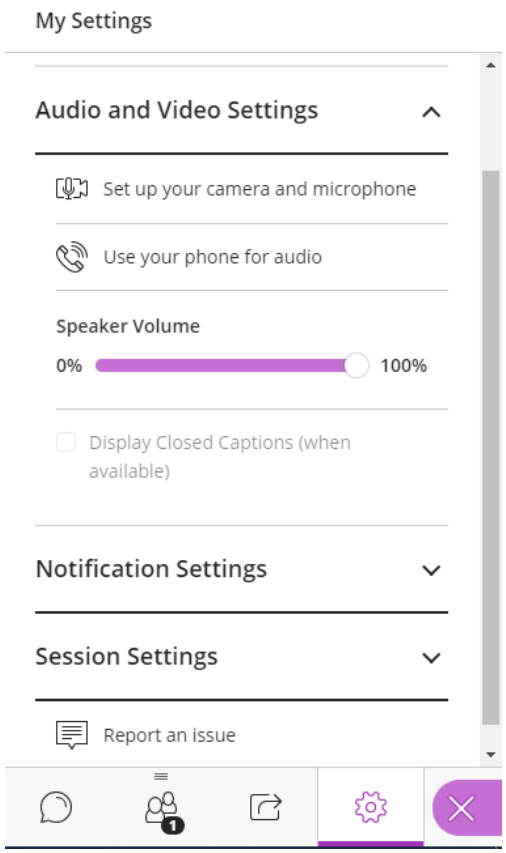
Before we get started…

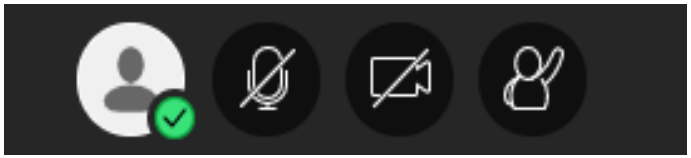
1) Open the Collaborate panel (bottom right of screen)

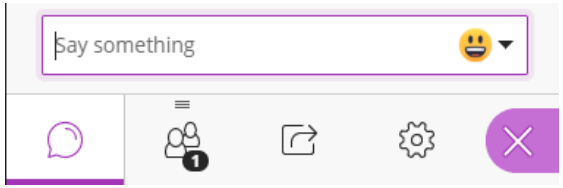
2) Click on the gear icon for settings

3) Check your audio & notification settings



Controls: Test muting and unmuting, raising your hand, and providing feedback





Chat: Feel free to use the chat to interact with your colleagues and the moderators.

Adapting Experiential Learning for Remote Delivery – *Webinar Series*

Session Title	Session Date
1. Effective Partnership Development and Engagement in a Remote Environment	*Session slide deck and recording are available on the webinar series website.*
2. Community-Engaged Learning	*Session slide deck and recording are available on the webinar series website.*
3. Field Work Films: Notes on Recording for Remote Teaching	*Session slide deck and recording are available on the webinar series website.*
4. Field Experiences	**Wednesday, July 8th from 1-2 PM EST**
5. Teaching Research-Intensive Courses Remotely	Friday, July 10th from 1-2 PM EST
6. Organization-Partnered Projects	Monday, July 13th from 1-2 PM EST
7. Academic Internships	Wednesday, July 15th from 2-3 PM EST
8. Designing Remote Activities to Spark Student Engagement	Tuesday, July 21st from 1-2 PM EST

Session 4. Field Experiences

Adapting Experiential Learning for Remote Delivery Webinar Series

July 8, 2020

UNIVERSITY OF TORONTO

Meet your session panelists.

Session Speakers:

- **Professor Nick Eyles**, Professor, Department of Physical and Environmental Sciences, University of Toronto Scarborough
- **Shane Sookhan**, PhD Candidate, Online Learning Coordinator, Department of Physical and Environmental Sciences, University of Toronto Scarborough

