



Using Technology to Administer Provincial Assessments

Examination Administration, Alberta Education

Using Technology to Administer Provincial Assessments

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Using Technology to Administer Provincial Assessments

Acknowledgements

In response to feedback from school authorities, Alberta Education's Exam Administration Branch and Technology Leadership Branch co-hosted a focus group on March 2, 2016, to discuss alternative approaches for administering the Part A Written Response portion of Provincial Achievement Tests and Diploma Exams digitally in Chromebook environments. In attendance were representatives from Chinook's Edge, Wildrose, Red Deer Public, Edmonton Public, Calgary Catholic and Buffalo Trail. These school authorities were instrumental in developing an example of a clear process that Alberta school authorities can use to ensure that students can securely use Chromebooks to write both Provincial Achievement Tests and Diploma Exams.

Alberta Education would like to express its appreciation to Myles Doupe from Chinook's Edge School Division, who stepped forward to find a solution to an outstanding issue in the process that was developed. Myles wrote an extension to Chrome to resolve the issue.

Alberta Education would like to thank the Jurisdictional Technology Contacts and each of the school authorities that participated in this collaborative effort. We will continue to explore effective ways to use technology to write provincial assessments and look forward to further opportunities to work together to best meet the needs of our students. This document will continue to evolve over time and additional examples will be added as appropriate.

Overview

Alberta Education is committed to supporting school authorities to administer provincial assessments using technology so students have every opportunity to succeed. Currently, Provincial Achievement Tests and diploma exams can be administered using technology. The purpose of this document is to provide examples that can be used to assist schools and school authorities with IT decisions given their unique local environments (i.e. computing platform, type and number of devices, exam administration requirements, etc.).

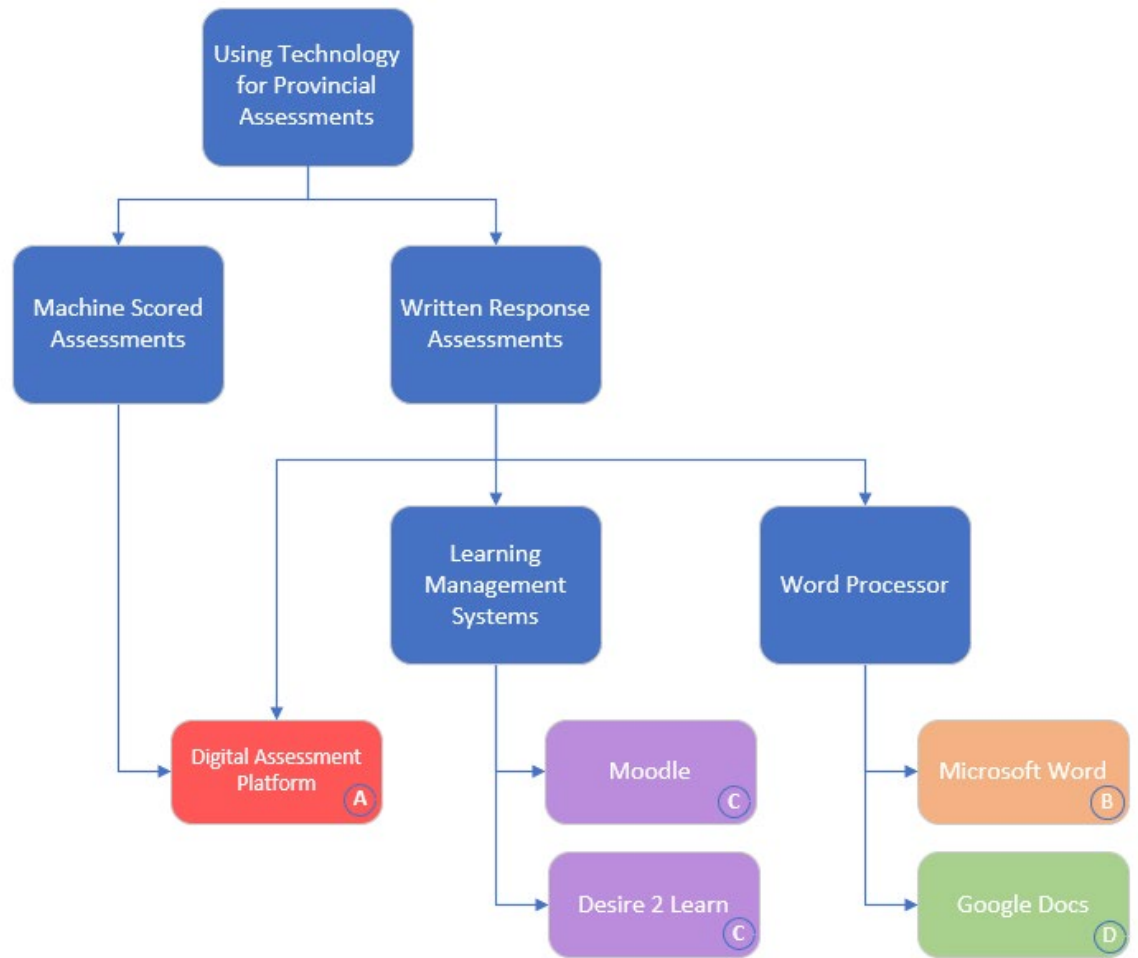
It should be noted that, for examples presented in this document, exam security is achieved through a combination of various technical measures as well as vigilant proctoring. While most technical options currently make it possible to adhere to provincial exam rules and directives, it cannot be assumed that network configurations and account permissions can eliminate the need for human supervision. It is important to keep in mind that for pencil and paper exams, direct student supervision is still the primary security measure. For that reason, in the absence of technical measures, vigilant proctoring in and of itself is still an acceptable alternative.

