Utilizing TopHat Test for Proctored Exams and Quizzes

Bentley Coffey and Jan Bass 4/3/2020

TopHat is a web-based platform for interactive learning in face-to-face, hybrid, or online courses; the platform includes [GPS confirmed] attendance, "clicker" questions, slides, auto-graded homeworks, tests and even textbooks. TopHat usually charges students a subscription service (as expensive as $45 per semester or as cheap as $10 per semester, depending on the bulk pricing details) but has since waved all fees during this prolonged CoViD-19 crisis. Until recently, TopHat's Test feature simply locked down students computers so that they couldn't open another window or take a screenshot, much like Blackboard's Respondus Lockdown Browser; however, TopHat has just acquired the online proctoring technology of Proctorio (a competitor to ProctorU) and now offers proctoring in its online tests. At the least, this document should serve as a guide to help an instructor decide if the TopHat environment is the right solution for their current testing needs for their course.

This document can also serve as a primer to get an interested instructor started but it should not be considered the end-all be-all reference document for TopHat. Fortunately, TopHat is fairly user friendly and their people are remarkably eager to provide any type of help that you might want: on-line documents, on-line videos, support phone calls/chats (9am-9pm EST Mon-Fri), video meetings where they can take control of your screen to walk you through each step, and even flying someone out to hold your hand through a daunting rollout of something new for your course. Some links to TopHat support are included at the end of this document…

Question Types

TopHat tests allow instructors to create and deliver exams on the TopHat environment, over the web. The exam tool allows for the creation of a multitude of question types, including:

- Multiple Choice (including True/False and Multiple Correct Answers)
- Fill in the Blank (including 1-2 Word Answers)
- Numeric Answer (including a Formula variant where TopHat generates 5 different versions)
- Click on Target (identify the correct location in an image)
- Matching
- Sorting
- Long Answer

Other than the long answer question type, all questions can be autograded (and in real-time while watching the students take the exam). Instructors can create their own Question Pools or import others' existing question pools (some of which are free but also cost a small fee on the TopHat Marketplace). An additional benefit of TopHat exams is that students can get feedback as quickly as the instructor wants (eg immediately, after the exam time is over, or once the instructor has had a chance to go over the exam).

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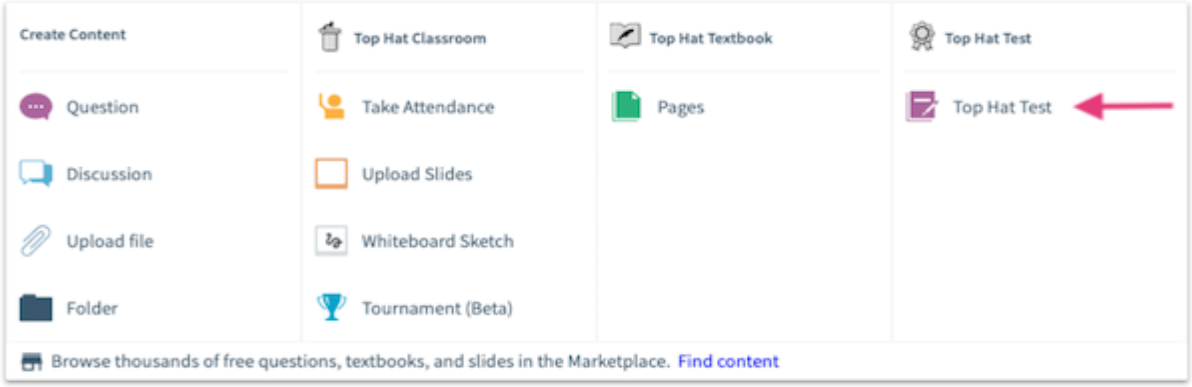
Exam Controls

Exam control options include:

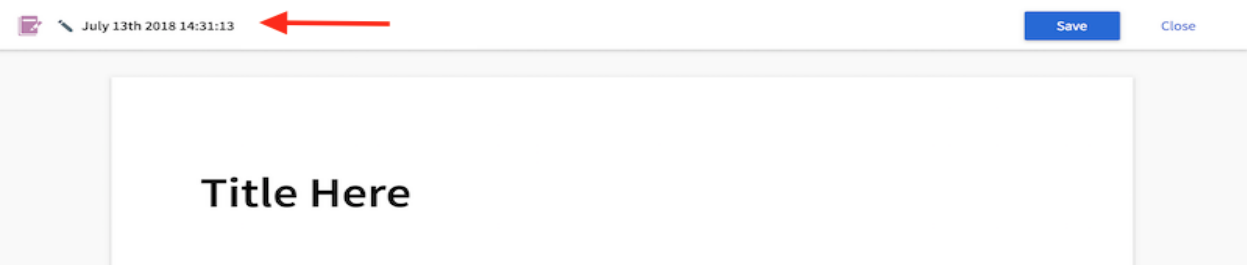
- Randomizing the order of the questions across students
- Locking students out for taking a screenshot
- Locking students out from leaving the test window (and a tolerance for how long)
- Locking students out for suspicious activity detected by the AI monitoring their video feed
- Hide questions and answers from students after the test
- Exporting the test to a pdf for administering to students with disabilities
- Scheduling a window for when students can take the test (asynchronously)
- Setting a time limit for taking the test (asynchronously)
- Setting the number of points that each individual question is worth (need not all be the same)

Test Creation Steps

Tests (or quizzes or exams) are created by selecting the eponymous button in the instructor's menus on the Top Hat platform:



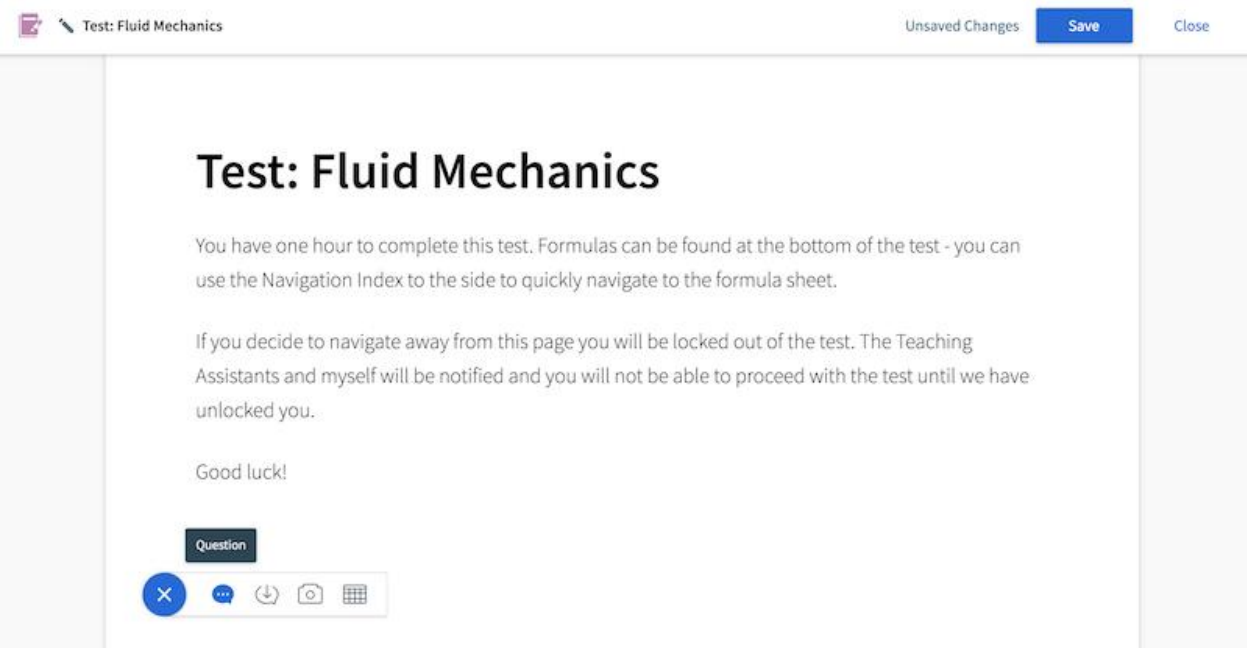
Upon creating a new test, it is good to assign it an appropriate title (eg Final Exam Spring 2020) so it's easy to identify in list of the course's content in TopHat. To do this, click in the header in the upper left hand corner of the test editor (where by default it will be the date and time the document was created), and type the new test title. The test title will be applied in list of course contents as soon as Save gets clicked.



The actual document (as the student sees it during the exam) can then be given a title by highlighting the generic "Title Here" and inserting the desired text. When it comes to producing the main body of text, the instructor can compose directly into the editor as a word processor or copy and paste text into the provided space. Naturally, the instructor may choose to include some directions at the top of the test such as time limit, tips, or other instructions.