Planet Earth Online

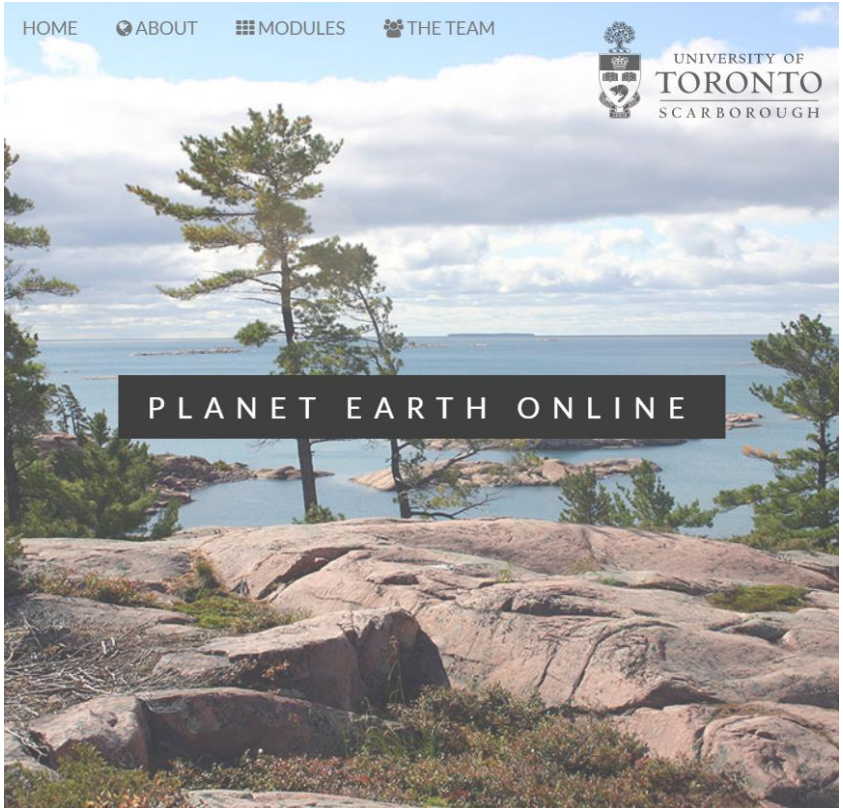
An online platform for remote experiential learning in Environmental Science courses

Introduction to Planet Earth (EESA06)

- EESA06 is a first-year introduction to Earth Science
- One of the largest enrollments on campus (<2000 students per year)
- An important gateway course to Environmental Science degrees
- Web option available in Winter, fully online in Summer (asynchronous learning with on campus midterm and exam)
- Large enrollment and online options make hands-on experiential learning difficult to host

Planet Earth Online

- The Planet Earth Online project was started in 2017
- Funded by eCampusOntario and a LEAF Impact Grant
- Provides an experiential “lab” component to several courses on campus
- Consists of 17 online modules
- Modules have been used by over 5000 students, with feedback from over 1500
- Modules based around a series of virtual field trips that use examples from our local geology and environment to teach core course concepts



planetearth.utsc.utoronto.ca

Why Virtual Field Trips?

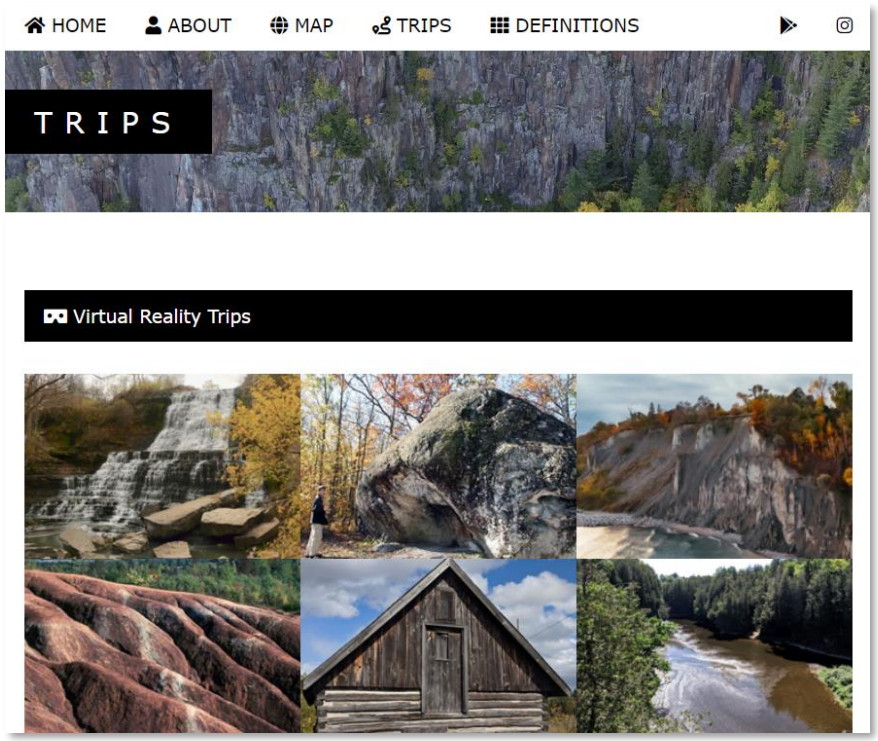
- Field trips are a core part of the environmental science learning experience:
  - Provide real-world context
  - Expand breadth of course
  - Increase student engagement
  - Proven valuable for recruitment and retention
- Traditional field teaching methods **cannot** accommodate the logistical and accessibility demands created by large introductory classes
- Virtual Field Trips provide an innovative platform for delivering educational material by attempting to simulate the traditional field trip experience online

Virtual Field Trips

Creating and using virtual field experiences in large enrollment Environmental Science courses