General Guidelines

Any solution that would enable students to use technology for written response provincial assessments must incorporate these functions.

- Students can respond to up to 3 written response questions.
- Students can access all permitted word processing tools including: a text editor which supports formatting, including either rich text or html editors; spell check in Canadian English and French.
- Functions that are not permitted, such as autocorrect, predictive word search, and translation must be disabled.
- In the event of a device or power failure, student responses must be saved in a way that is recoverable by exam supervisors. However, students cannot be permitted to save their responses to locations that can be accessed after the exam administration.
- Students cannot use functionality that would contravene exam administration rules, such as Internet access, sharing documents, communicating with others, online queries, and accessing previously saved work.
- At any time during the exam administration, either the student or supervisor can print student responses.

Options for Using Technology to Administer Provincial Assessments



Legend

- A** Can be implemented on PC's, Macs or school owned Chromebooks
- B** Can only be implemented on PCs and Macs
- C** Can be implemented on PC's, Macs or school owned Chromebooks
- D** Can be implemented on Chrome OS devices but not on PCs, Macs or student owned devices

*NEW Alberta Education Digital Assessment Platform

Quest A+ is going to be replaced by a new digital assessment platform. For this school year, it will be available for practice written response, PATs and humanities Part A diploma exams. Unlike other solutions presented in this document, which apply only to administering Part A Written Response assessments, the digital assessment platform serves multiple purposes. In addition to word processing, it is also used for machine-scored PATs, Diploma Exam perusals and other supporting processes such as practice tests and field testing of PATs and Diploma Exams.

This platform enables secure online exam administration on both student and school-owned devices. Once a secure exam has begun, its associated Safe Exam Browser does not permit students to exit the test environment. Chrome OS devices can be securely supported through configurations made in the Google Admin Console.

This option also provides speech-to-text and text-to-speech accommodations.

This is the recommended option for Part A exams as it follows all exam administration rules.

Microsoft Word

Microsoft Word is a widely used tool to administer written response provincial assessments. Prior to the exam administration, the functionality of PC or Mac devices are configured to comply with exam administration rules and directives. After the administration of the provincial assessment, school authority personnel are expected to delete all student responses from local servers or drives. However, the new Microsoft Word 365 contains functionality that cannot be turned off and contravenes exam administration rules.

Google Docs

Chrome OS devices are widely used in many schools. When properly configured, school-owned Chrome OS devices and Google Docs can be used by students for Part A Written Response PATs and Diploma Exams.

Since Google Docs is developed by Google, modifications to the product could be made at any time. Please ensure current Google doc features do not contravene exam administration rules.

For more information on how to configure Chrome OS devices with Google Docs to administer Part A Written Response PATs and Diploma Exams, please see Appendix.

Learning Management Systems

Learning Management Systems (LMS) like Moodle and Desire2Learn often have a built-in ability to administer Part A Written Response assessments. An LMS can then be configured to administer these assessments securely on Chrome OS devices, PCs and Macs.

Securing Chrome OS devices on an LMS

An LMS can be secured on Chrome OS devices using Managed Guest Sessions or kiosk apps. A kiosk app for Moodle can be made using the [document provided online](#).