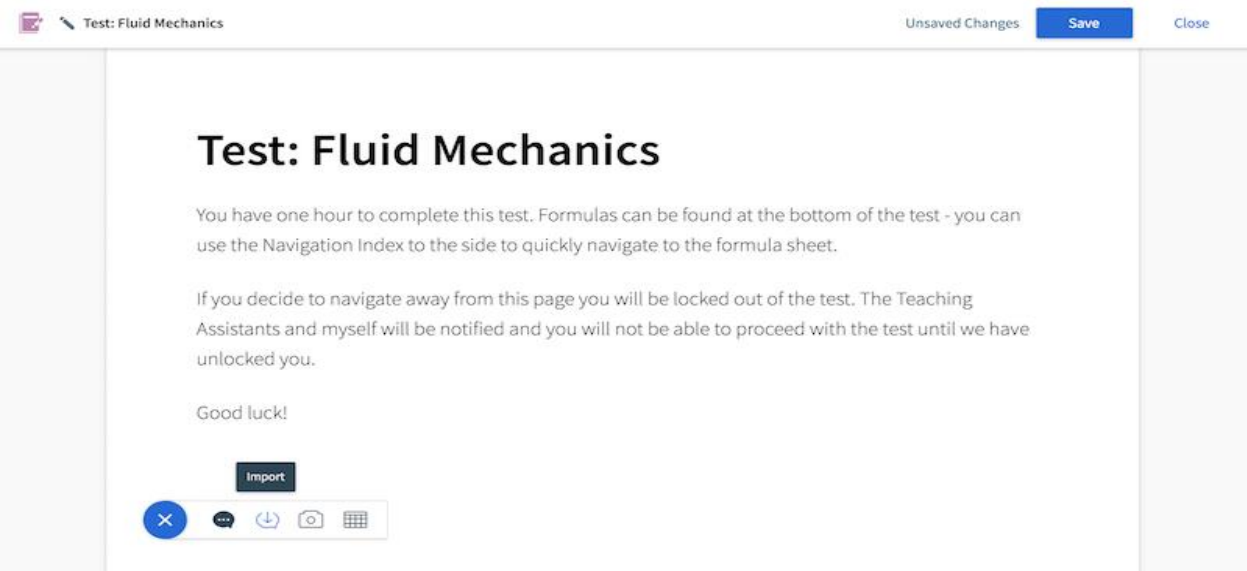
Tip: Highlighting a section of text will reveal the text formatting toolbar (eg headings, bold, italics, underlined, subscripts, superscripts, etc…). The heading options are particularly useful to students more easily navigating around the test using their navigation index in the left pane of the window.

To add question to the test, press the enter key to create a space in which to slot in the content. The blue plus sign button will appear and upon clicking it the toolbar appears with 4 options: [write new] question, import [pre-existing question], [insert] picture, and [insert] table. To create a new question from scratch click on the "Question" option:



The instructor has the option of randomizing the order of the questions for each student. For students to see slightly different versions of a particular question, the instructor can also make use of multi-version and formula questions (TopHat will generate five versions of the question according to that formula and distribute them randomly across students). The default grading structure in TopHat Test is to count every question with 1 point for correctness and 0 points for participation (ie attempting it, which is there for instructors wishing to use “clicker” questions during lectures). Instructors can change this on a question by question basis while creating each question or later by editing questions. Be sure to save regularly while creating a new test by clicking on the "Save" button in the upper right hand corner (and the “Close” button to the right of that when ready to move on) in case there is some interruption in the internet connection.

Instructors also have the option of pulling in pre-made questions from the TopHat Marketplace (some for free and some for a small fee). The import function allows an instructor to embed an existing Top Hat question into the test. Clicking on the import icon within the visual and interactive toolbar will reveal a dialog box where the instructor can select one or more questions from the Top Hat course. These questions may be standalone questions in the list of course content, or be contained within a pages document.



To import questions, place a checkmark in the checkbox next to the desired question(s and click where it says "Import Questions" to add them into the test. They will be added in the order in which they appear in the right hand pane of the import dialog, which can be re-ordered by simply clicking and dragging them into the preferred order.

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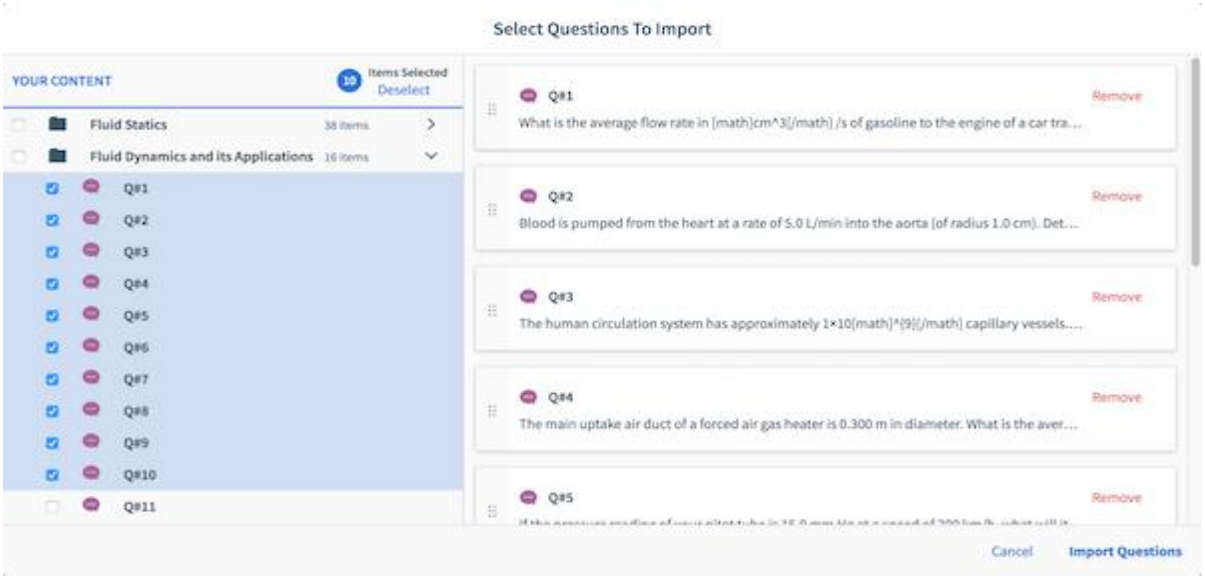
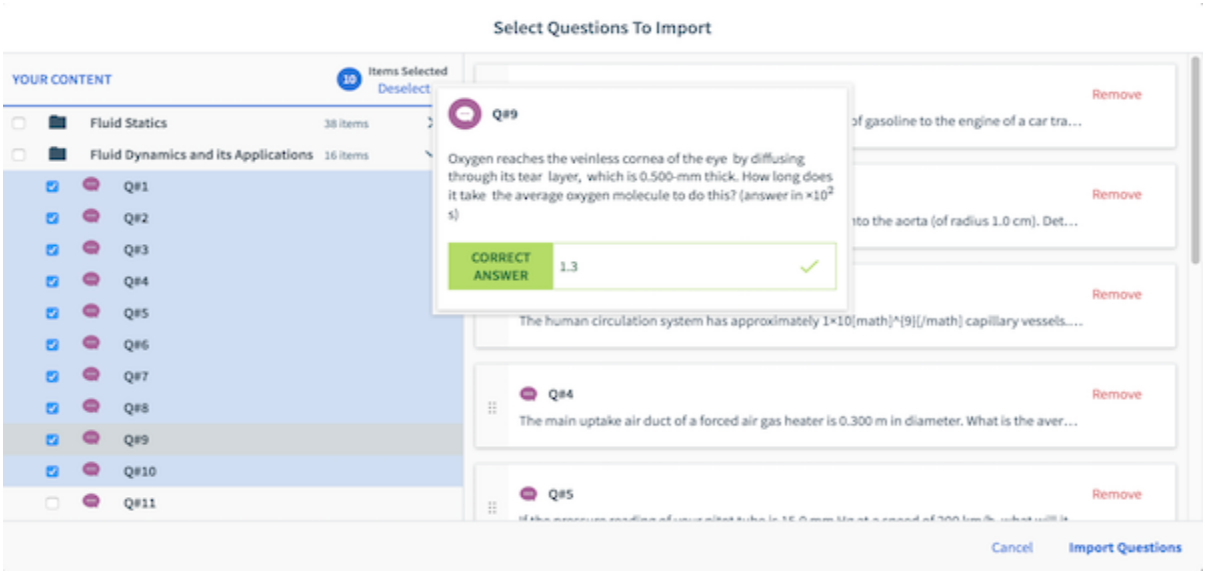


Hovering over the title of the question will bring up a preview of that question.



Note that the default is for imported questions retain their correctness points but for their participation points to be reset to zero. Again, the instructor can change these grading options on a question by question basis.

Once the instructor has finished creating the test, click "Save" in the upper right hand corner, followed by "Close" to return to the TopHat course content console.

