of the SHSM program, see: [redacted] (Richard – this is link in our PPT) or: www.highskills.ca</i></p>

Accommodations

This CLA is designed to be an individualized Final Summative Project (although it could be completed at any point after the concept(s) have been covered in class). Since it is individualized, accommodations can be made through the difficulty of the concept assigned, the speed with which the project is completed, and the length of the final presentation.

List of Attachments

1. Teacher Notes/Info Sheet (which includes the suggested example)
2. BLM #1 (with checklist + rubric)
3. PowerPoint Contextualized Learning Activity demonstration presentation
4. Photoshop “How-To” guide for making animations
5. BLM #2 (only for those who choose the option of a video business budget analysis – example #3b); this handout would be better to be given electronically to allow student to adapt it to their needs
6. BLM #2 Sample Solutions