Securing PCs and Macs on an LMS

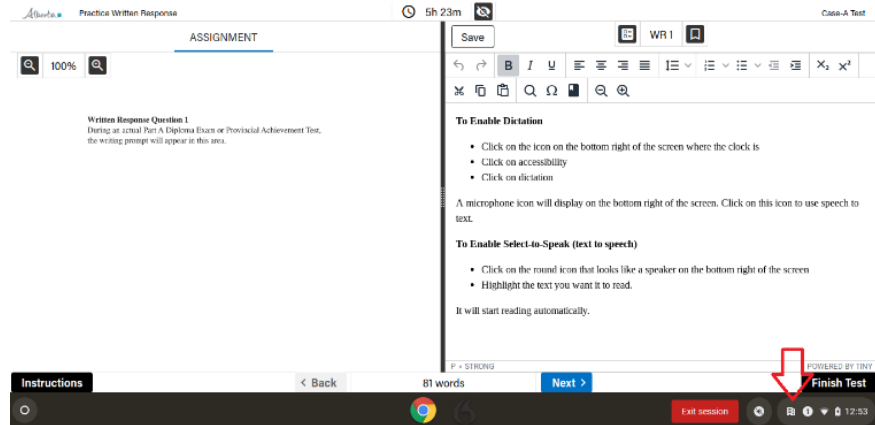
An LMS can be secured on PCs and Macs through a locked browser. Several third party software providers can provide locked browsers including [Respondus](#) and [Proctorio](#). [Safe Exam Browser](#) is a free locked browser provider configurable for any digital exam.

Options for Accommodations

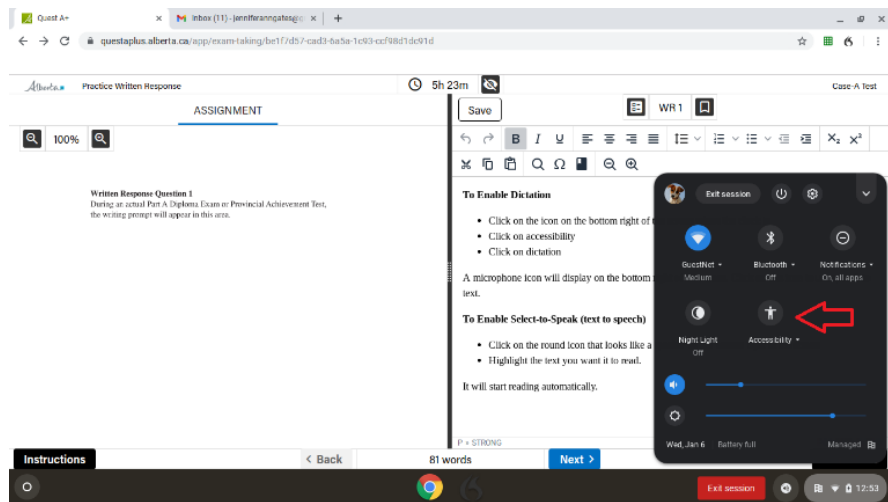
Chrome Dictation and Select-to-Speak

To Enable Dictation

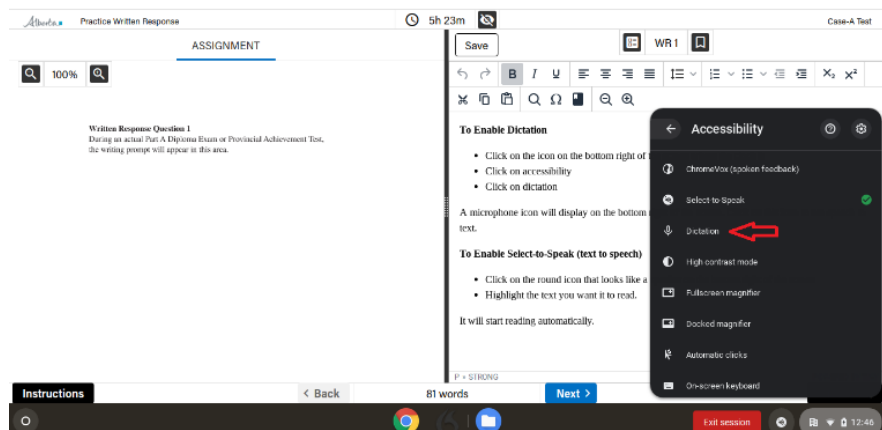
- Click on the icon on the bottom right of the screen where the clock is, and a menu will pop up.