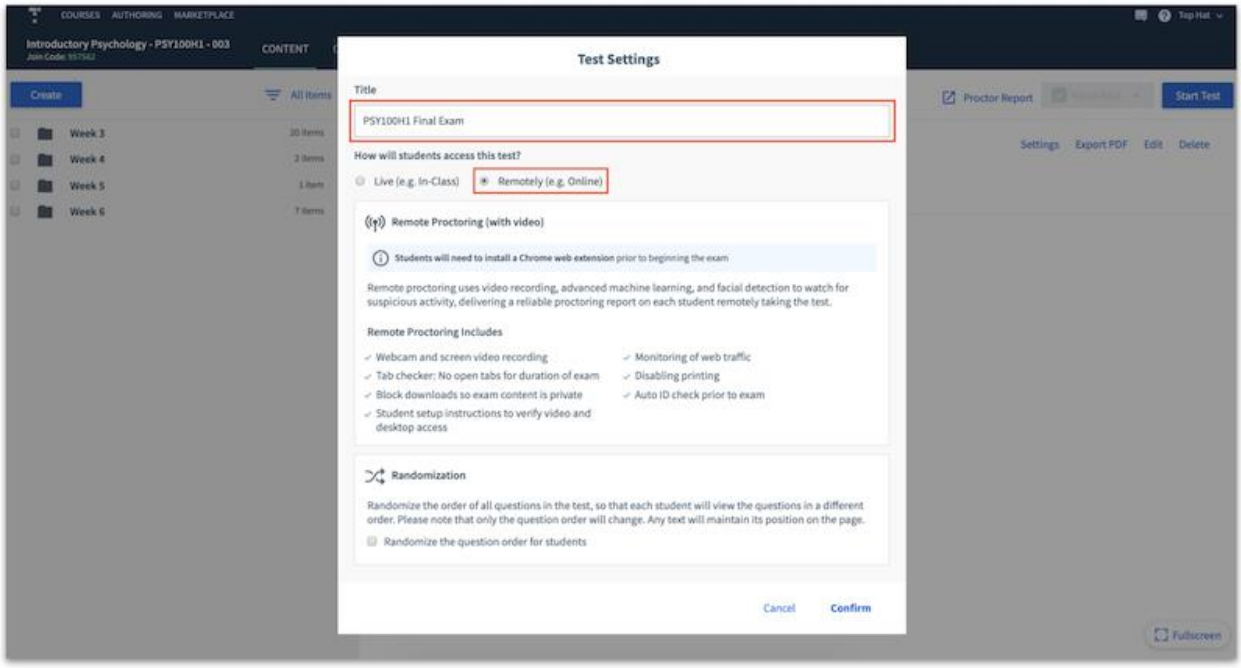
System Requirements for Remote Tests

1. Remotely proctored tests can only be taken on a laptop or desktop computer with 2GB of RAM free and a working webcam.
2. The test must be accessed through a Google Chrome browser.
3. The Proctorio web extension must be installed on the Google Chrome browser prior to starting the test (available for download for free in the Chrome Web Store).
4. Students must have a piece of photo ID on-hand, which will be scanned by the webcam, in order to access the test.

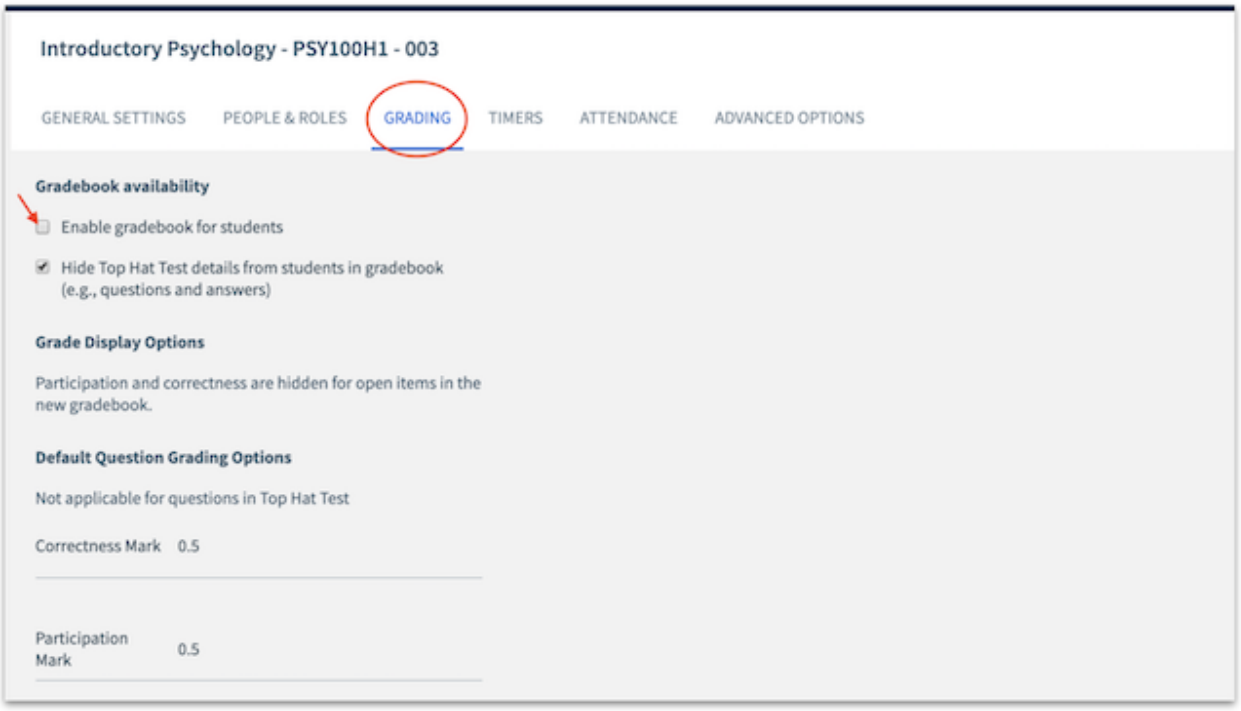
Given these requirements, it is a good idea to run a practice test so that the students can familiarize themselves with the process of accessing and completing a remotely proctored test in Top Hat.

Administering Tests

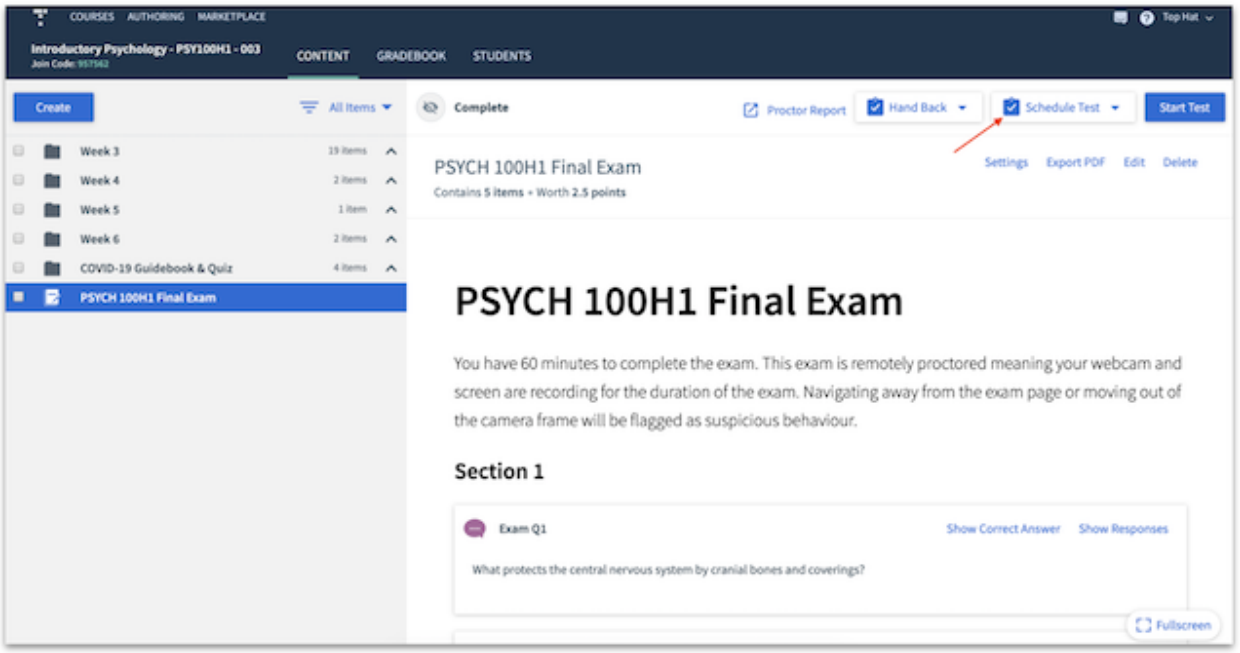
In the Test Settings window, right above the check box for randomizing the order of questions across students, there is an option for "How will students access this test?" and the instructor needs to only select "Remotely" instead of “Live”.



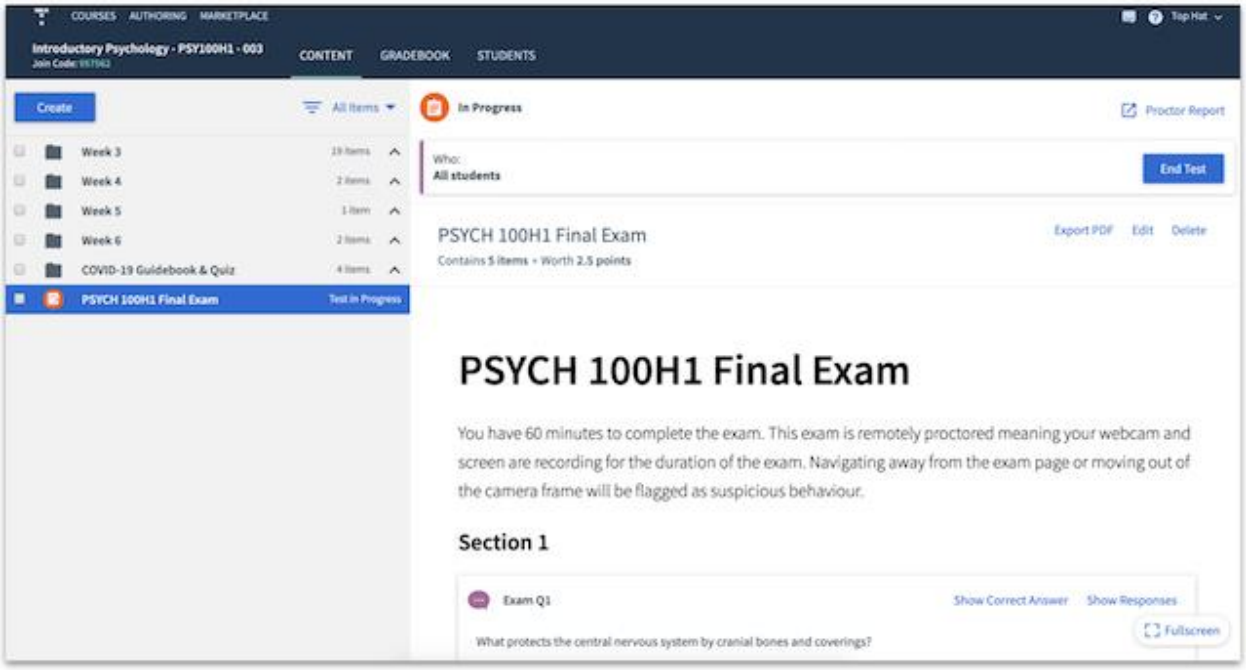
Given that the instructor will need time to review the data in the Proctor Report before revealing students' grades to them, the instructor may want to disable the Gradebook for students prior to administering the test. The instructor may also want to hide Test details (questions and answers) from students in the Gradebook until everyone has taken the exam. These can be done in the Grading section of your Course Settings (accessible via clicking the instructor’s name in the top-right corner of the screen, selecting "Course Settings" from the menu that appears, and navigating to the Grading tab) by unchecking the relevant box and then clicking "Save” at the bottom of the page:



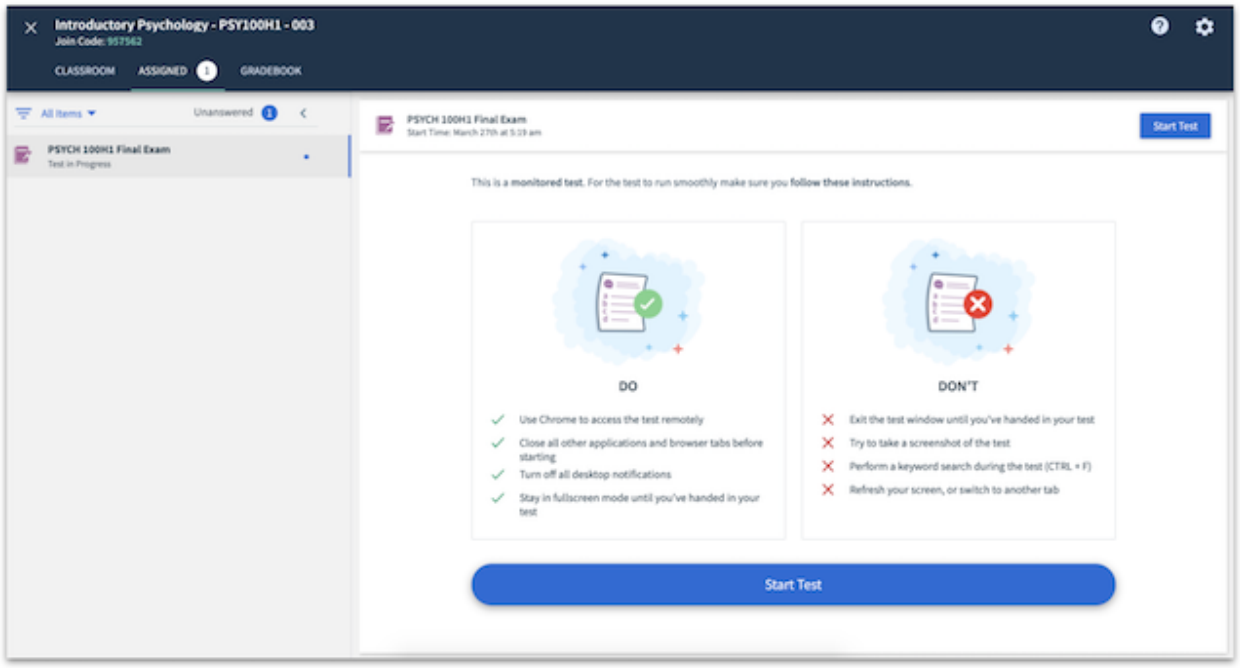
To administer the test, select the test in the content tree and refer to the options above the preview pane. If the instructor requires the test to be available for a specific pre-set amount of time, click "Schedule Test" and input the desired date and times for it to open and close:



To manually open the test to students, click "Start Test." Once the test has begun, it will be highlighted in red in the content tree to indicate that it is currently available to students:



Once a test has been started, students will see it appear in the "Assigned" tab of their course. Prior to entering the test, they will be provided with list of actions to complete and avoid to ensure the test runs smoothly:

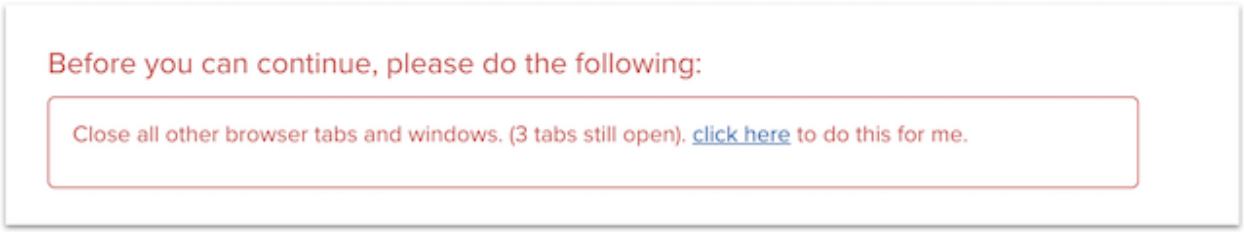


Once a student has started a test, they will first see a detailed technical overview of what the remote proctoring tool will access and restrict:

Before being proceeding to the next screen, students may see warnings if they...

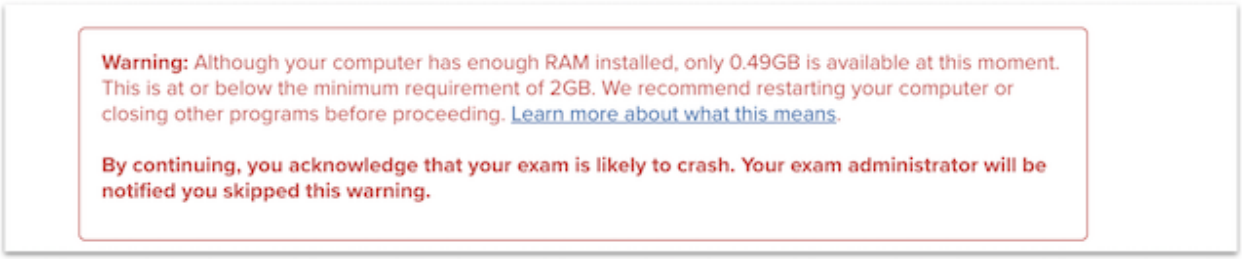
1. Have multiple tabs open

If students see this warning, they simply need to close all tabs except the one in which they have the test open. Students will have a "click here" option to close these additional tabs automatically all at once. Students will not be able to proceed to the next screen until the additional tabs have been closed.



2. Have less than 2 GB of available RAM on their device

If students see this warning, it is recommended that they restart their computers to make more RAM available. Students can ignore this warning and proceed to the next screen, however the instructor will be able to see that they ignored the warning when reviewing the Proctor Report (see below).



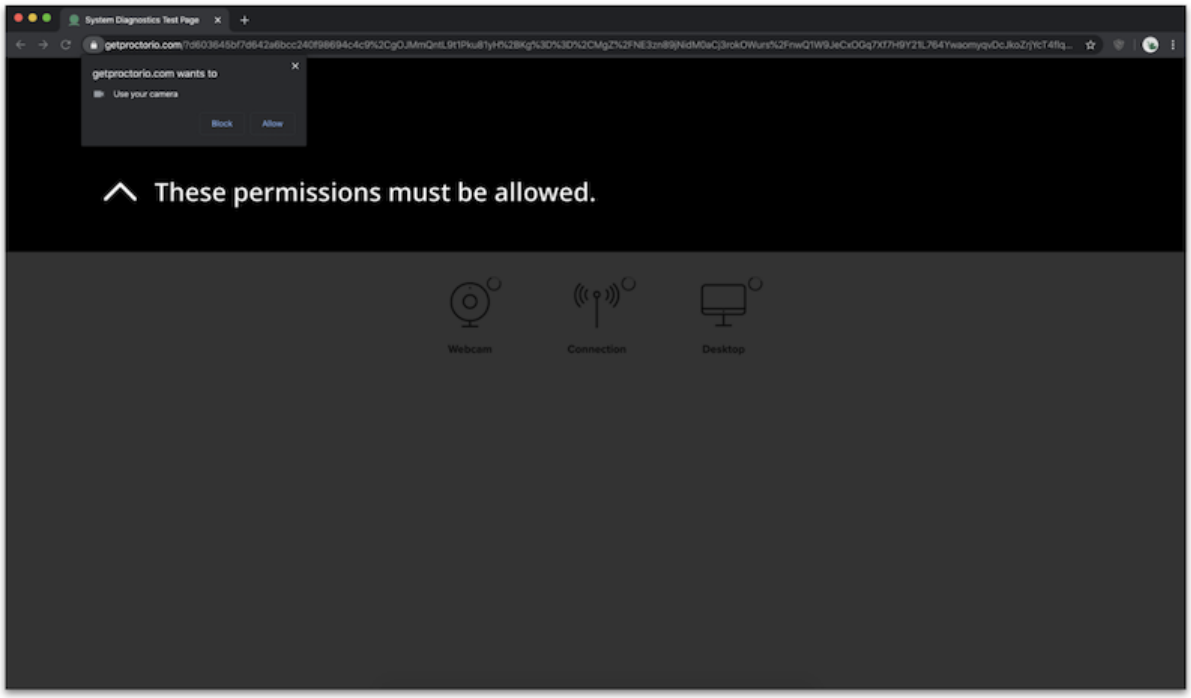
On the next screen, the proctoring tool will run a system diagnostics check to ensure the following:

1. A stable internet connection

If possible, students should connect their computer directly to their router with an ethernet cable to ensure the most stable connection (rather than rely on a wireless connection). This diagnostic can take a few moments to run.