Virtual Field Trips (VFTs)

- Planet Earth Online consists of over 35 immersive and media enriched virtual field trips
- Draws on a database of over 500 environmentally significant locations (Planet Rocks)
- Three different types of VFTs developed:
  - Thematic Map Trips
  - Virtual Reality Trips
  - Story Map Trips
- Different VFT types chosen to simulate important aspects of the field trip experience



planetrocks.utsc.utoronto.ca/trips/

Thematic Map Trips

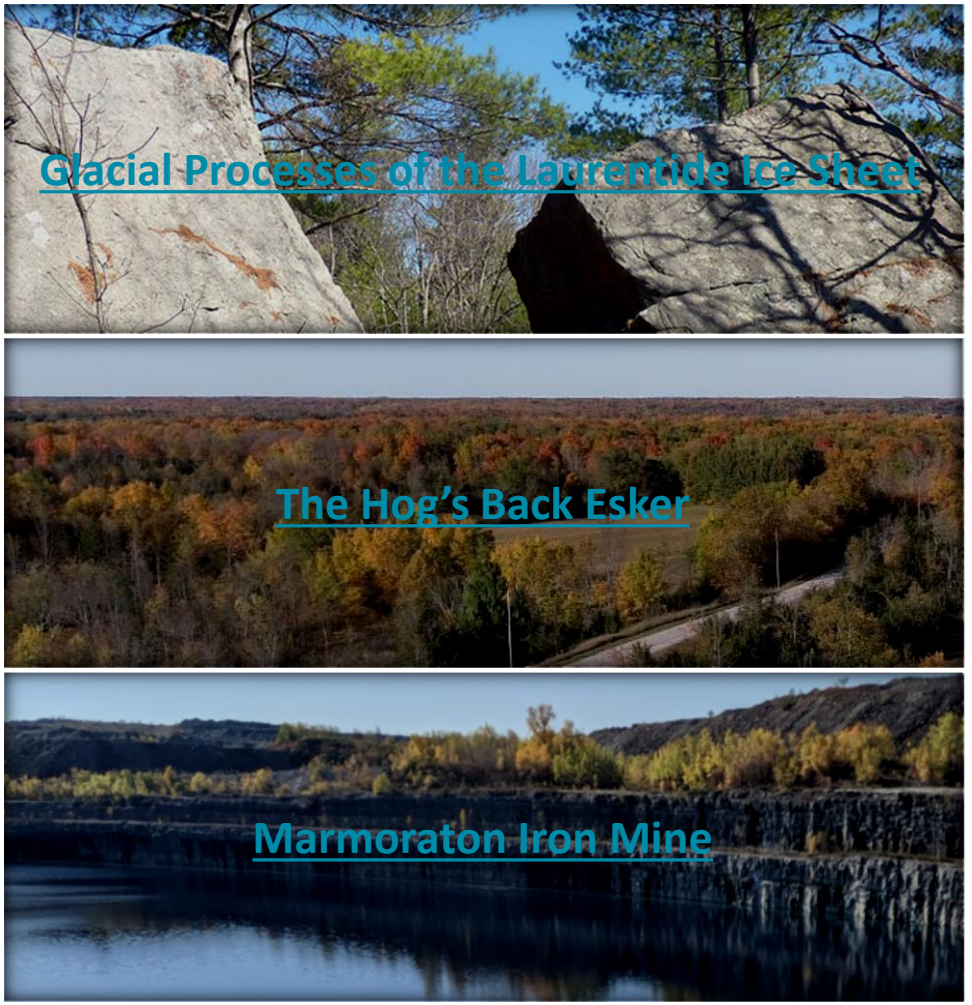
- Presents a thematically linked collection of environmentally significant locations
- Serves as an introductory overview or field guide styled recap
- Useful for scavenger hunt-like activities
- Made with a customized version of ArcGIS Story Maps (Shortlist View)

Virtual Reality Trips

- Simulates the “in field” aspect of a field trip
- Students interact with and explore a 360° panoramic environment
- Hotspots used to embed supplementary material to simulate in field explanations
- Can be used on desktop or with VR-headset
- Made using Javascript with a framework called Panolens.js

Story Map Trips

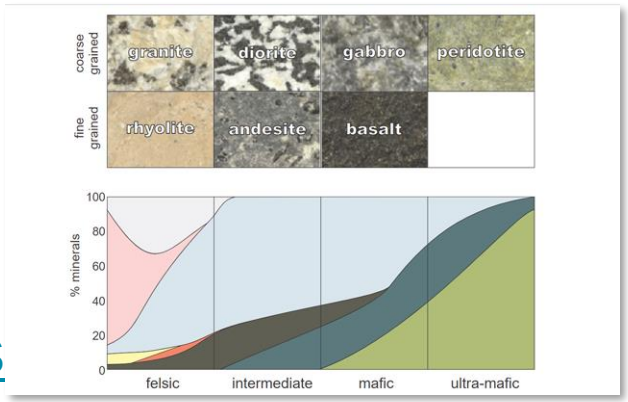
- Links a series of media enriched locations into one coherent narrative
- Emulates the storytelling aspect of being on a field trip
- Embedded activities used to tie course concepts into experiential environment
- Made with a customized version of ArcGIS Story Maps (Cascade view)