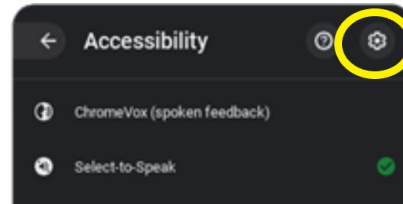
- Click on Accessibility



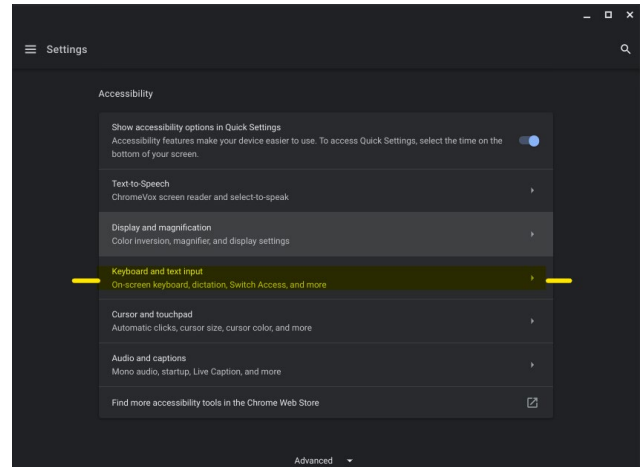
- Click on dictation



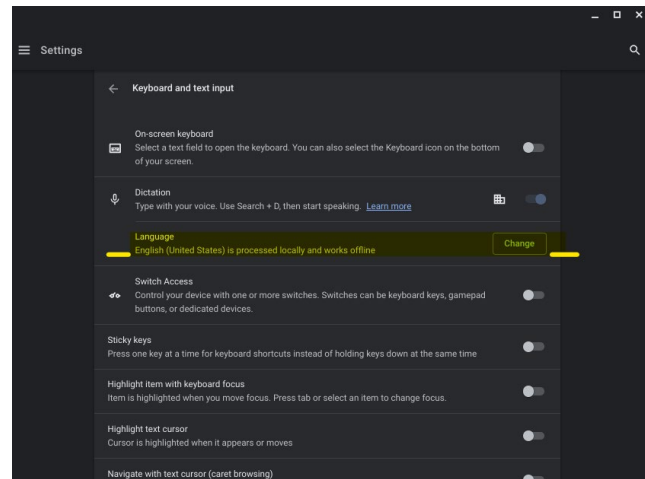
- To change the language of the dictation to French, click on the settings icon.



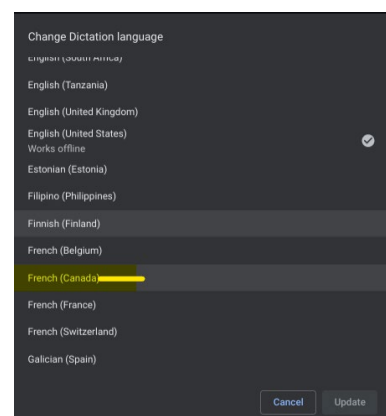
- In the accessibility settings, select **Keyboard and test input**.



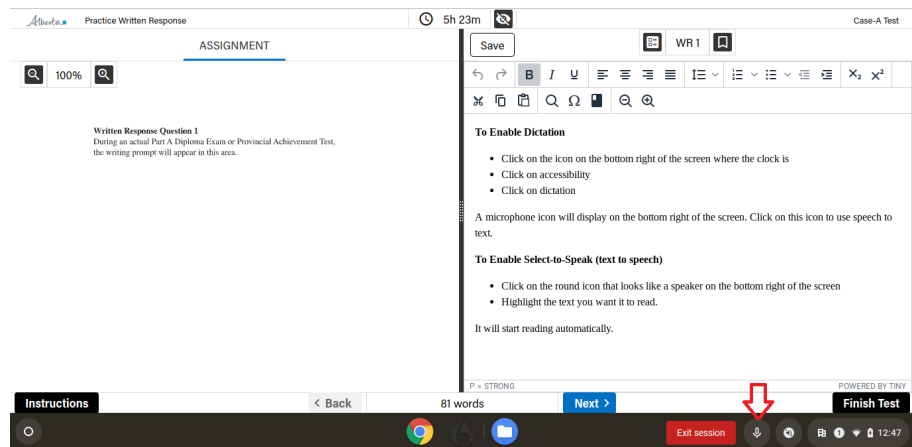
- In Keyboard and test input, under **Languages**, click on **Change**.



- Select the **French (Canada)**, click **Update**, and then **Continue**.