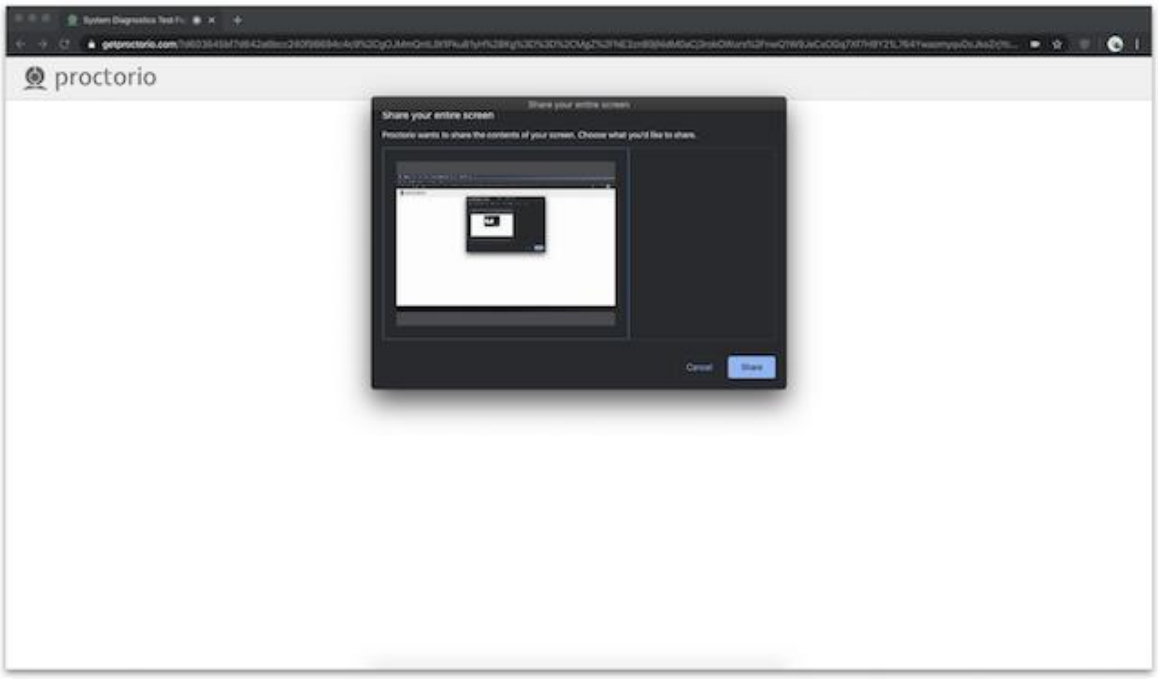
2. Access to the computer's webcam has been enabled

Students will see a pop-up in their browser prompting them to allow webcam access.

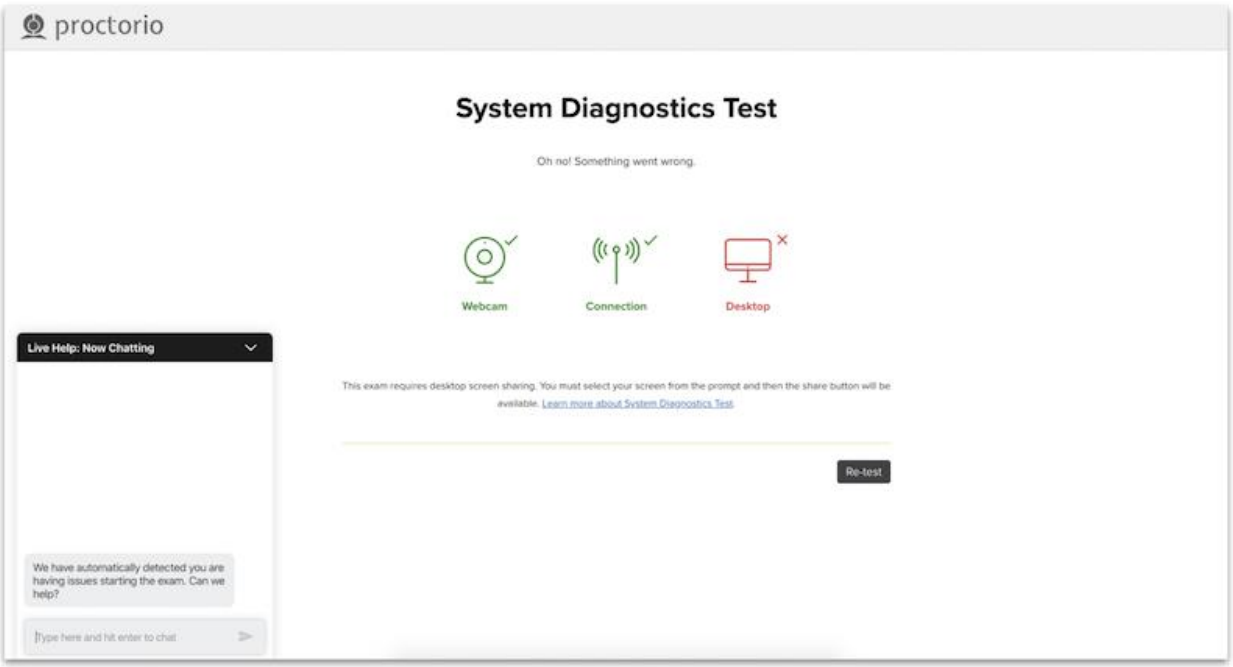


Screen recording has been enabled for the desktop screen

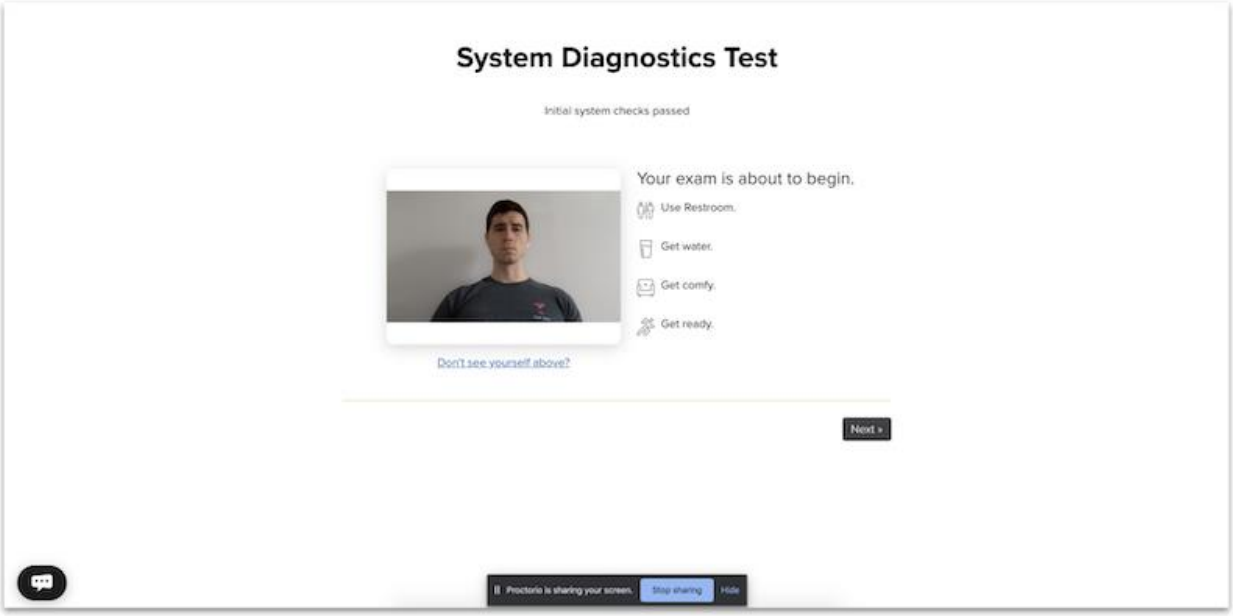
Students will see a pop-up in their browser prompting them to select a screen to record. If the screen recording diagnostics test fails despite following the instructions in the pop-up, students will need to make sure they have allowed permission for screen recording with Google Chrome in their System Preferences (if using a Mac) or their Settings (if using a PC).