Embedded Activities

TimelineJS

JuxtaposeJS

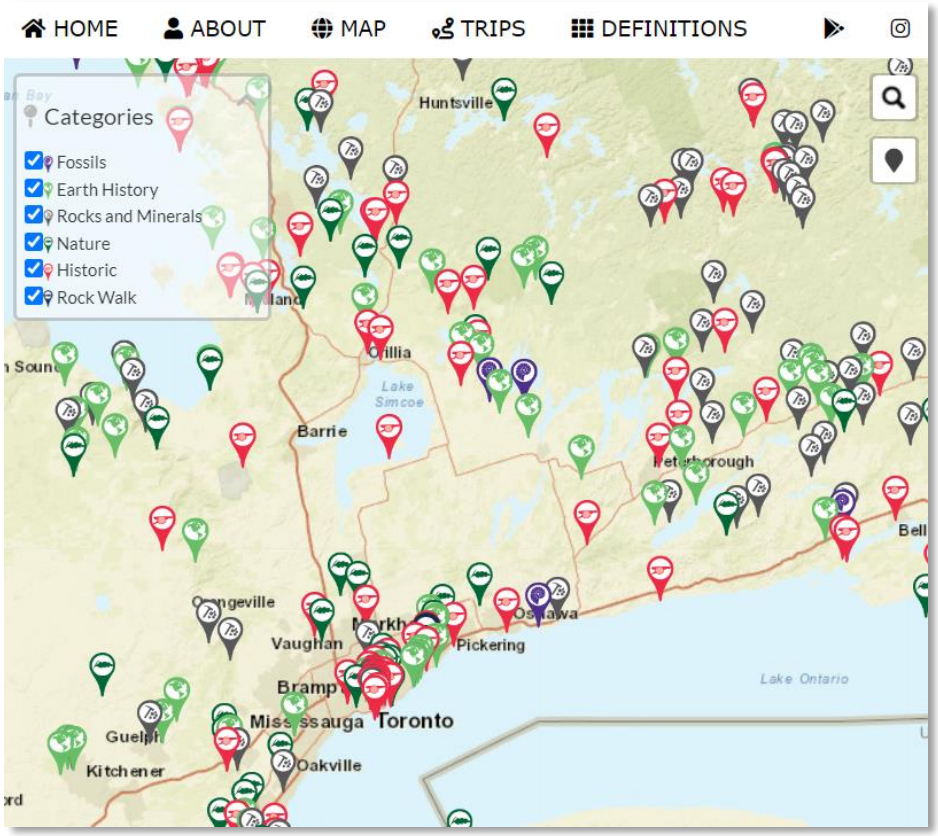


CesiumJS

SketchFab

Collecting and Using Media

- For this project we collected:
  - **Photographs**
    - Using previously taken photographs can jumpstart a project
    - Check with your divisional support for copyright inquiries
  - Videos
  - 360° photos
  - Drone Imagery



planetrocks.utsc.utoronto.ca

Collecting and Using Media

- For this project we collected:
  - Photographs
  - **Videos**
    - Image stabilization using a gimbal
    - We've found smartphone quality to be more than adequate
    - Use Creative Commons Music or separately recorded audio
    - Video editing can be time consuming
  - 360° photos
  - Drone Imagery

DJI Ronin S

DJI Osmo Mobile 3

Collecting and Using Media

- For this project we collected:
  - Photographs
  - Videos
  - **360° photos**
    - Tripod use is recommended
    - Our camera had limited image quality, so good lighting was needed
  - Drone Imagery

Ricoh Theta V

Collecting and Using Media

- For this project we collected:
  - Photographs
  - Videos
  - 360° photos
  - **Drone Imagery**
    - Drone pilot license and registration needed for drones 250 g and heavier
    - Can be used to collect photos, videos and 360° photos
    - Restricted access to some locations