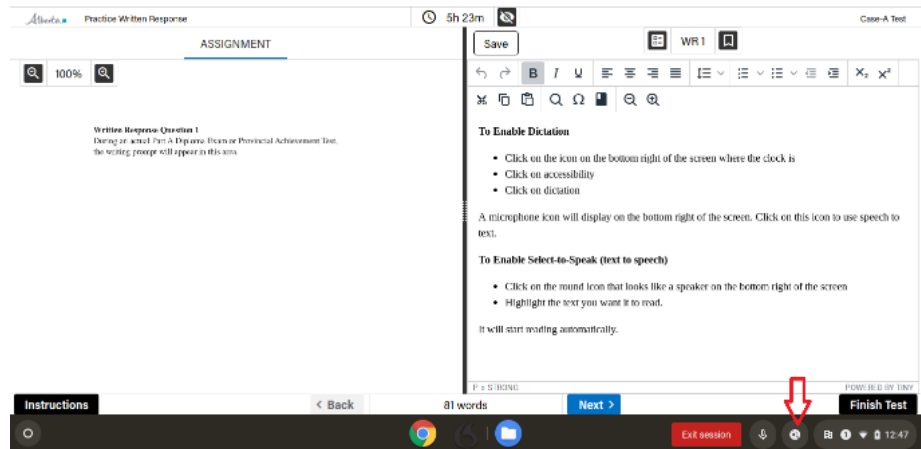


- A microphone icon will display on the bottom right
- Click on the icon and speak to produce text.

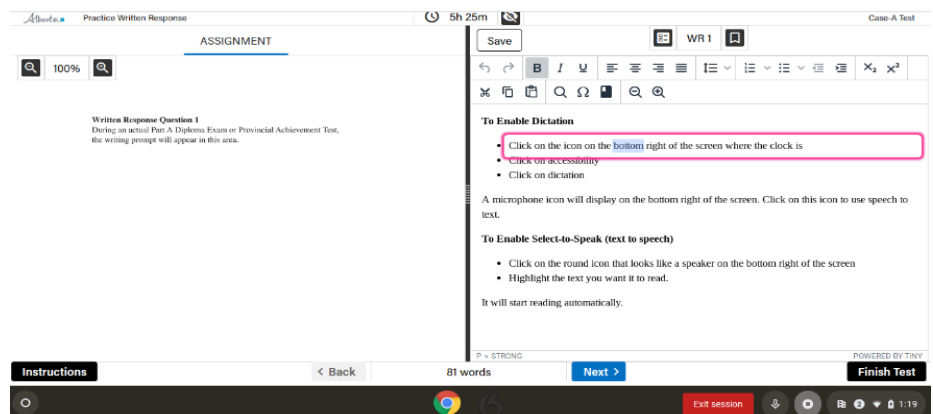


To Enable Select-to-Speak

- Click on the round icon that looks like a speaker on the bottom right of the screen