If a student fails the diagnostics check three times, a support chat window will automatically open, and a live Proctorio support agent will help the student troubleshoot the issue:



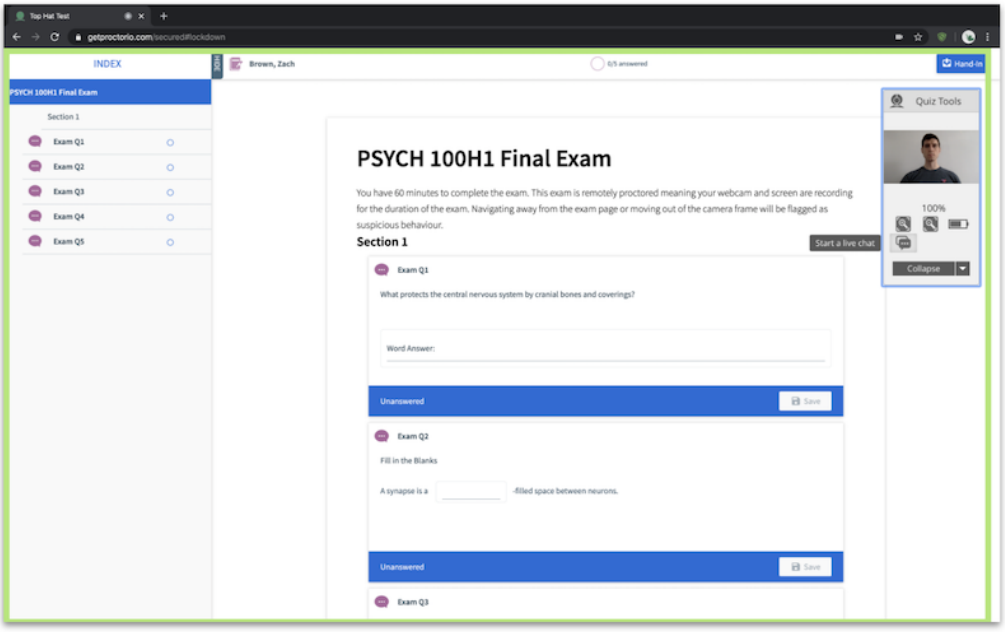
Once the diagnostics check as been passed, the student will be able to proceed to the next screen, where an initial webcam test will be run.



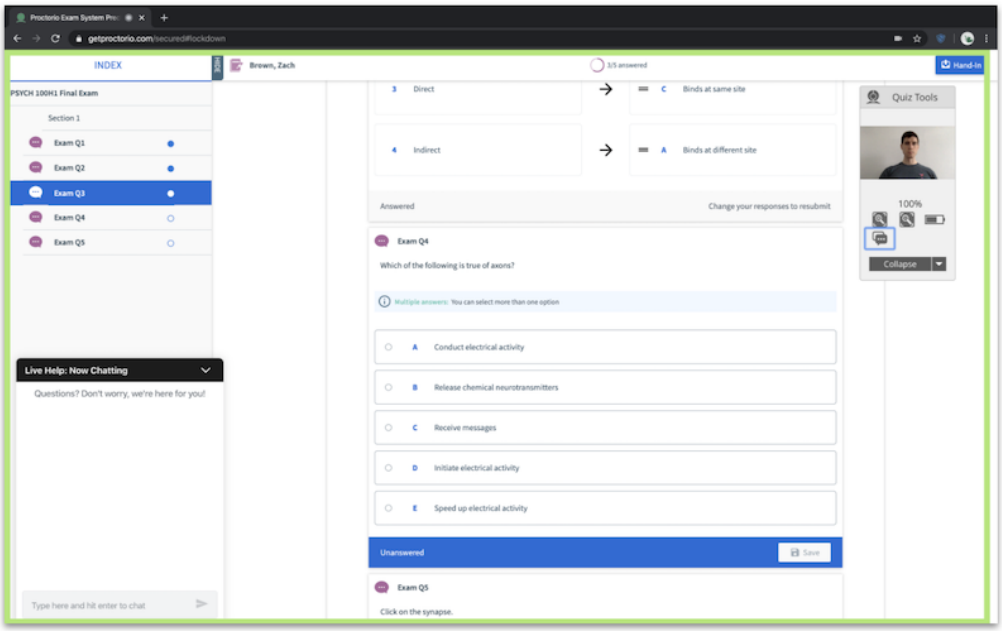
Following the initial webcam check, students will be required to hold up a piece of photo ID to the webcam within the green frame provided. The image of the ID will be automatically captured once the ID is within in the green frame, however students also have the option to capture the image manually. It is best that the student hold their ID card oriented so that their picture has the same orientation as their face.

On the next screen, 5 photos of the student will be taken via the webcam to cross-reference with the photo ID. Using machine learning, the proctoring tool will verify a match between the ID and the webcam photos. Once a match as been verified, the student will be taken to the Exam Agreement page,

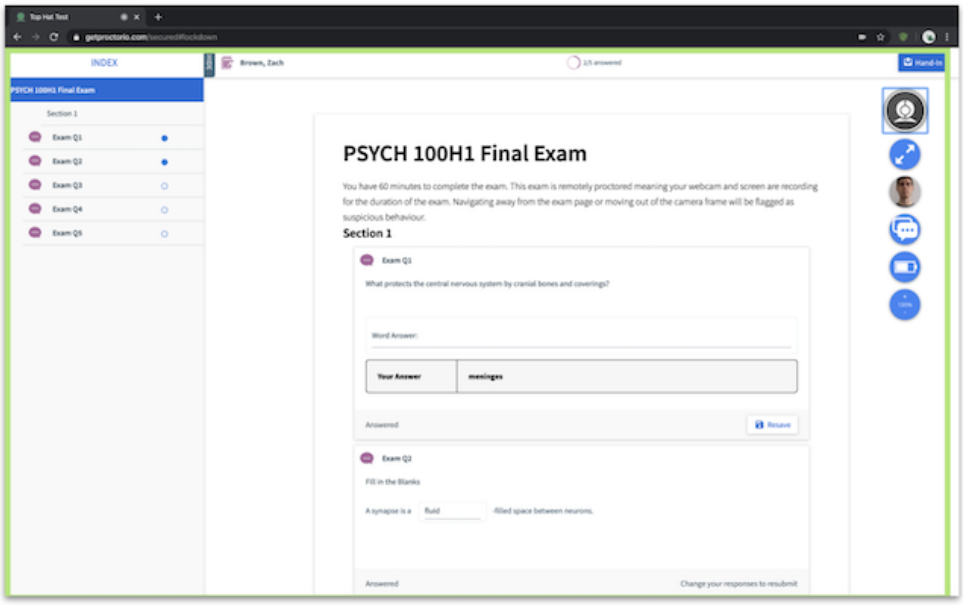
where they will attest to the validity of the identity verification. Clicking "I accept, begin exam now" will allow the student to proceed into the test. Once in the test, students will see the proctoring tool appear as a widget floating above the test screen. The widget shows the webcam recording in real time, so students have a point of reference to avoid moving out of frame or looking away from the test.



Via the widget, students can also open a live chat with a Proctorio support agent for assistance with any technical issues they may experience.

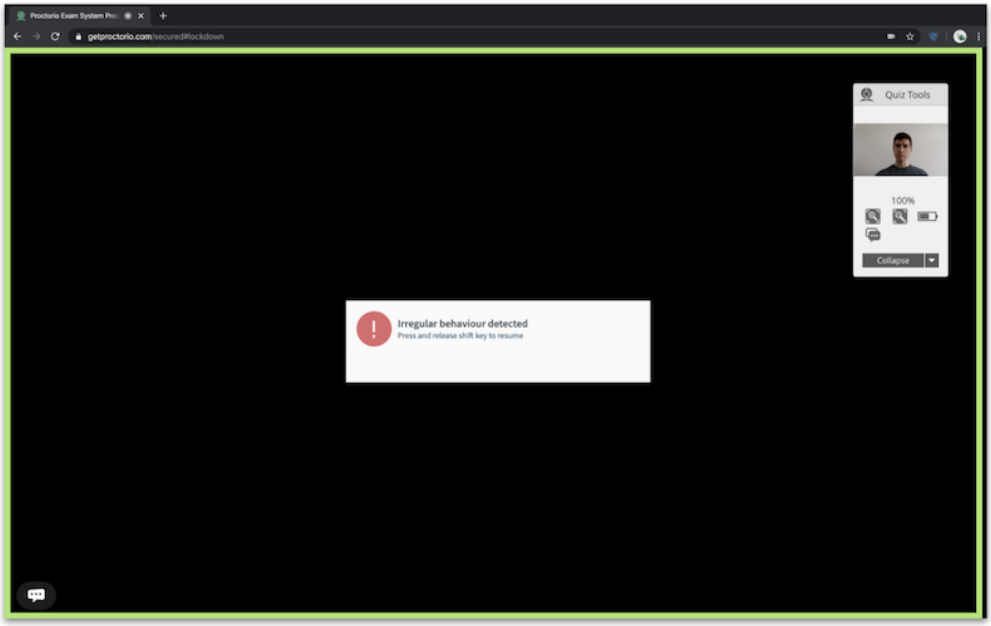


The widget can be collapsed if students need to view more of the test screen. When collapsed, hovering over the widget will reveal the options nested within.



While in the test, students will be unable to open additional tabs in their browser. If students attempt to take a screenshot of the test or navigate to a different browser window, the test screen will become blacked out and will only re-open once the screenshot tool has closed and/or they have returned to the test. The following are classified as suspicious behaviours and will be flagged on the Proctor Report:

- Navigating away from the test screen
- Looking away from the test (head and eye movement)
- Resizing the browser (exiting fullscreen)
- Copy-pasting
- Multiple faces on camera



Students will save their answers to each individual question in the test and hand-in the test once complete. Students will be returned to the "Assigned" tab of the course, where the test will no longer appear. Students can confirm that their test has been submitted by checking their test entry in their Gradebook.

Proctor Report

The Proctor Report catalogs all suspicious behavior exhibited by students during the test for the instructor to review. If administering the test asynchronously, the instructor will want to end the test before viewing the Proctor Report so that no data changes while the instructor reviews it. The test will automatically close if the instructor selected a pre-set a scheduled end date and time. To close the test manually, select the test in the content tree, click "End Test" at the top of the preview pane.