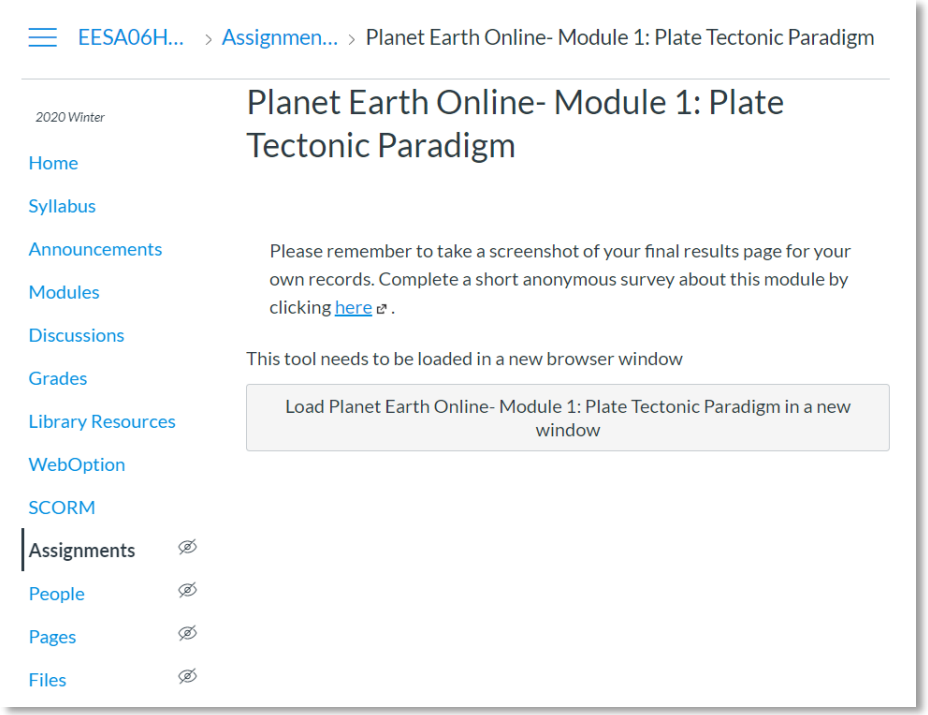
DJI Phantom 4

Course Design For Virtual Field Trips

Experiences integrating virtual field trips into a large enrollment Environmental Science course

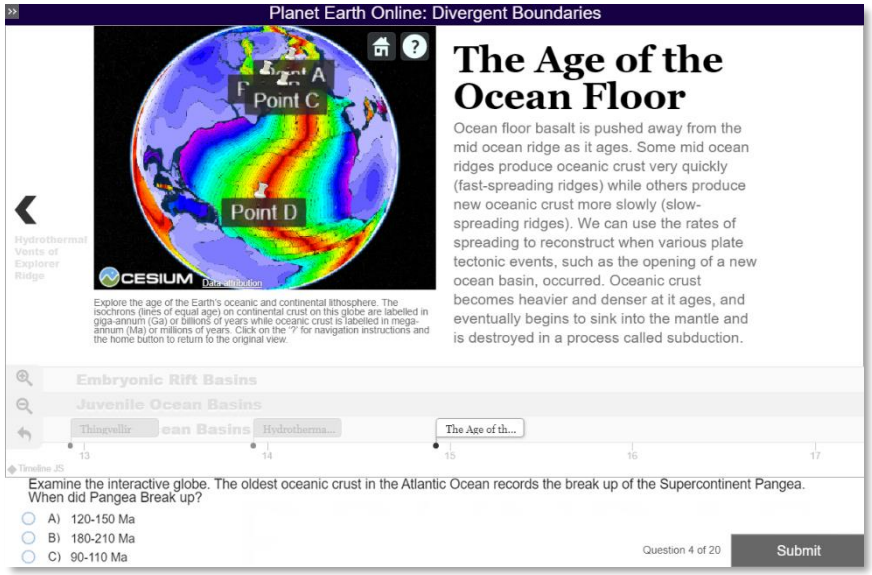
Quercus Integration in EESA06

- Virtual Field Trips packaged into modules using Adobe Captivate and exported as SCORM files
- We have tried two ways of serving SCORM files to students
  - SCORM files imported into Quercus as assignments
  - SCORM files hosted on university server and embedded into Quercus as iframes
- The second option has worked better for us