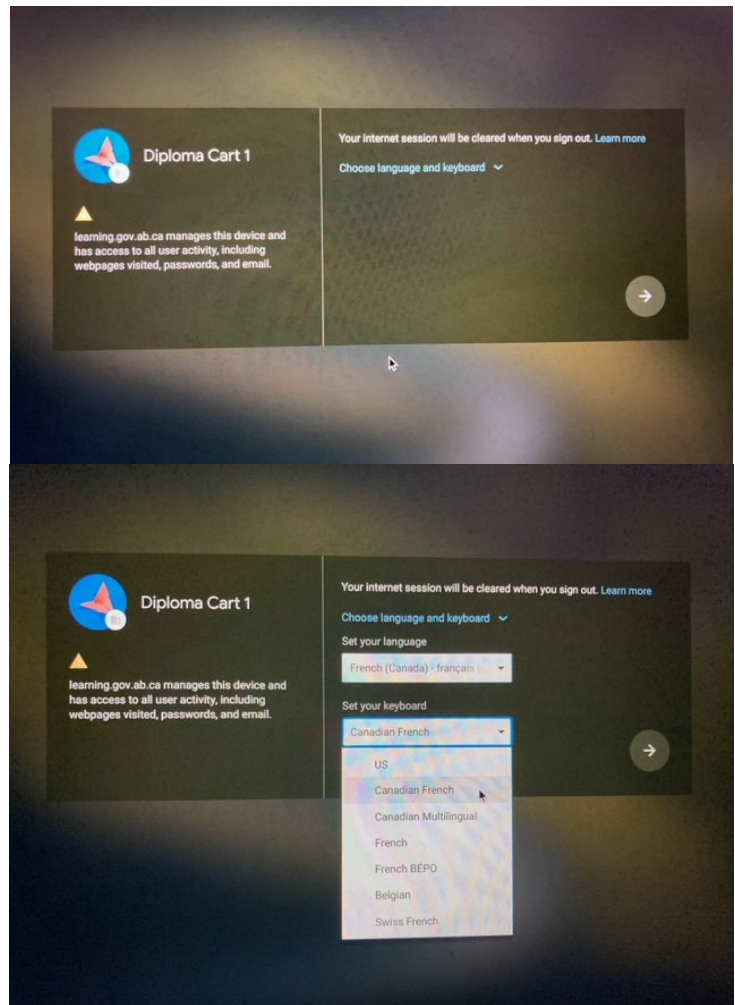


- Highlight the text you want it to read. It will start reading automatically.



Enabling French Language

- Before logging into the Chromebook, click on Language and Keyboard, select French (Canada) for the language and Canadian Multilingual for the keyboard



Appendix: Sample Secure Google Exam Configuration for Chromebooks

A special acknowledgement is extended to Buffalo Trail Public Schools Regional Division, Chinook's Edge School Division, and Red Deer Public School District for contributing to the development of the following configuration.

The following steps were created for devices within a specific school authority environment. This is provided as a helpful example of how Google Chromebooks can be configured to meet Provincial Achievement Test and Diploma Exam administration requirements.

Additional suggestions on how to configure Google Chromebooks are welcome. Please contact Jennifer.phillips@gov.ab.ca.

STEP 1: Create Exam Organizational Unit (OU) and User Settings

- **Create an OU for exam users.**
- **Device Management->Chrome Management->User Settings**
 - Select the OU where your Exam Users are held from the left panel.
 - Wallpaper > Upload Wallpaper > Use Secure Exam.jpg
 - Avatar > Upload Avatar > Use Secure Exam Avatar.jpg
 - Allowed Types of Apps > uncheck all but Extension
 - Force-installed Apps and Extensions > [Google Docs](#), and [Hide Google Docs Research, Accent Grid, Dictionary, Thesaurus & Reference](#)
 - Allow or Block All Apps and Extensions - Block all apps and extensions except the ones I allow
 - Allowed Apps and Extensions > Google Docs, Hide Google Docs Research, Google Dictionary,
 - Password Manager > Never allow use of password manager
 - Screen Lock > Never automatically lock screen on idle
 - Incognito Mode > Disallow incognito mode
 - Home Button > Always show Home button
 - Homepage > Homepage is always the Homepage URL, set below
 - <https://docs.google.com/document/d/1FOFVh5oWt7mvTKrhelUGjG0kFoyFrMfWPeHE9xEmPw8/copy>
 - Pages to Load on Startup
 - <https://docs.google.com/document/d/1FOFVh5oWt7mvTKrhelUGjG0kFoyFrMfWPeHE9xEmPw8/copy>
 - Screenshot > Disable Screenshot
 - Cast > Do not allow users to cast
 - Pop-ups > Allow all pop-ups
 - Blocked URLst:
 - *
 - <https://docs.google.com/picker/>
 - <https://docs.google.com/spreadsheets/d>
 - <https://docs.google.com/presentation/d>
 - <https://docs.google.com/drawings/d>
 - <https://docs.google.com/forms/d/>
 - <https://accounts.google.com/logout>
 - <https://accounts.google.com/AddSession>
 - <https://accounts.google.com/AccountChooser>
 - <https://accounts.google.com/SignOutOptions>
 - <https://workspace.google.com/>
 - <https://translate.google.com/>
 - <https://drive.google.com/sharing>
 -
 - Must blacklist these specifically even though * is blocked.
 - Blocked URL Exceptions
 - chrome-untrusted://print/
 - Chrome://settings/languages
 - chrome://print
 - <https://drive.google.com/>
 - <https://drive.google.com/drive/>
 - <https://drive.google.com/drive/my-drive>

- <https://docs.google.com/document/u/0/>
 - <https://goo.gl/zWFc0Z>
 - <https://drive.google.com/drive/shared-with-me>
 - <https://content.googleapis.com/>
 - <https://apis.google.com>
 - [Chrome://settings-frame/languages](chrome://settings-frame/languages)
 - <https://google.com/static>
 - <https://googleusercontent.com>
 - <https://www.thefreedictionary.com/>
 - <https://www.freethesaurus.com/>
 - <https://accounts.google.com>
- Managed Bookmarks
 - <https://drive.google.com/drive/my-drive> [Name: **Exam Recovery**]
 - Bookmark Bar > Enable Bookmark Bar
 - Bookmark Editing > disable bookmark editing
 - Google Translate > Never offer translation
 - Developer Tools > Never allow use of built-in developer tools
 - Form Auto-fill > Never auto-fill forms
 - DNS Pre-fetching > Never pre-fetch DNS
 - Multiple Sign-In Access > Block multiple sign-in access for users
 - Search Suggest > Never allow users to use Search Suggest
 - External Storage Devices > Disallow external storage devices
 - Audio Output > Disable audio output