In order to view the Proctor Report, the instructor will need to use a Google Chrome browser with the Proctorio web extension installed. Click "Proctor Report" to open the report in a separate tab. Note: the Proctor Report can take up to 10 minutes to load from the time a test has ended due to video processing speed and volume. If the Proctor Report does not load immediately after a test has ended, then just try checking back in a few minutes.

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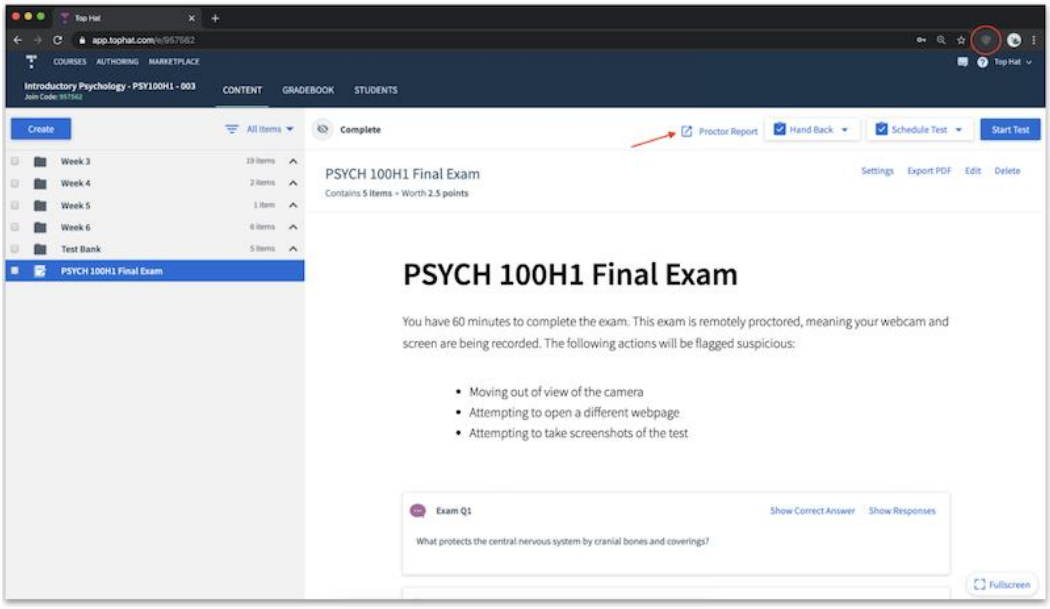
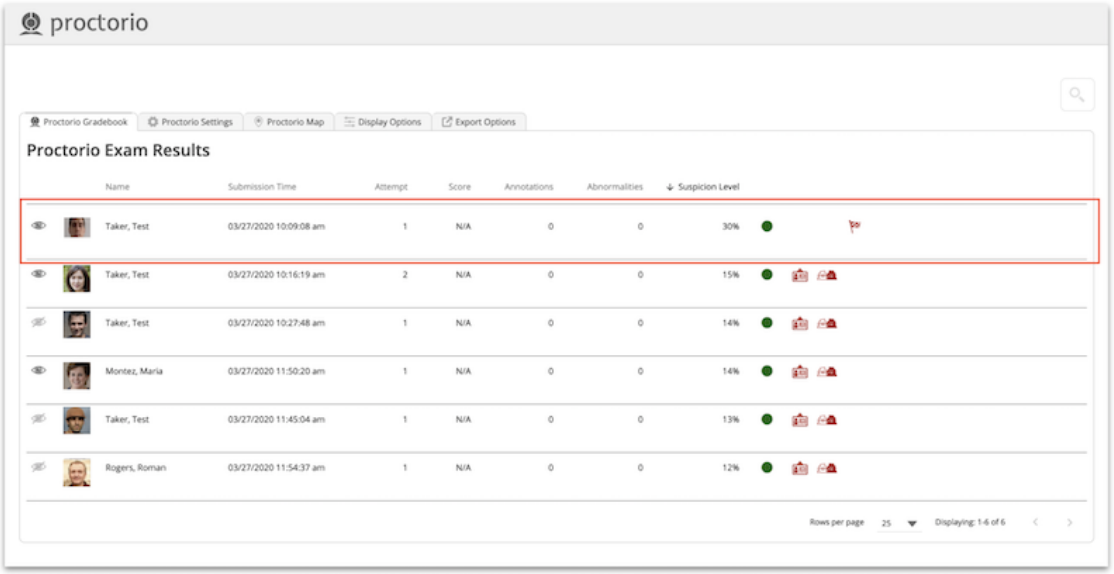
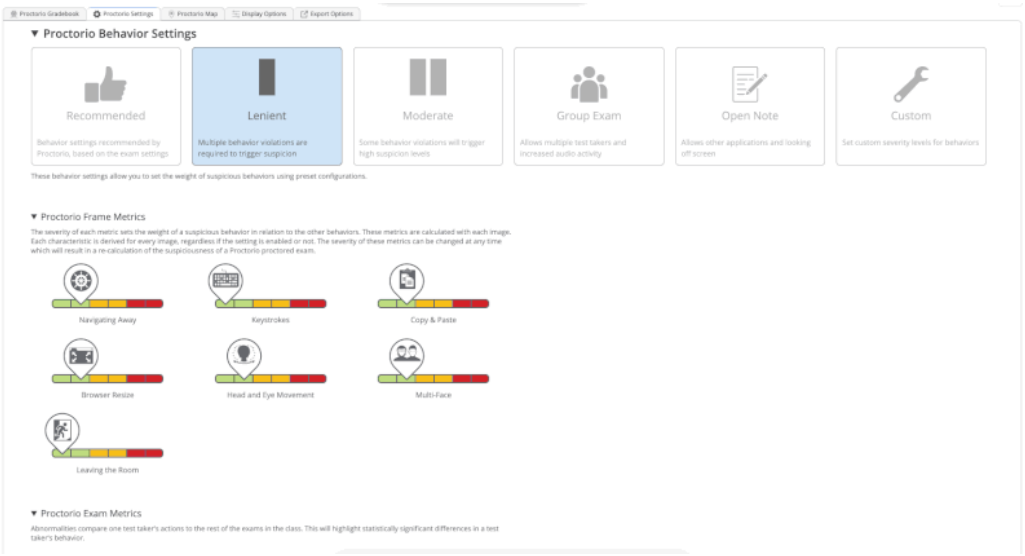


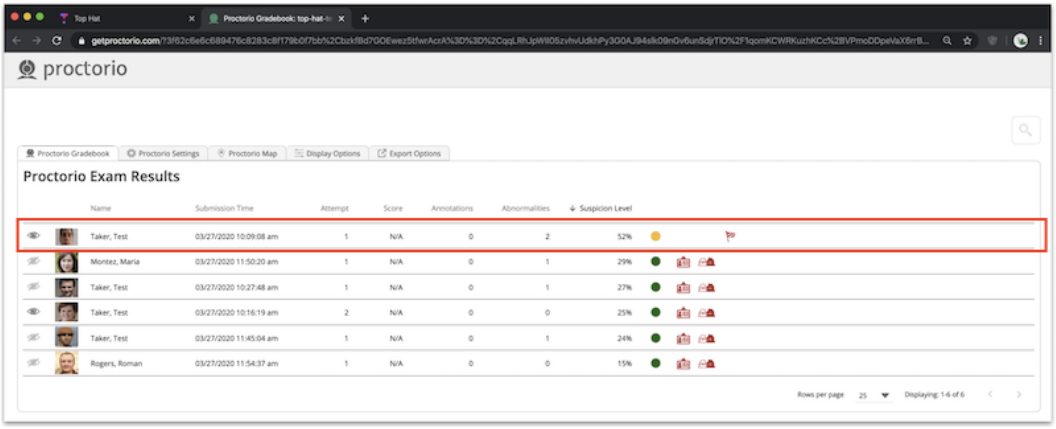
In the Proctorio Gradebook tab, students will be sorted by level of suspicion (with the most suspicious tests appearing at the top).



In the Proctorio Settings tab, the instructor can adjust the metrics for suspicious actions by selecting from 1 of 3 pre-set options (Recommended, Lenient or Moderate) with suspicion thresholds already calibrated (by default, metrics are initially set to the Lenient setting). Alternatively, the instructor can customize the suspicious metrics by adjusting the slide rules to their preferred calibration and even adjust these settings dynamically to gauge sensitivity.

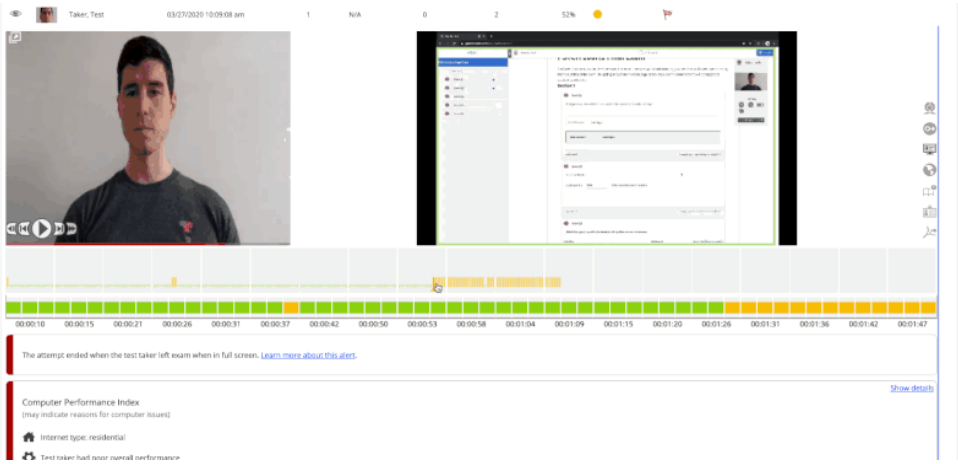


After adjusting the metrics, the suspicious level of each student will have changed accordingly on the Proctorio Gradebook tab. For example, the student that was at a 30% suspicion level on the Lenient setting has now changed to 52% to reflect the customized metrics.

