

Anatomy and Physiology Revealed: Psychology

Implementation Guide

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Section 1: Background

1. What is APR: Psychology?

APR (Anatomy and Physiology Revealed) was initially created for the Anatomy and Physiology course as a virtual cadaver dissection tool, and has been in use for more than a decade in many anatomy and physiology classrooms throughout the country. The APR: Psychology tool you are using today has been adapted from the original version to make it more relevant and student-friendly for the Introductory Psychology classroom.

2. Why should I use APR in my classes?

As the second most common college course in the United States, enrolling between 1.2 and 1.6 million students annually (<http://www.apa.org/ed/governance/bea/intro-psych-report.pdf>), Introductory Psychology is largely responsible for teaching students about the connection between the brain and behavior. As research into genetics, neuroscience, and other related fields has grown more sophisticated, the scientific study of the brain and nervous system has become increasingly important.

Many of today's college students are planning careers in a medical or related field (CITE). An emphasis on the biological basis of behavior can be seen in the program requirements and entrance exams for the most popular of these professions. For example, The Medical College Admission Test® (MCAT®), developed and administered by the AAMC, is a standardized, multiple-choice examination created to help medical school admissions offices assess problem solving, critical thinking, and knowledge of natural, behavioral, and social science concepts and principles prerequisite to the study of medicine. The MCAT® began including a section on psychology in 2015. Additionally, nursing programs regularly require psychology in their curriculum and in preparation for students to sit for the NCLEX-RN exam (https://www.ncsbn.org/RN_Test_Plan_2016_Final.pdf). Therefore, a strong background in biological psychology is highly beneficial to today's students.

Although we recognize its importance, one of the primary challenges of teaching the brain and nervous system is its complexity. Students are faced with overlapping structural and functional brain regions and have difficulty grasping the electro-chemical basis of biological psychology. Additionally, many psychology professors have had little formal training in neuroscience, and the rapid pace of development ensures that many faculty teaching Introductory Psychology are not aware of cutting-edge advancements in the field.

This is where APR: Psychology is designed to be different. APR: Psychology provides students with detailed visual imagery, in the form of real brain images, cross-sectional views, animations, and more. Additionally, Lab Activities in Connect® (see info below) provides students with real-

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world scenarios to anchor abstract concepts to everyday experience. APR: Psychology allows students to see the connection between structure and function in a clear and potent way, which promotes deep and meaningful learning.

One of the major advantages of APR: Psychology is its ease of use, regardless of class modality. In a traditional face-to-face class, faculty can use APR: Psychology for in-class demonstrations and animations. Students can complete assignments for homework or use it as a study tool throughout the semester. In online and hybrid classes, students can complete study modules and assignments using APR: Psychology and faculty can use screencast software to record dynamic lectures and demonstrations. Regardless of your role, level of experience, class size, or method of delivery, APR: Psychology offers a way for students to learn about the biological aspects of behavior.

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Section 2: How do I access and assign APR: Psychology Lab Activities?

There are three primary ways to use APR: Psychology in the Introductory Psychology curriculum.

1. Connect: Pre-made Lab Activities

The first, and most straightforward, is by assigning the pre-made Lab Activities within the chapter content in Connect. The Lab Activities cover a variety of key topic areas within the Introductory Psychology curriculum and are designed to serve as complete stand-alone activities, or they can be combined with other Connect assets to create a more in-depth assignment series. Throughout the semester, each Lab Activity will reinforce the concepts initially introduced in the Brain and Biology section of the class, while applying the information to additional topics covered in the course. List of assignments by chapter: (Note: the following is aligned to King, *The Science of Psychology*; table for Feist/Rosenberg, *Psychology* is forthcoming)

CHAPTER	ACTIVITY
1: What is Psychology?	Navigating the Brain
3: Biological Foundations of Behavior	Fight or Flight
	Phineas Gage
	Mirror Neurons
	Neural Communication
4: Sensation and Perception	The Visual Pathway
	Reaction Time
	Phantom Pain
	Gestalt and the Organization of Perception
5: States of Consciousness	Arousal
	Sleep
6: Learning	Training Methods
	Insight Learning
	Classical Conditioning
7: Memory	Memory
	Memory Creation and Retention
8: Thinking, Intelligence and Language	Gestalt and the Organization of Perception
9: Human Development	Morality
	Infant Vision
	Brain Shrinkage
10: Motivation and Emotion	Drive Theory
12: Personality	Phineas Gage and Personality
13: Social Psychology	Stereotypes and Prejudice
14: Industrial and Organization Psychology	Training Methods
15: Psychological Disorders	Obsessive-Compulsive Disorder
	Panic Disorder
	Desensitization
16: Therapies	Aversion Therapy
	Electro-convulsion Therapy
	Cognitive Behavior Therapy
17: Health Psychology	Diabetes
	Burn-out
	Stress

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a. Key features

Each Lab Activity includes a brief introduction to the topic and incorporates a scenario, or story, to frame the content. For instance, in the Memory chapter (as of 2017), you will find the following opening scenario:

Psych Lab Activity: Memory

You have endless things you are attempting to both memorize (store in memory) as well as remember (recall): your class schedule, whether you have homework for intro psych tonight, the name of those people your friend introduced you to last night, your multiple passwords and what they are for, where you put your phone . . . the list goes on and on!

How does your brain store and recall all of those items? Memory is an extremely complex system or process by which the products or results of learning are stored for future use. Psychologists are still working to understand the many intricacies of memory. In this lab, we will look at the role of the brain as information is move through short-term memory, working memory, engrams (an early stage of long-term memory), and long-term memory.

Consider this scenario: Dante needs to learn the names of the Great Lakes for his geography class.

References

Section Break

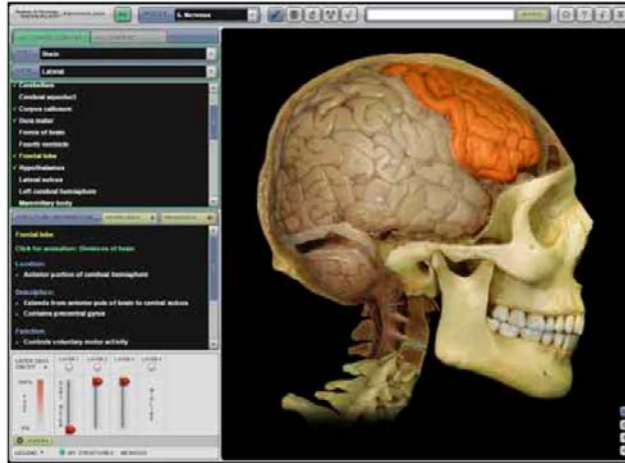
Psych Lab Activity: Memory

Using a series of brain images, students visualize key anatomical structures as the scenario progresses. The functional purpose of each structure is explained and reinforced in the context of the story. Throughout the assignment, student learning is assessed with a variety of questions, which can be fully customized by the instructor. Links to the full APR: Psychology site accompany each image, inviting students to explore further, if desired.

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The Prefrontal Lobe and Short-Term Memory



In general, information in short-term memory lasts from about 10 to 20 seconds, after which it is lost if not transferred to long-term memory. The prefrontal lobe or cortex, which is the inferior portion of the frontal lobe (highlighted above) is heavily involved in short-term memory. The prefrontal lobe is activated in imaging studies conducted on short-term memory in humans.

You can explore this in APR Psychology [by clicking here](#) or by navigating to: Nervous > Dissection > Topic: Brain > View: Lateral > Structure: Frontal lobe

Dante looks up the names of the Great Lakes in his textbook. He scans them, and repeats them over and over again in his head while he pulls out a set of notecards to make flash cards. Which type of memory and what part of his brain are being used?