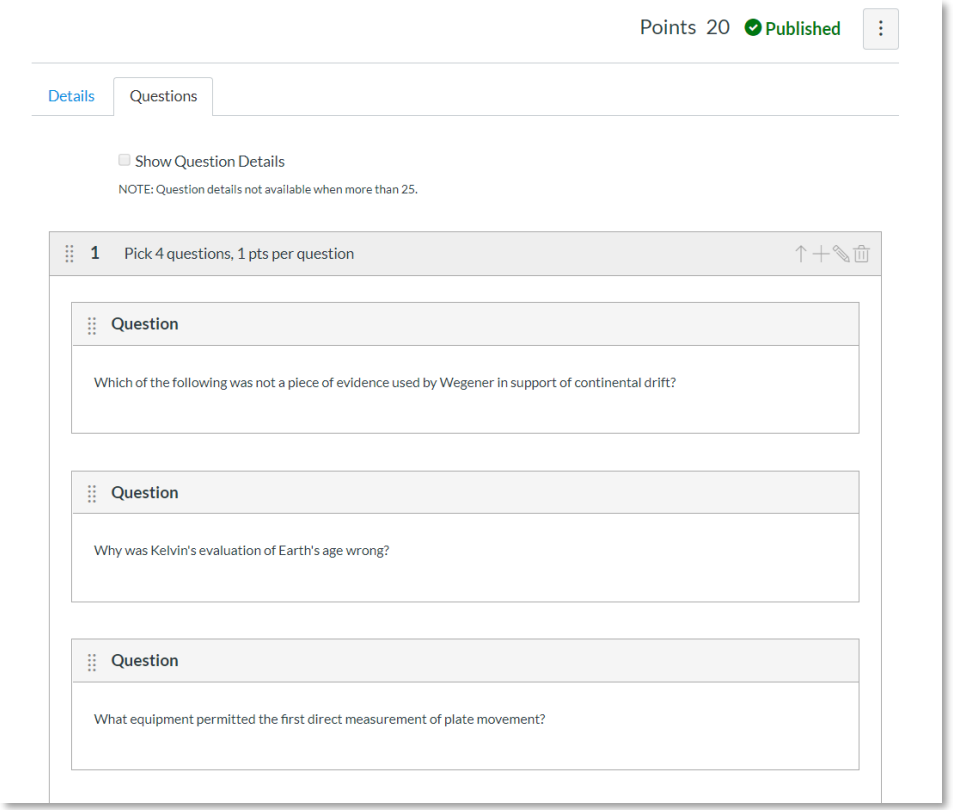
Assessment

- Each module ends with a 20-question quiz made up of multiple-choice and true/false questions
- Students are expected to manipulate activities and apply learned concepts to answer questions
- Quiz grades are automatically entered to Quercus



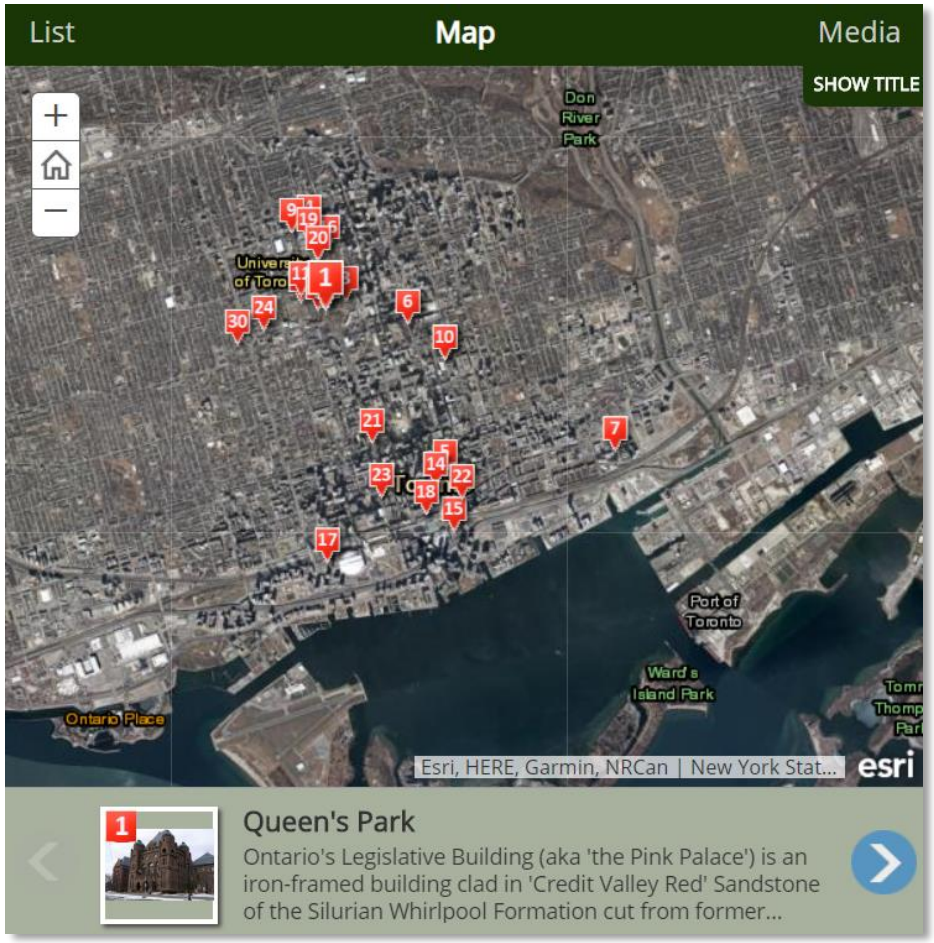
Assessment

- Module quizzes are split into 4-5 major topics with a question bank of 10-50 questions for each topic
- 4-5 questions are randomly selected from each question bank for each student's quiz
  - Ensures that all major topics are still covered in a randomized quiz
  - Makes it harder for students to cheat....
- This setup can be accomplished in Quercus