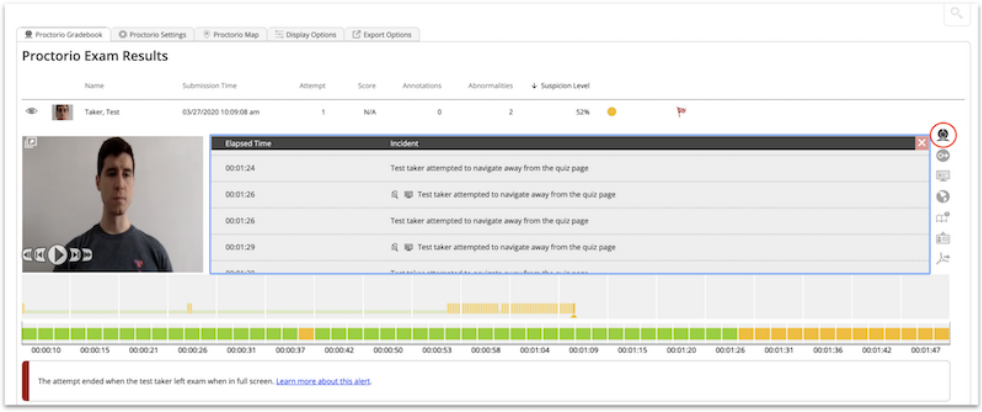


The instructor can click into any student's entry to open up a breakdown of their test recording. The color-coded timeline beneath their results will show when during their test a student exhibited suspicious behavior (yellow indicates moderately suspicious behavior, red indicates severely suspicious behavior) based on the metrics in the Proctorio Settings tab. The instructor can play through the entire timeline or click on a specific point in the timeline to view the recording of both the student's screen and the student's face at that specific moment.

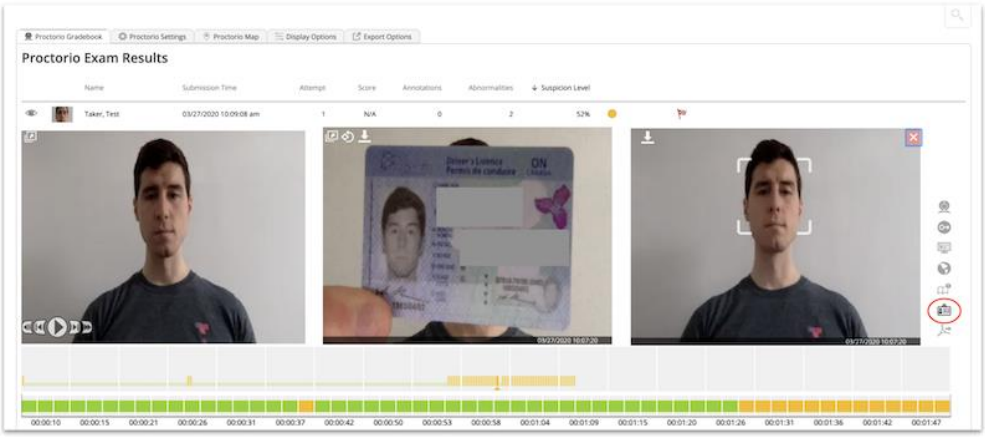
The proctoring report will flag students who had the same IP address when taking the exam, which may indicate collusion (or may just indicate that 2 students are roomates and share the same internet portal). The proctoring report will also show when each student at the IP address began and ended the exam.



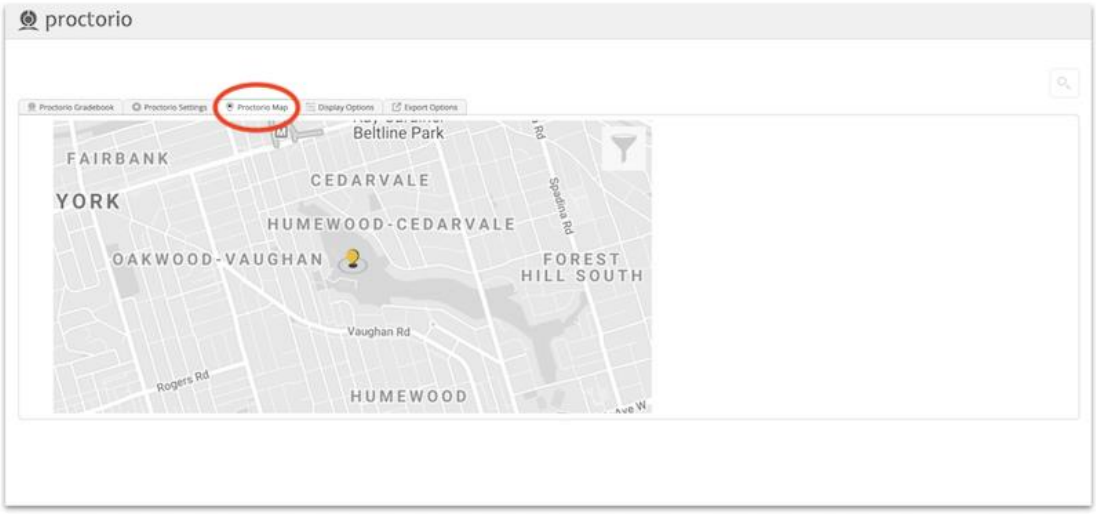
The instructor can review the Incident Log by selecting the webcam icon on at the top of the menu on the right. The Incident Log provides the instructor with a detailed breakdown of every action a student took while taking the test.



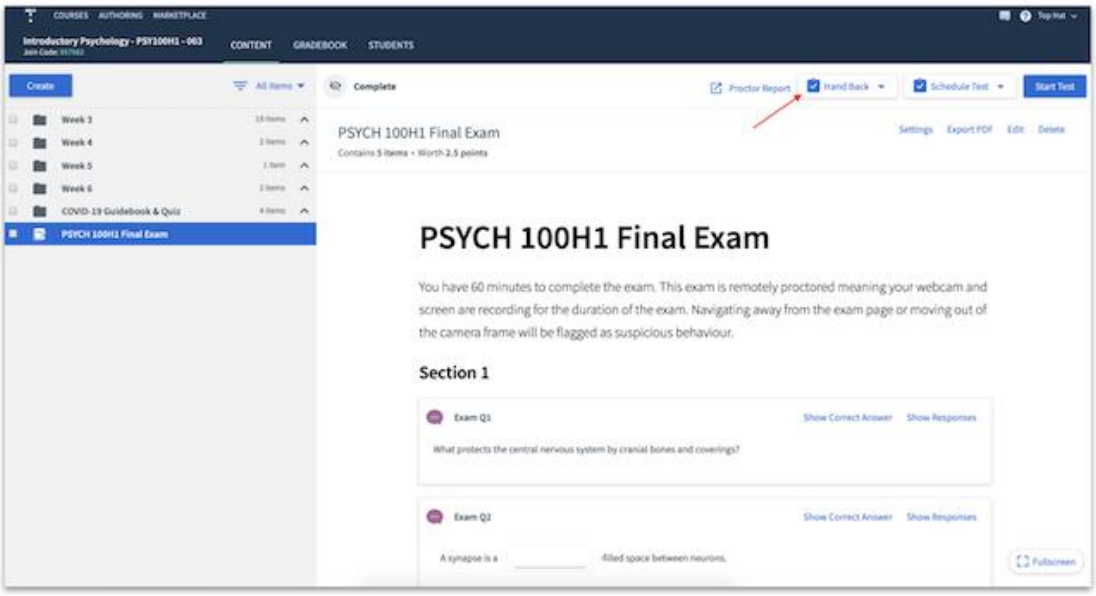
The instructor can review a student's photo identity verification by clicking the ID card icon in the menu on the right.



The instructor can view a student's geolocation at the time they were taking the test in the Proctorio Map tab.



Once the instructor is satisfied from reviewing the proctor report, the instructor can hand the test back to the students so they can review their responses relative to the correct answers. To hand back the test, navigate to the content section of your course, select the test in the content tree and click "Hand Back" at the top of the preview pane. The instructor can choose to hand back the set immediately, or to pre-set a time that the instructor desires the test to be handed back. The instructor also has the option to include an end date for the hand back period, after which the test would disappear from student view. The instructor can then re-enable access to the Gradebook for students via Course Settings and/or direct the students to Blackboard to see their final test grade (eg after implementing a curve).



Utilizing TopHat Test for Proctored Exams and Quizzes

Bentley Coffey and Jan Bass 4/3/2020

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Additional Links

- TopHat Support: https://success.tophat.com/s/contact-main
- For those new to TopHat who are considering using it in our new remote teaching environment: https://support.tophat.com/s/article/COVID-19-Teaching-Remotely-with-Top-Hat
- For those with a familiarity with TopHat but are unfamiliar with its testing feature: https://tophat.com/blog/prevent-exam-cheating/
- For detailed steps in creating and administering a remote test in TopHat: https://success.tophat.com/s/article/Teaching-Online-Remotely-Proctored-Tests
- For detailed steps in creating and administering an in-person test in TopHat: https://support.tophat.com/s/article/Professor-Getting-Started-With-Top-Hat-Test