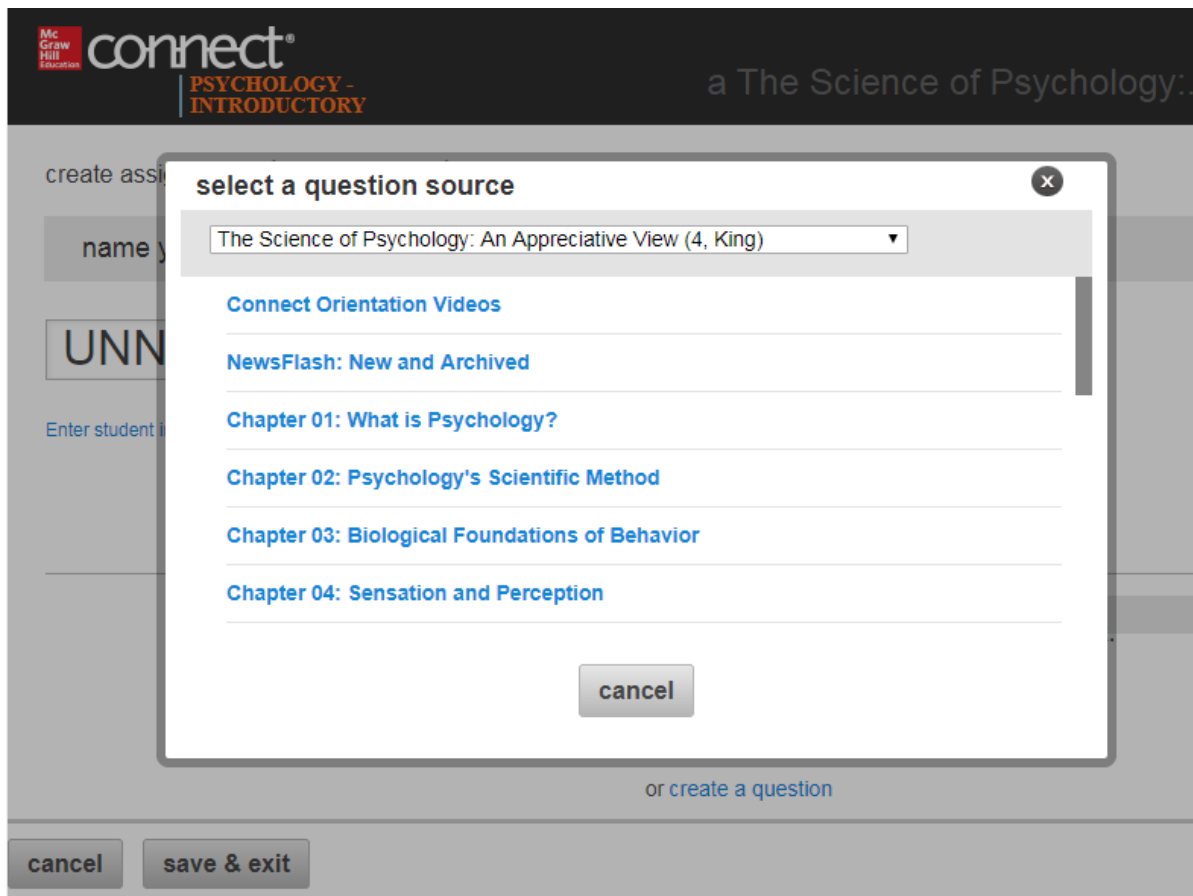
- working memory/prefrontal lobe
- short-term memory/prefrontal lobe
- short-term memory/parietal lobe
- working memory/parietal lobe

b. How to assign

To assign a Lab Activity, begin by accessing your Connect home page. Click on “Add Assignment,” and then select “Question Bank.” From there, select the chapter for the assignment you would like to review. Click on “Full Chapter” to review all assignments available for that chapter.

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The screen will then show a list of all activities available for the selected chapter. The activities that include APR: Psychology are labeled as “Psych Lab Activity” in Connect. The activity name will be given, followed by a list of questions accompanying the assignment. Clicking on the assignment (or any of the questions) will expand the item to give a full preview. Toggle between viewing “list” or “individually” to see details of each assignment or question.

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results: 10

add random selection... add (0) checked question ↓

questions	question type	<input type="checkbox"/>
Psych Lab Activity: Memory	Section Break	<input type="checkbox"/>
The Prefrontal Lobe and Short-Term Memory	Multiple Choice	<input type="checkbox"/>
The Parietal Lobe and Working Memory	Multiple Choice	<input type="checkbox"/>
The Hippocampus, Amygdala, and Memory Engrams	Multiple Choice	<input type="checkbox"/>
The Brain and Long-Term Memory	Multiple Choice	<input type="checkbox"/>
Memory m	Short Answer	<input type="checkbox"/>
Psych Lab Activity: Memory Creation and Retention	Section Break	<input type="checkbox"/>
The Cortex and Memory	Multiple Choice	<input type="checkbox"/>
Encoding and Recall: The Hippocampus	Multiple Choice	<input type="checkbox"/>
Long-Term Memory through Long-Term Potentiation	Multiple Choice	<input type="checkbox"/>
Eidetic (Photographic) Memory and the Brain	Multiple Choice	<input type="checkbox"/>
Forgetting, Amnesia, and the Brain m	Short Answer	<input type="checkbox"/>

Clicking on the “Section Break” for each assignment will select all questions related to that assignment. Click on “add ___ checked questions” at the top of the page to select the APR assignment and its associated questions. “Add as individual questions” will assign each question to every student. If you do not want to add all the questions in the series, simply un-check the questions you do not want to add. **Note that items with an “m” indicate manual grading is required.**

Once you have selected the desired Lab Activities and their associated questions, return to the top of the page and click on the “organize assignment” tab. Here, all the activities and questions chosen for the assignment will be listed, along with their associated point values. You can return to the full list of available activities at any time by clicking on the “add questions” tab.

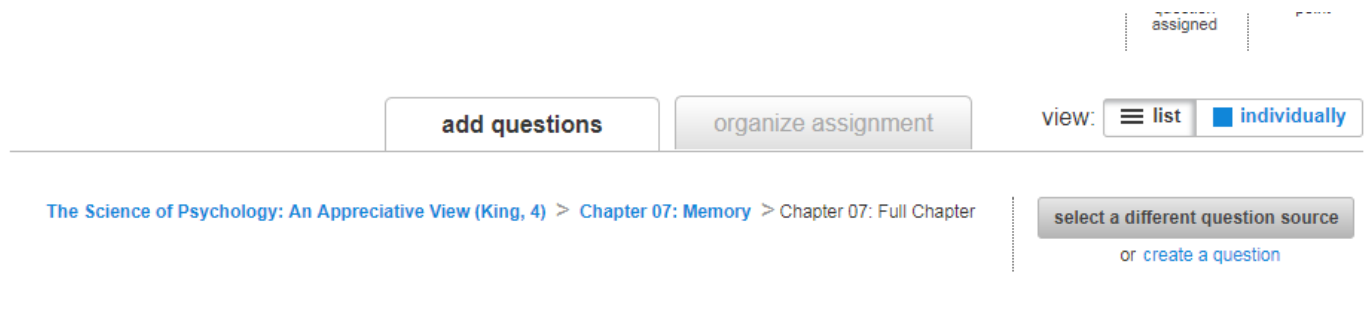
- c. How to edit/change questions, add own questions, and assign

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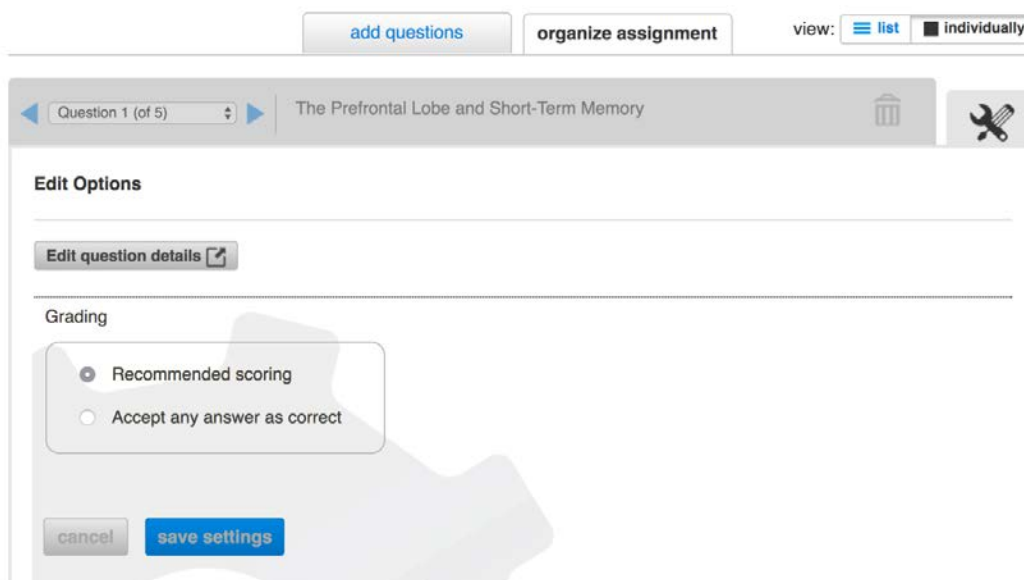
Questions within the APR activities can be edited to better suit your specific classroom needs, or you can add your own questions.

To add your own question to an assignment, return to the “add questions” tab and click on the highlighted text for “or create a question” (found under the gray “select a different question source” button).