When the exam is finished, you can use the Google Apps Manager (GAM) command to erase any docs left in the account with the following command:

```
gam user exam001(at)school.ab.ca show filelist | gam csv - gam user ~Owner delete drivefile ~alternateLink purge
```

STEP 2: Create Exam Template

Google Drive

Copy document

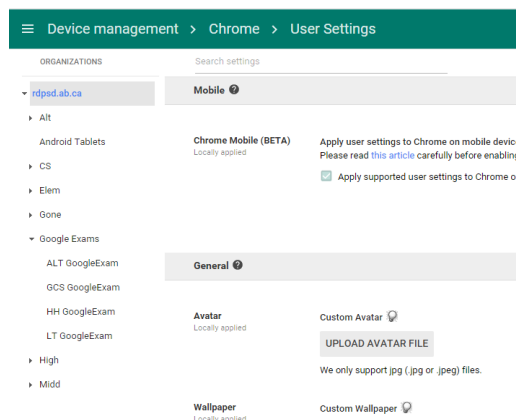
Would you like to make a copy of RDPSP Diploma Template (2015-2018)?

[Make a copy](#)



Below is an exam template that has the ID#, current page and total pages in the footer, and is double-spaced formatted. If desired, it is possible to create an alternate template by replacing the “edit” at the end of the document address with “copy” to force a copy on a new user. The following link points to a Red Deer Public example (feel free to modify and use):

<https://docs.google.com/document/d/1FOFVh5oWt7mvTKrheUGjG0kFoyFrMfWPeHE9xEmPw8/copy>



**This link needs to be added in the user settings as the homepage and pages to load on startup. The added bookmark (exam recovery) allows the student access to the Drive if the device fails, loses power, etc. We have also added a second bookmark for the printing document which is listed in the printing section of this document.

STEP 3: Create Exam Users and Apply to Exam OU

- Create a new OU for all exam user accounts (Google Exams) and then separate them by school.
- Create exam accounts using a naming protocol that identifies the school and reflects that it is an exam account (i.e., schoolexam001(at)school.ab.ca
- Associate the accounts with the appropriate OU's.
- Create Google spreadsheets for each school with the appropriate usernames and passwords. Teachers will be responsible for cutting these up and giving each student the username and password at the beginning of the exam.

STEP 4: Set Up Native Printing

We now use native printing by chromebook OU IPP queues

STEP 5: Set up GAM to backup exams, delete all files and trash & reset passwords nightly

This is an example from a school division:

New GAM commands. Please note this is using GAM Advanced X ([GAMADV-X](#)). When 2500 exam accounts were run it finished in 33min. Advantages of this version of GAM include: output file with any errors or failures, speed, not having to recreate accounts daily and the repository account is not getting "spammed" with transfer emails.

```
gam redirect stdout Transfer.out multiprocess redirect stderr stdout csv "Example Exam Accounts MASTER -  
Examplegam.csv" gam user ~Email transfer drive google.exam.repository@school.ab.ca targetuserfoldername "#user#"
```

```
gam redirect stdout ChangePW.out multiprocess redirect stderr stdout csv "Example Exam Accounts MASTER -  
Examplegam.csv" gam update user ~Email password ~PW
```

```
gam redirect stdout EmptyTrash.out multiprocess redirect stderr stdout csv "Example Exam Accounts MASTER -  
Examplegam.csv" gam user ~Email empty drivetrash
```

Please note that this is an example solution and may not be right for your environment.

GAM command to copy all GDocs:

```
gam.exe ou_and_children exam.school.ca show filelist id | gam csv - gam user ~Owner get drivefile id ~id format microsoft  
targetfolder F:\exam-backup\%DATE:~10,4%\%DATE:~4,2%\%DATE:~7,2%\~Owner~
```

The above command will create a directory structure on the drive F: that will look like: exam-backup/<year>/<month>/<day>/GAFEUserName. Our schools assign specific exam accounts to specific students, so we're able to determine which student was on which account per exam per day, in case something needs to be found.