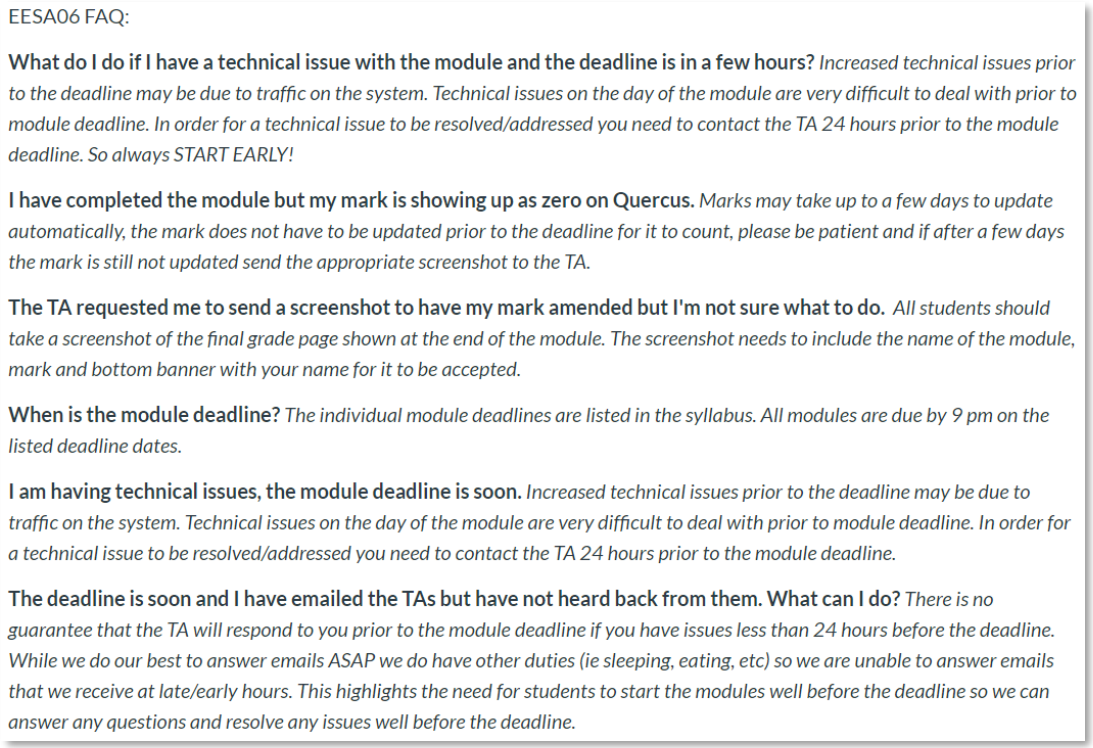
Tips for Delivering Online Labs

- Keep it interactive!
  - Effective experiential learning environments require manipulatable material where students learn while “doing”
- Tends to work best when material is self-contained
  - The asynchronous nature of online learning means students may not have watched/read expected material before attempting lab
- Use local examples where possible
  - Provides real-world context to course concepts
  - Bridges disconnect between online learners and their campus
  - Good way to familiarize foreign students with our local environment



Tips for Delivering Online Labs

- Accessible/Responsive design
  - Students may be using modules on a variety of devices (different screen sizes and internet connection speeds)
  - Alternate screen-readable versions of interactive material
- Write and update a FAQ document
  - Common errors tend to occur (i.e., Browser extensions may cause some material to not show)



EESA06 FAQ:

What do I do if I have a technical issue with the module and the deadline is in a few hours? *Increased technical issues prior to the deadline may be due to traffic on the system. Technical issues on the day of the module are very difficult to deal with prior to module deadline. In order for a technical issue to be resolved/addressed you need to contact the TA 24 hours prior to the module deadline. So always START EARLY!*

I have completed the module but my mark is showing up as zero on Quercus. *Marks may take up to a few days to update automatically, the mark does not have to be updated prior to the deadline for it to count, please be patient and if after a few days the mark is still not updated send the appropriate screenshot to the TA.*

The TA requested me to send a screenshot to have my mark amended but I'm not sure what to do. *All students should take a screenshot of the final grade page shown at the end of the module. The screenshot needs to include the name of the module, mark and bottom banner with your name for it to be accepted.*