You can then select the type of question you would like to create (multiple choice, fill in the blank, true/false, etc.) and follow the prompts to create the question. After the question has been created and saved, it will appear in the list of assigned questions.

If you would like to edit a question within an assignment, begin by going to the “organize assignment” screen. Click on the question you would like to edit to expand it. At the top of the question window, you will see an icon tab that looks like a screwdriver and a wrench. Clicking that icon will change the view to allow question editing. Click on the “edit question details” button to bring up the question editor. Note that the editor may open in a different browser tab or window, depending on your computer settings.



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Once you have finalized your edits, click “save,” and return to the assignment.

Finally, you can change the point values for each question individually by changing the value in the box next to each question (the default value is 10 points per question), or you can set the desired total for the assignment as a whole by clicking on the “set all point values” text at the top of the assignment. This will distribute the total number of available points evenly across all assigned questions.

Once your assignment is complete, click on the “continue” button on the bottom right. From here, you will be able to customize many aspects of the assignment, such as late penalties, number of attempts, and the type of feedback given to students upon completion.

2. Connect: Anatomy and Physiology Question Bank

The Anatomy and Physiology Question Bank offers another way to incorporate anatomy and physiology-based activities into your Connect work. Unlike the pre-made Lab Activities, the Question Bank does not include full scenarios or stand-alone exercises relating the material to psychological concepts. These questions are strictly about the anatomy and terminology. The Question Bank includes a series of questions designed to be combined to create a single assignment or included within other assignments. Question types include animations (with attached assessment questions), labeling, short-answer, classification, sequencing, and more.

d. Key features

The Question Bank can be used to incorporate additional questions into a pre-made or custom assignment within Connect. This Question Bank is divided into seven modules related to human anatomy, as follows:

1. Body Orientation
2. Cells and Chemistry
3. Tissues
4. Muscular System
5. Nervous System
6. Endocrine System
7. Reproductive System

The advantage of this system is that it allows concepts to be reinforced throughout multiple chapters, rather than focusing content within one specific chapter of the text. This leaves the instructor free to incorporate concepts from any functional area within any chapter. For example, you may wish to use questions from the Reproductive System section in the Human Sexuality and Gender chapter, but would also like to incorporate elements of the nervous system

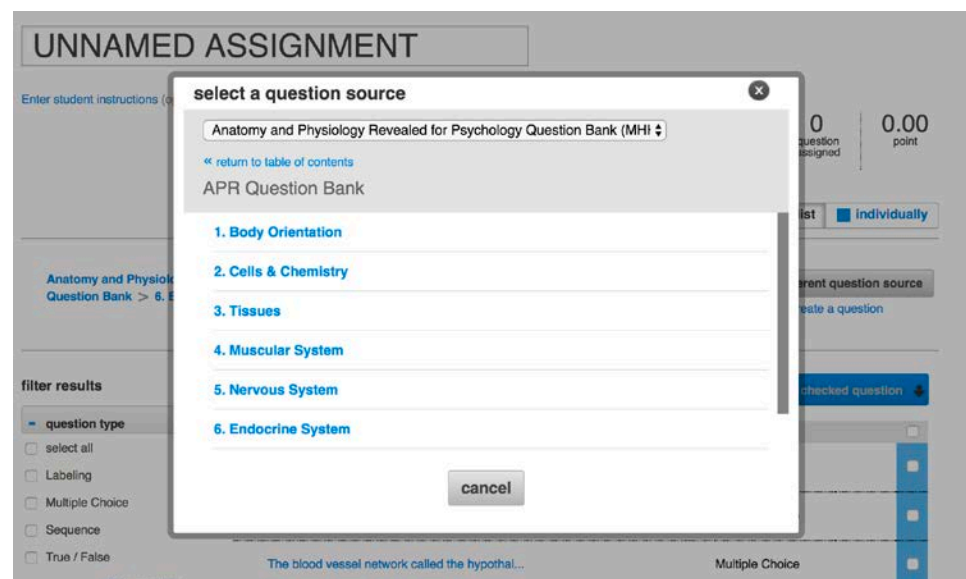
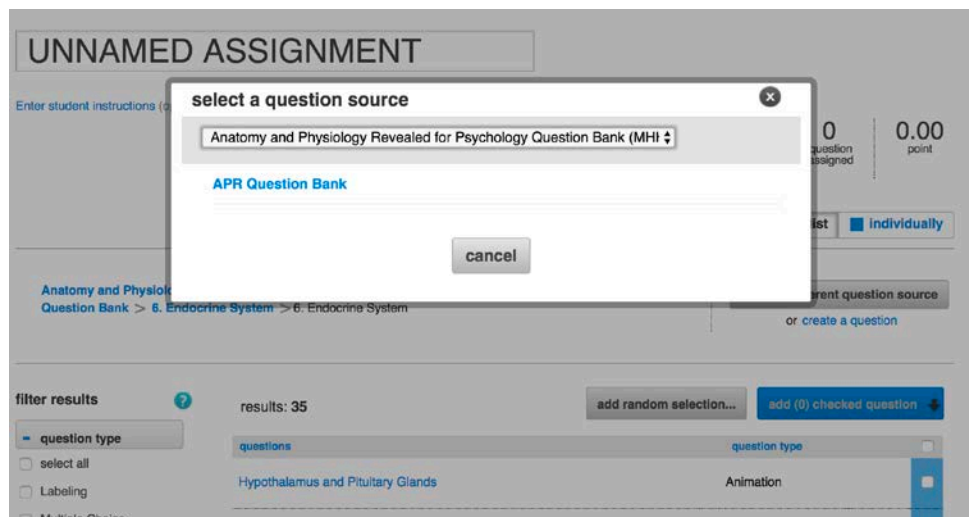
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and endocrine system into the assignment. This organization system allows you to do that with ease.

e. How to assign

To assign APR Question Bank items, begin by accessing your Connect home page. Click on “Add Assignment,” and then select “Question Bank.” From there, locate the drop-down menu for the question source, and select “Anatomy and Physiology for Psychology Question Bank and then “APR Question Bank.” You will see the Module categories representing body systems/structures. Select a category and you will then see all assignments available for that body system.



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The activity name will be given, followed by a list of questions accompanying the assignment. Clicking on the assignment (or any of the questions) will expand the item to give a full preview. Toggle between View: “list” or “individually” to see details of each assignment or question.

The screenshot shows the courseware interface. At the top, there are buttons for "add questions" and "organize assignment", and a view toggle set to "individually". Below this is a breadcrumb trail: "Anatomy and Physiology Revealed for Psychology Question Bank (Coursewide Content, MHHE) > APR Question Bank > 5. Nervous System > 5. Nervous System". A button "select a different question source or create a question" is also visible. The main area shows "filter results" on the left with a "question type" filter set to "select all". Below the filter are buttons for "Activity Type", "APA Outcome", "Bloom's", "Learning Objective", and "Topic". The main content area shows "results: 96" and a table of questions. The table has columns for "questions" and "question type". The questions listed are:

questions	question type
Neuron/Alzheimer's Disease	Animation
Memories form in the	Multiple Choice
The first sign of Alzheimer's is	Multiple Choice
Treatment for Alzheimer's targets acet...	Multiple Choice
Alzheimer's is thought to be caused by	Multiple Choice
An Alzheimer's patient experiencing ex...	Multiple Choice
Action Potential Generation	Animation
When a neuron cell membrane is at resting po...	Multiple Choice

Clicking on the “Section Break” for each assignment will select all questions related to that assignment. Click on “add ___ checked questions” at the top of the page to select the assignment and its associated questions. “Add as individual questions” will assign each question to every student. “Add as a pool” will allow you to choose a number of questions from a designated pool to assign at random for each student. If you do not want to add all the questions in the series, simply un-check the questions you do not want to add. **Note that items with an “m” indicate manual grading is required.**