GAM command to purge:

```
gam.exe ou_and_children exam.school.ca show filelist id | gam csv - gam user ~Owner delete drivefile ~id purge
```

This will purge the Google Drive files for ALL users under the specified OU. Replace “exam.school.ca” with whatever is appropriate for you. This command will recursively parse user accounts.

GAM command to delete everything from trash for all users in OU structure:

```
gam.exe print users Email query orgUnitPath="/exam.wrsd.ca" | gam csv - gam user ~primaryEmail empty drivetrash
```

Again, replace “exam.school.ca” with whatever’s appropriate for your environment.

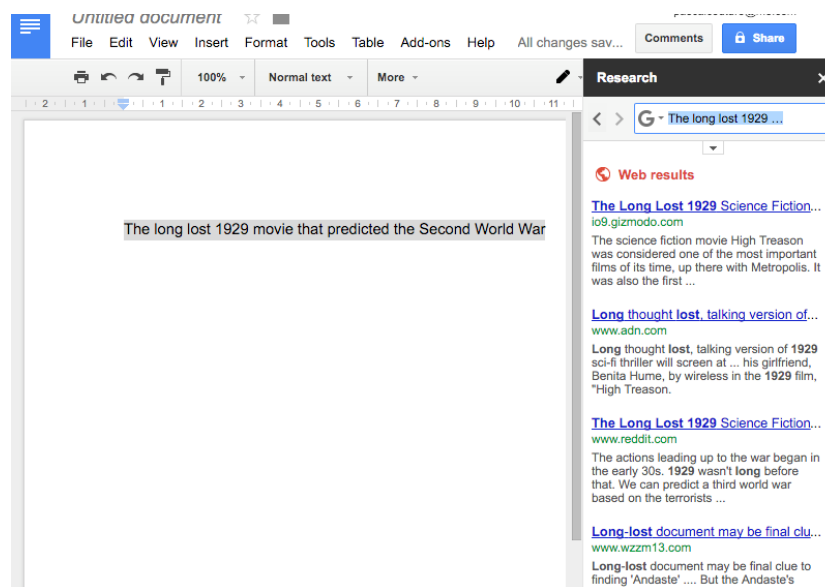
Some schools use these exam accounts on a regular basis - not just for provincial assessments. So they needed to find a solution that could be used by teachers daily, and would not require constant updates, PW resets, changes, etc. That’s where [GAM](#) comes in.

To be compliant with Ab Ed’s new directive to backup all provincial assessments for AT LEAST 30 days, we needed to find an efficient solution that did not require the students to do anything.

STEP 6: Add a Custom App to block the Research Pane

The research pane in Google Docs must be blocked as it allows students to retrieve information from the internet (see screenshot below). Chinook’s Edge School Division has created and published a Chrome Extension that “hides” the research pane. Essentially, the extension covers the research pane area which also means the “Define” menu will also be covered (and inaccessible). It is recommended that a dictionary extension be installed to address this issue.

The [Hide Google Docs Research extension](#) is publicly available at no cost to all school authorities who want to employ the use of Google Docs to administer their Diploma Exams on Chrome OS devices.

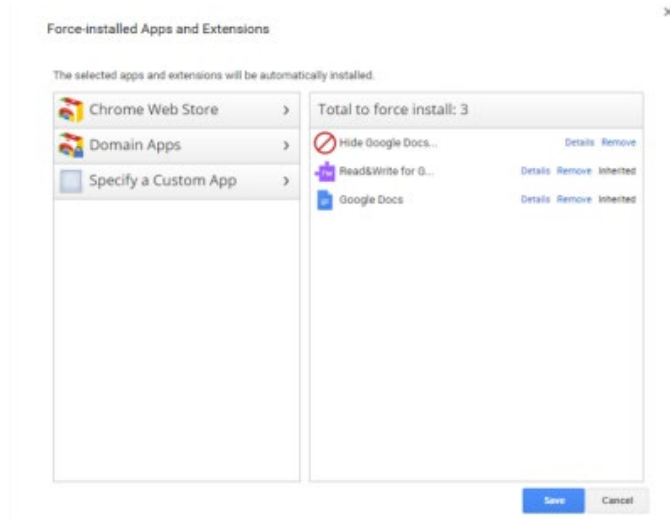


Install the Chrome extension using one of the two methods listed below:

- Search through the Chrome web store (top left option)
- Specify the custom (bottom left option) using the credentials below:

ID: fnifdkggkcjiaahokngjoajgpboaaobj

URL: <https://chrome.google.com/webstore/detail/hide-research/fnifdkggkcjiaahokngjoajgpboaaobj>



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