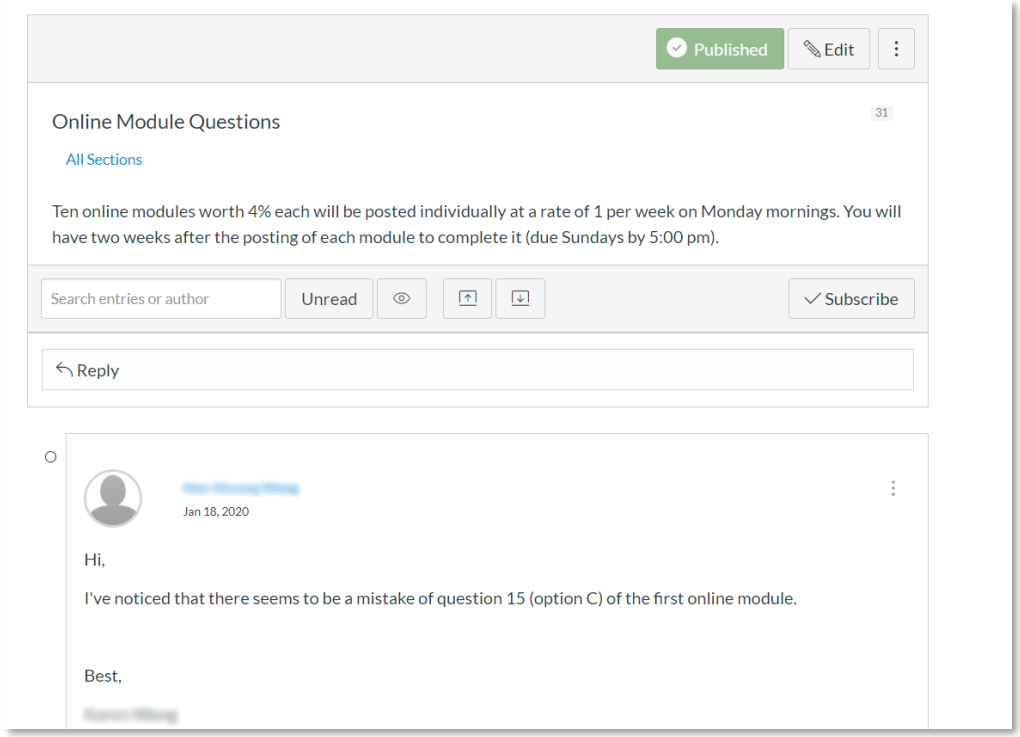
When is the module deadline? *The individual module deadlines are listed in the syllabus. All modules are due by 9 pm on the listed deadline dates.*

I am having technical issues, the module deadline is soon. *Increased technical issues prior to the deadline may be due to traffic on the system. Technical issues on the day of the module are very difficult to deal with prior to module deadline. In order for a technical issue to be resolved/addressed you need to contact the TA 24 hours prior to the module deadline.*

The deadline is soon and I have emailed the TAs but have not heard back from them. What can I do? *There is no guarantee that the TA will respond to you prior to the module deadline if you have issues less than 24 hours before the deadline. While we do our best to answer emails ASAP we do have other duties (ie sleeping, eating, etc) so we are unable to answer emails that we receive at late/early hours. This highlights the need for students to start the modules well before the deadline so we can answer any questions and resolve any issues well before the deadline.*

Tips for Delivering Online Labs

- Have a contingency plan for technical issues
  - Students will find a way to break anything…
  - Set out clear contingency plans from the get go
- Use Quercus Discussion Boards
  - We separate discussion into Content Related Questions and Technical Support
  - Creates class community were common issues can be dealt with
- Weekly office hours can be held using Meeting software
  - Adds synchronous element to Labs if TA hours are available



Going Forward

The future of Planet Earth Online

Outside of the Classroom

- Virtual Field Trips can be effective outreach and promotional tools
  - Introduce students to their local environment
  - Expose potential students to the breadth of programs offered on campus

Expanding Outwards!

Contact Information and Additional Experiential Learning Resources

Let’s continue the discussion. Please feel free to contact us using the following information:

Session Speakers:

- **Professor Nick Eyles: eyles@utsc.utoronto.ca**
- **Shane Sookhan: shane.sookhan@mail.utoronto.ca**

Thank you!
Here are some additional resources:

- **Remote Experiential Learning Resources** – For additional resources available to faculty and staff as they design, implement and administer remote experiential learning opportunities, please view the following SharePoint site, available to all UofT faculty and staff - https://utoronto.sharepoint.com/sites/dvpp-aelr.
- **Remote Experiential Learning Webinar Series** – To register for additional webinar sessions in this series, please view the following website - https://utoronto.sharepoint.com/sites/dvpp-aelr/SitePages/Adapting-EL-for-Remote-Delivery---PD-Series.aspx.
- **Experiential Learning at UofT** – For more information about experiential learning at the University of Toronto, please view the following website - https://experientiallearning.utoronto.ca/.
- **All Other Questions** – For all other questions, please email the Office of the Vice-Provost, Innovations in Undergraduate Education at vp.iue@utoronto.ca. We look forward to hearing from you!