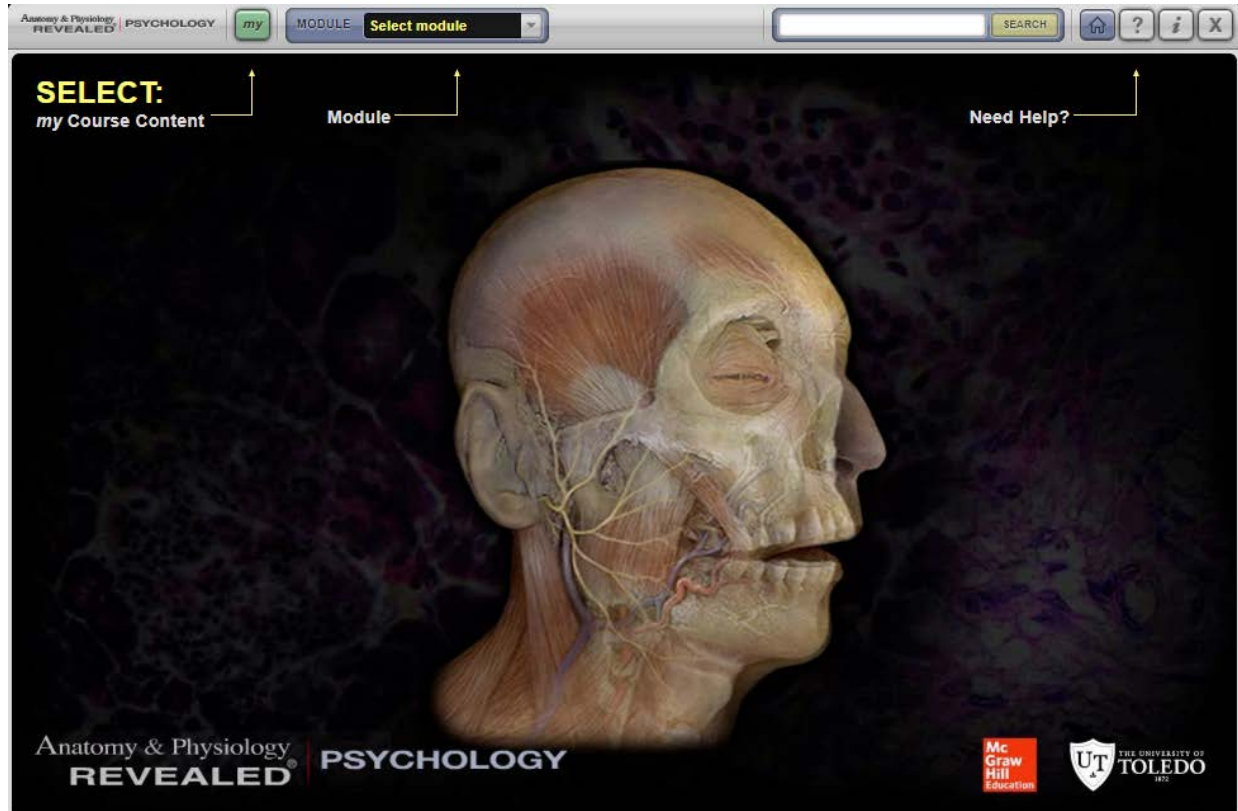
Once you have selected the desired activities and their associated questions, return to the top of the page and click on the “organize assignment” tab. Here, all the activities and questions chosen for the assignment will be listed, along with their associated point values. You can return to the full list of available activities at any time by clicking on the “add questions” tab.

f. How to edit/change questions, add own questions, and assign
Please see “How to edit/change questions, add own questions, and assign” section under Section 2.1.c

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3. Full Site: Anatomy and Physiology Revealed: Psychology



a. Key features

Access to the full Anatomy and Physiology Revealed: Psychology site has been made available within Connect to allow instructors and students to explore additional resources available in the full site. The site is highly detailed, with sections containing dissections, animations, histology, imaging, and quiz questions. The site is organized by functional/body systems. Note that there is variability in the resources available for each module (see chart below).

To access the full APR: Psychology site, navigate to your Connect homepage. On the right-hand side of the page, you will see a button that says “APR: Psychology.” Clicking the button will cause a new webpage (or tab) to open. If you have a pop-up blocker enabled, you will be prompted to disable it.

b. Modules and Structures/Systems

On the home screen for APR: Psychology, there is a pull-down selection menu for Modules on the top left of the screen. Here, you can choose which of seven body-system modules you would

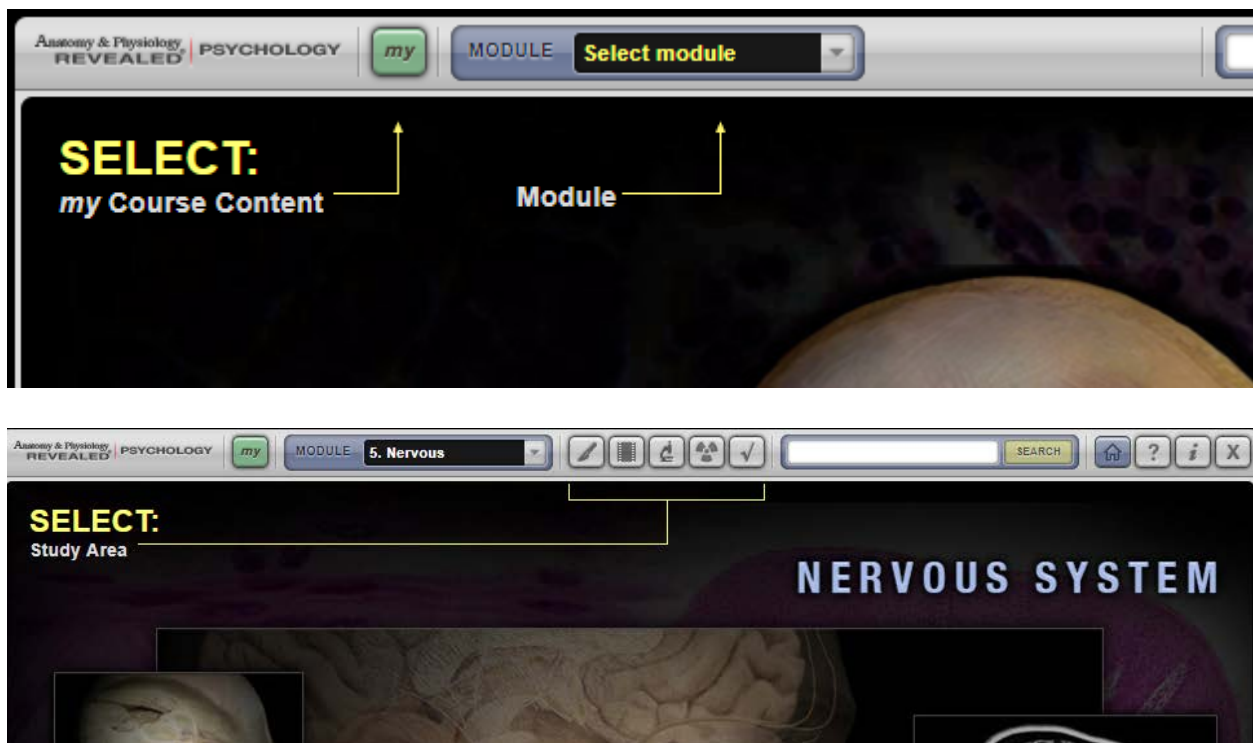
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like to explore. Note that within each Module, there are a variety of available resources. The following table shows what resource is available for each Module.

	Dissection	Animation	Histology	Imaging	Quiz
Body Orientation	x				x
Cells and Chemistry	x	x	x		x
Tissues		x	x		x
Muscular		x	x		x
Nervous	x	x	x	x	x
Endocrine	x	x			x
Reproductive		x			x

Once you select the Module, you will be prompted to select the study area. The available selections will change based on the availability for each area.

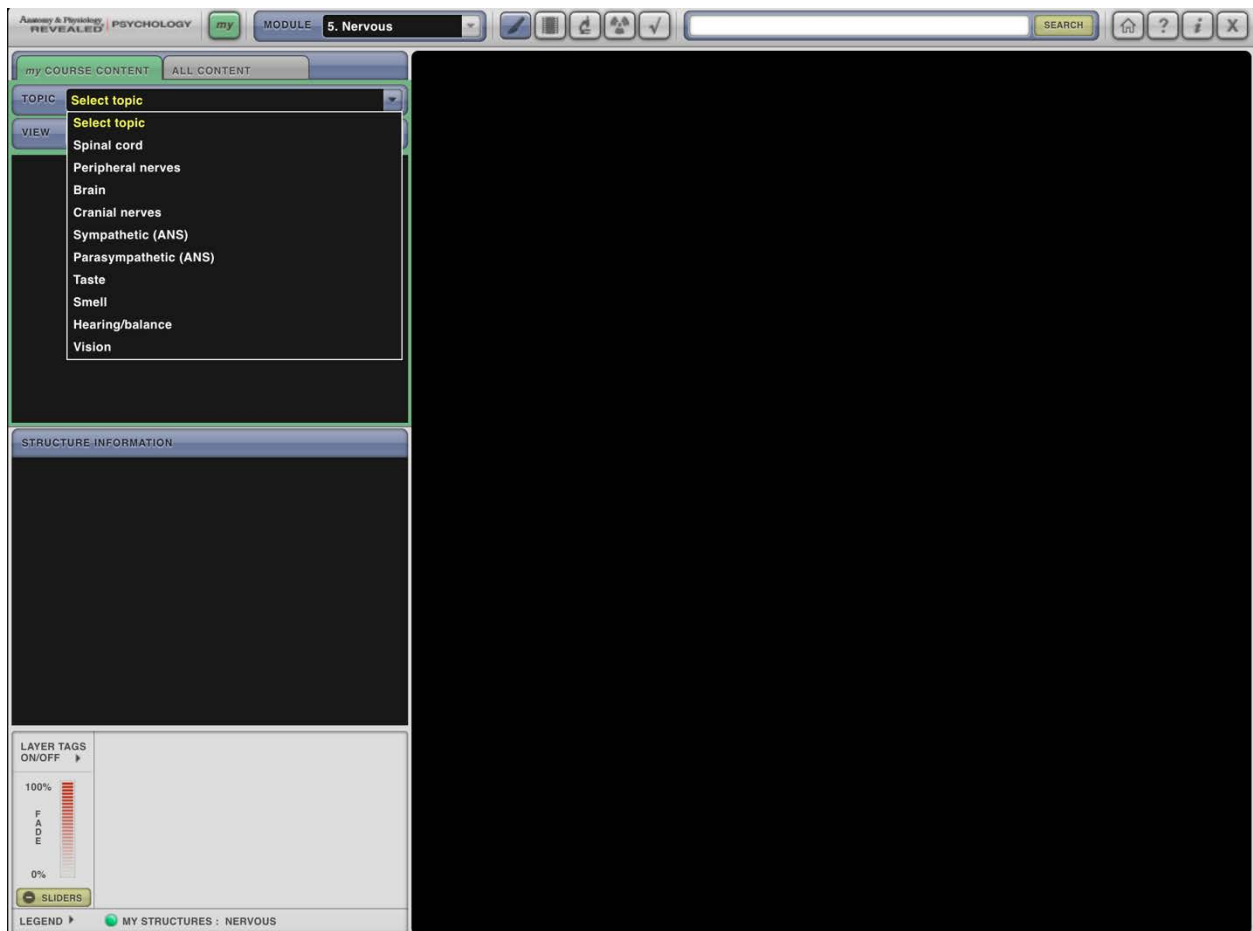


- c. Different views
 - i. Dissection mode (available in Body Orientation, Cells and Chemistry, Nervous, Endocrine)
 - 1. Topic, view, and structure information

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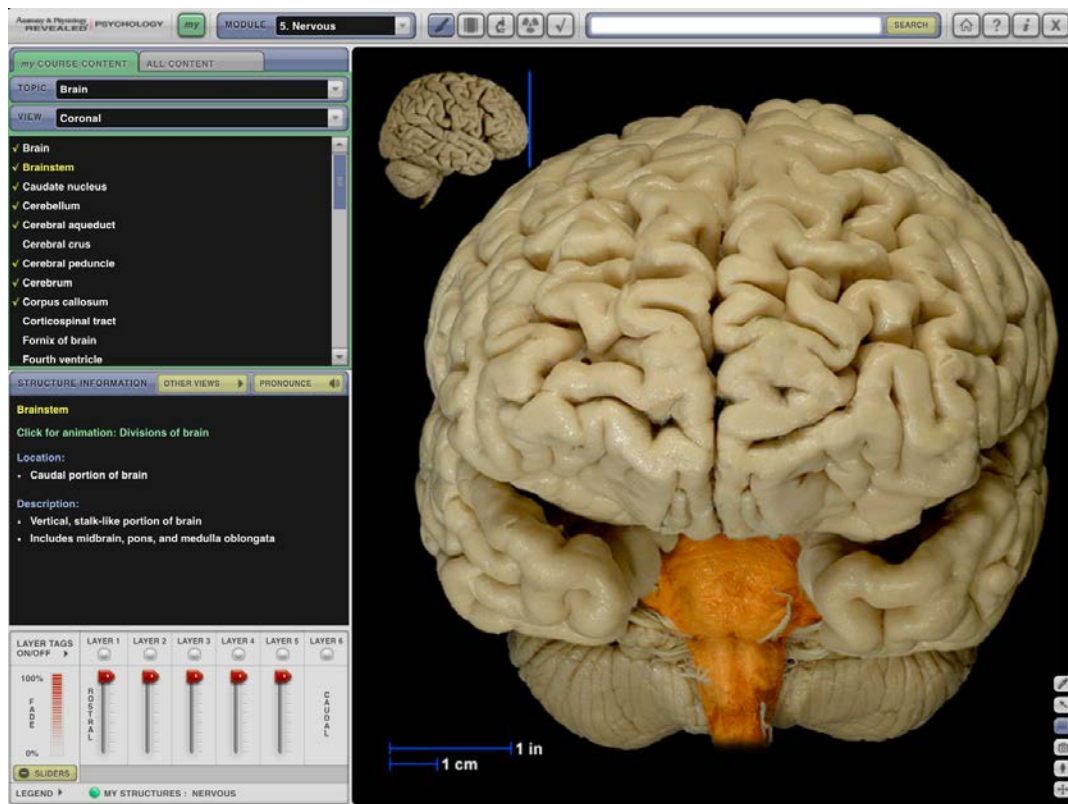
The first available view mode is Dissection Mode (note that Dissection Mode is not available for all Modules). Clicking on the small dissection icon will bring up a fairly empty page with “Select Topic” highlighted in yellow on the top left side of the page. Clicking the drop-down menu will bring up a list of available topics for that particular functional area.



If only one view is available, the selected topic will be displayed. However, many topics have multiple views. If the topic you have selected has multiple views, the “View” box below the Topic will show a drop-down menu with the possible view options. Select one, and the chosen content will appear on the screen.

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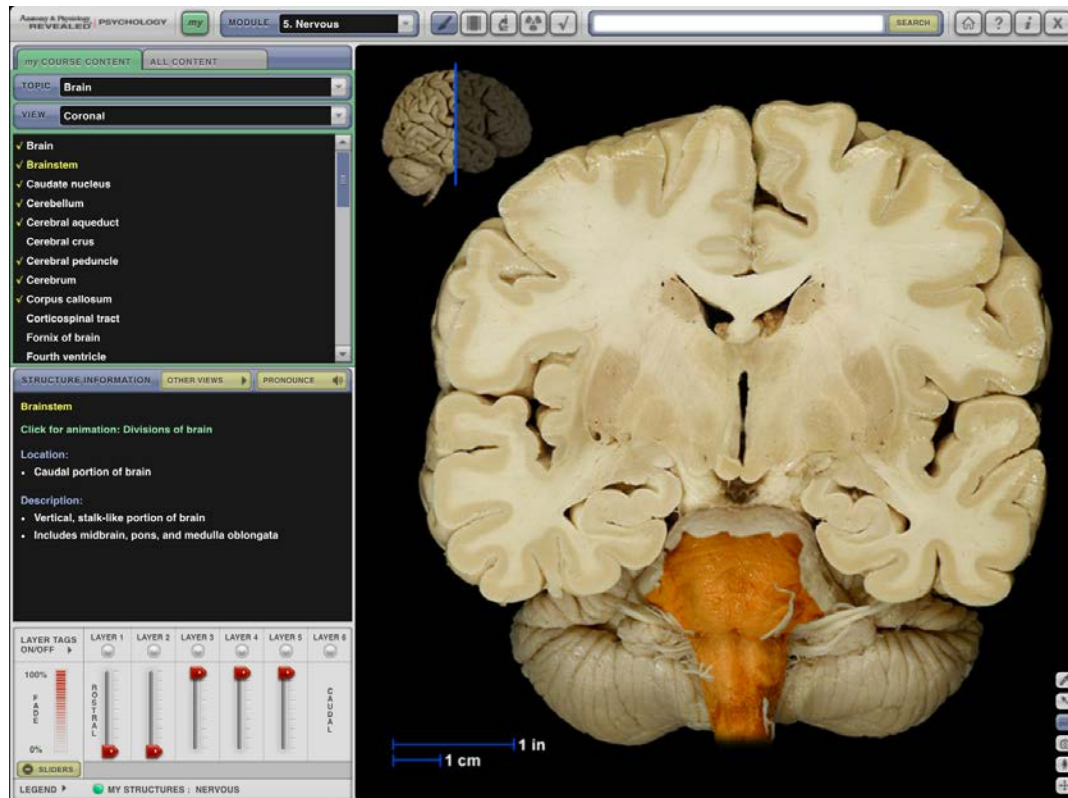
Once the view is selected, many types of information will become available. For example, the image above shows the coronal view of the brain in dissection mode. Clicking on any of the specific brain regions in the box under the “view” screen highlights the selected element in orange in the main screen.

In the image above, which shows the brainstem highlighted, you can see various types of information available to explore in the “Structural Information” box. Each region will have different available information, which will range from animations to facts about location, function, and descriptions of the selected region. Also, note that two other buttons are available next to the Structural Information header – “Other Views” and “Pronounce.” Clicking the “Other Views” button will bring up a pop-up window displaying other available views of the same region (still highlighted in orange). The number of views available is given, and you can cycle through them at will.

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2. Layers



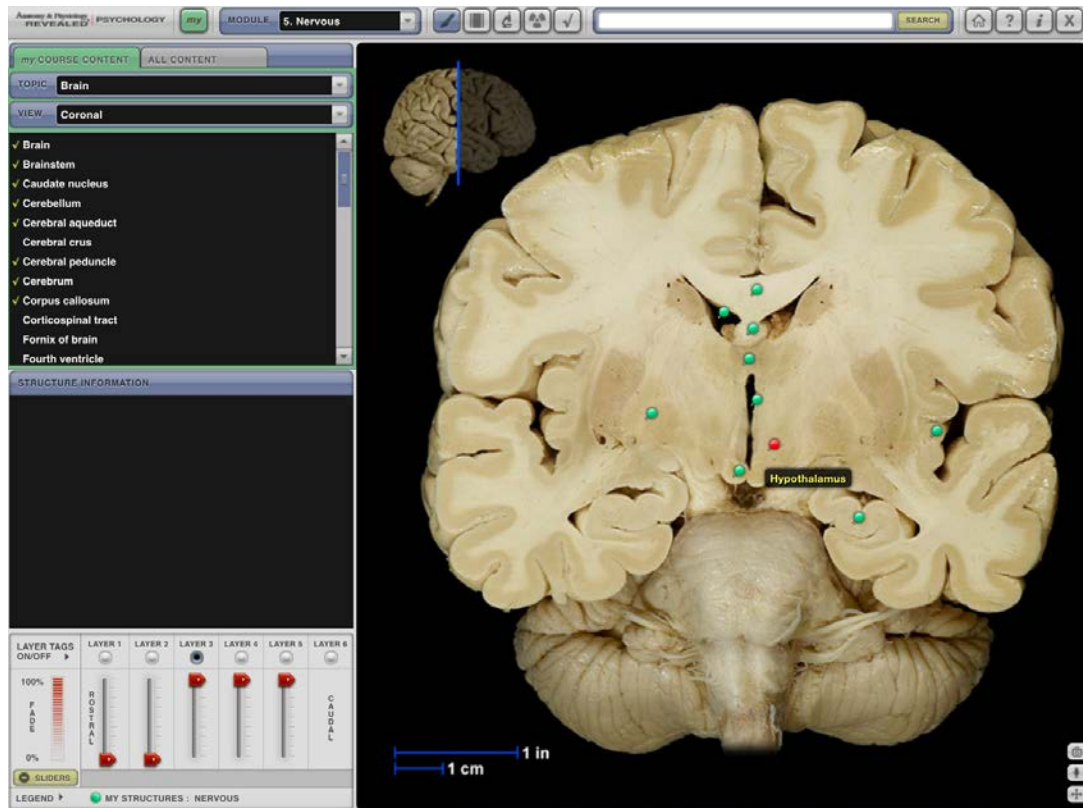
Underneath the Structural Information box, you will see a series of sliders labeled as Layers. Note that this section can be toggled on or off by clicking on the yellow “sliders” box at the bottom of this area.

The layers sliders allow for a very fine-tuned view of the selected brain region. Each layer is designed to peel away part of the surface of the selected region to explore what lies underneath. In the image above, Layer 1 and 2 have been removed, and we can see the brainstem as it would look if half of the brain had been exposed. Note that a key showing the depth of dissection is shown as a small brain on the top left of the main view window. Moving the sliders allows an animation effect that demonstrates the brain with each layer being added (or removed).

Clicking on the Layer Tags buttons will remove all higher layers and add a series of small green dots to indicate the location of important structures. If the green dot is selected, the region is labeled and the selected dot turns red. In the image below, for example, the layer tags have been turned on, and the hypothalamus has been selected.

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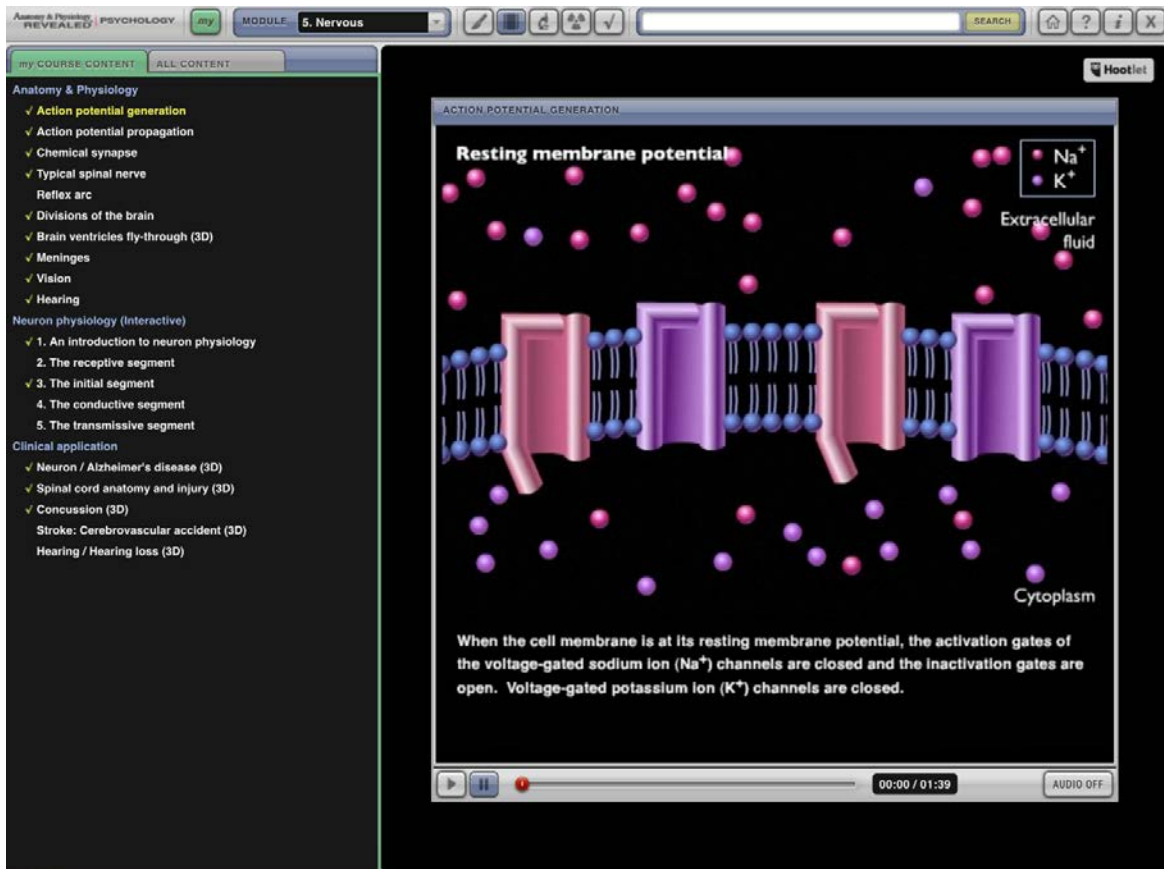
- ii. Animation mode (available in Cells and Chemistry, Tissues, Muscular, Nervous, Endocrine, Reproductive)

The second view mode is Animation Mode (note that Animation Mode is not available for all modules). Animation Mode displays a list of all available animations for each selected body division. Some body regions include further sections. For example, the Nervous System division includes animations, interactives, and clinical applications.

To access Animation Mode, first select the module you wish to view. Then, click on the menu button that looks like a small film strip. Once selected, all available animations for the selected module will appear in a list in the left-hand view screen.

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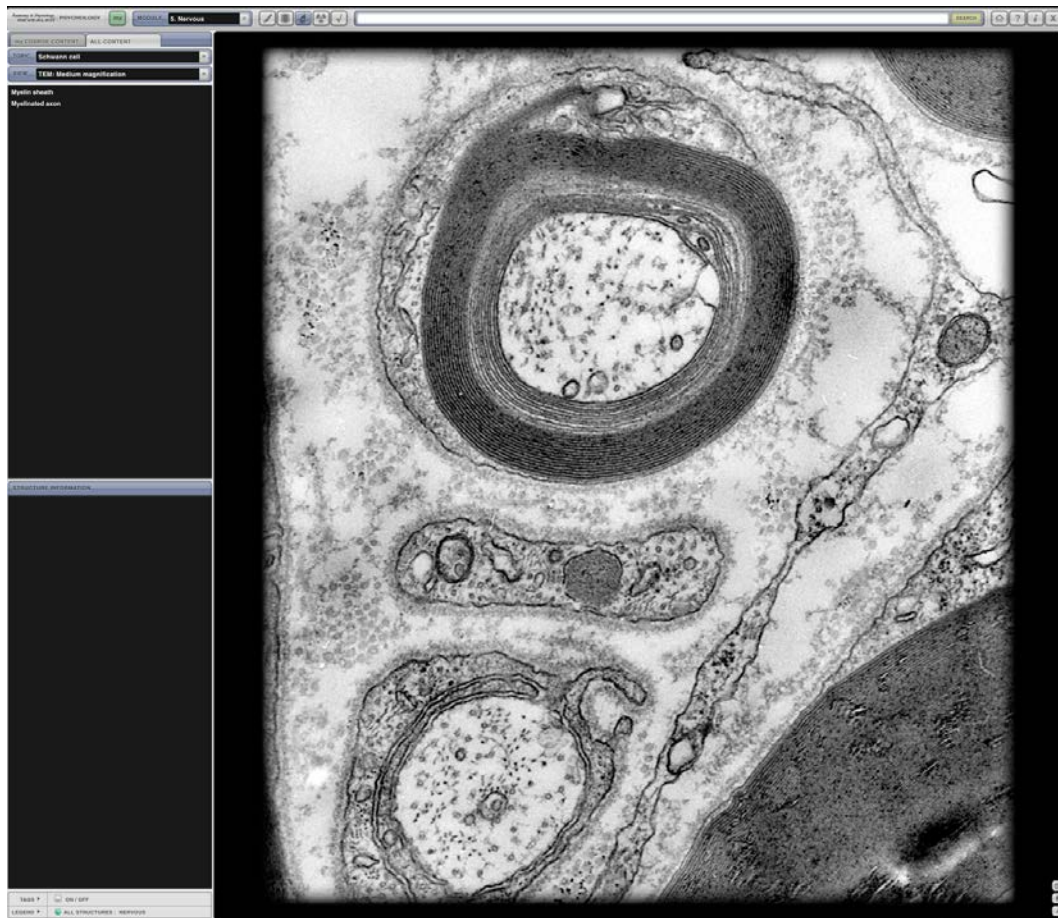
Once an animation is selected, a smaller display window will appear in the main view screen. You can adjust the volume, play/pause, and move the animation forward or backward by using the slider bar at the bottom of the animation window.

iii. Histology (available in Cells and Chemistry, Tissues, Muscular, Nervous)

Histology mode allows the user to view a microscopic image of the various anatomical systems available within APR: Psychology. To access Histology Mode, first select the module you wish to view (note that Histology Mode is not available for all modules). Clicking on the small microscope icon will bring up a fairly empty page with "Select Topic" highlighted in yellow on the top left side of the page. Clicking the drop-down menu will bring up a list of available topics for that particular functional area. Some images have multiple possible resolution images; this selection option will appear in the "view" menu if available.

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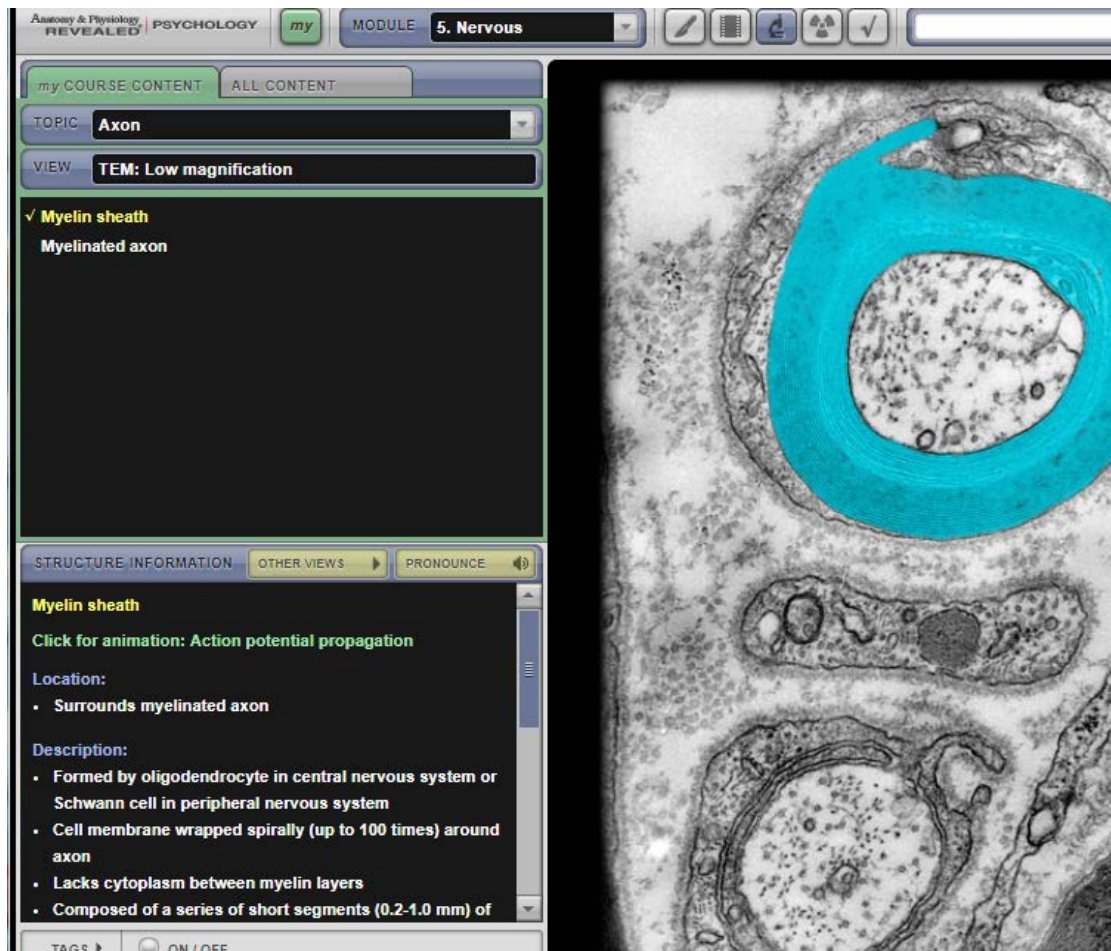
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Once selected, a list of key structures in the image will be displayed in the upper-left view screen. Selecting the structure will result in it being highlighted on the image in the main view screen. Information about the chosen structure will also be displayed in the lower left “Structural Information” view screen.

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Each region will have different available information, which will range from animations to facts about location, function, and descriptions of the selected region. Also, note that two other buttons are available next to the Structural Information header – “Other Views” and “Pronounce.” Clicking the “Other Views” button will bring up a pop-up window displaying other available views of the same region (still highlighted in blue). The number of views available is given, and you can cycle through them at will.

At the bottom of the Structural Information box is the Tags button selector. Clicking on this will add a series of small green dots to indicate the location of important structures in the image. If the green dot is selected, the region is labeled and the selected dot turns red.

iv. Imaging mode (available in Nervous)

Imaging Mode allows the viewer to see various diagnostic images of the brain and the eye. To access Imaging Mode, first select the module you wish to view (note that Imaging Mode is only available for the Nervous System module). Clicking on the small radioactive symbol icon will

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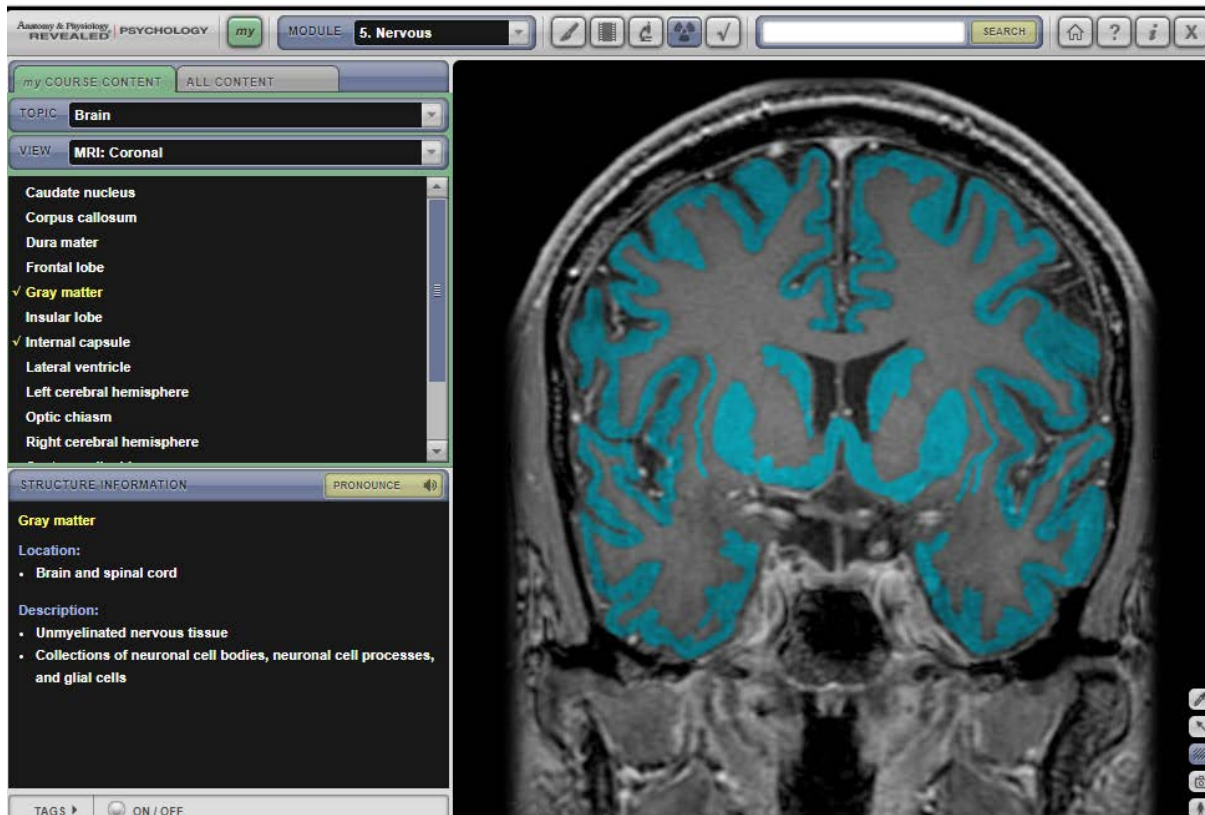
bring up a fairly empty page with “Select Topic” highlighted in yellow on the top left side of the page. Clicking the drop-down menu will bring up a list of available topics for that particular functional area. Some images have multiple possible views; this section option will appear in the “view” menu if available.



Once selected, a list of key structures in the image will be displayed in the upper-left view screen. Selecting the structure will result in it being highlighted on the image in the main view screen. Information about the chosen structure will also be displayed in the lower left “Structural Information” view screen.

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Each region will have different available information, which will range from animations to facts about location, function, and descriptions of the selected region. Also, note that two other buttons are available next to the Structural Information header – “Other Views” and “Pronounce.” Clicking the “Other Views” button will bring up a pop-up window displaying other available views of the same region (still highlighted in blue). The number of views available is given, and you can cycle through them at will.

- v. Quiz mode (all, student self-quiz, results don't report to Connect)

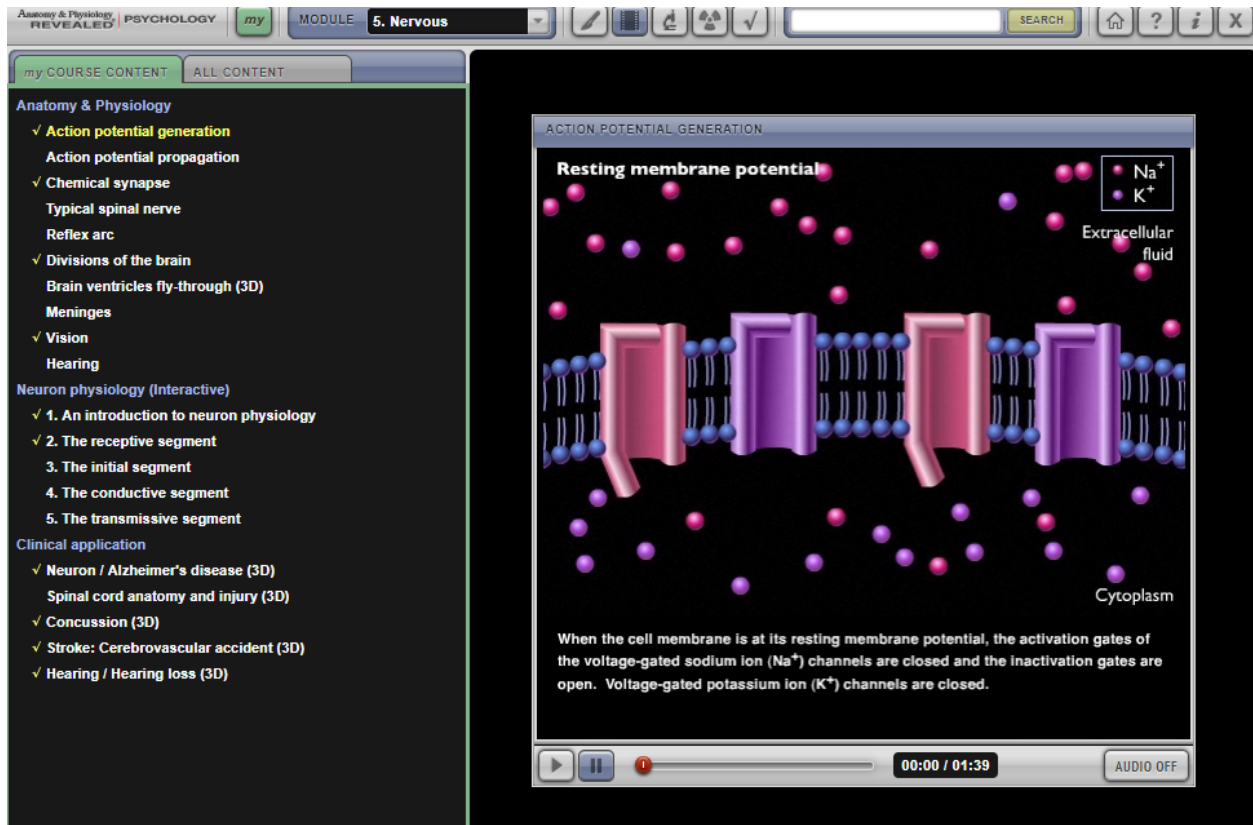
The final view mode within APR: Psychology is Quiz Mode. Quiz Mode is available for all seven modules. The primary purpose of Quiz Mode is to allow students to engage in self-assessment of anatomy and physiology; note that these Quiz questions cannot be assigned within Connect, and the results of these quizzes do not appear in Connect.

To access Quiz Mode, first select the module you wish to view. Clicking on the small check mark icon will bring up a fairly empty page with “Select Test Topic” highlighted in yellow on the top left side of the page. You can pick either Structures or Animations.

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Selecting Animations allows you to choose the specific animation for which the quiz will be generated (note that “all animations” is also an option). Selecting a specific animation will then open a pop-up window in the main view screen that displays the selected animation, while the right-hand view screen displays the quiz question.



The answer choice can be selected by clicking on the text for each response. Once the response is selected, immediate feedback will be given in the “Answer” box on the bottom left of the screen. If the choice is correct, the text will display “correct answer” in green. If the choice is incorrect, “incorrect” will display in red, while the correct choice will appear in green. Note that once a response is selected, you cannot re-select a different response.

The student progresses through the quiz by clicking on the “Next Question” button at the bottom of the Answer window. The score and percentage correct automatically update as the student moves through the questions, and the quiz can be concluded at any time by clicking on “End Test Now.”

If the user selects Structures (as opposed to Animations) in the “Select Test Topic” menu, a second drop-down bar will bring up a list of possible structural regions (note that “All Regions” is also a possible selection). If available, several test types will be presented for the chosen structural region. The test types vary according to region, and include modes for testing

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function, lab activities, structure, click-to-identify, multiple-choice, and more. A “combination” mode is also available, which selects questions from each of the available modes.

Once selected, the user will be prompted to select the number of questions to include in the quiz. The test will then be generated, and the student can progress through the quiz by responding to the various prompts given in the left-hand view screen.

- d. Other key functionality
 - i. Help/video tutorials

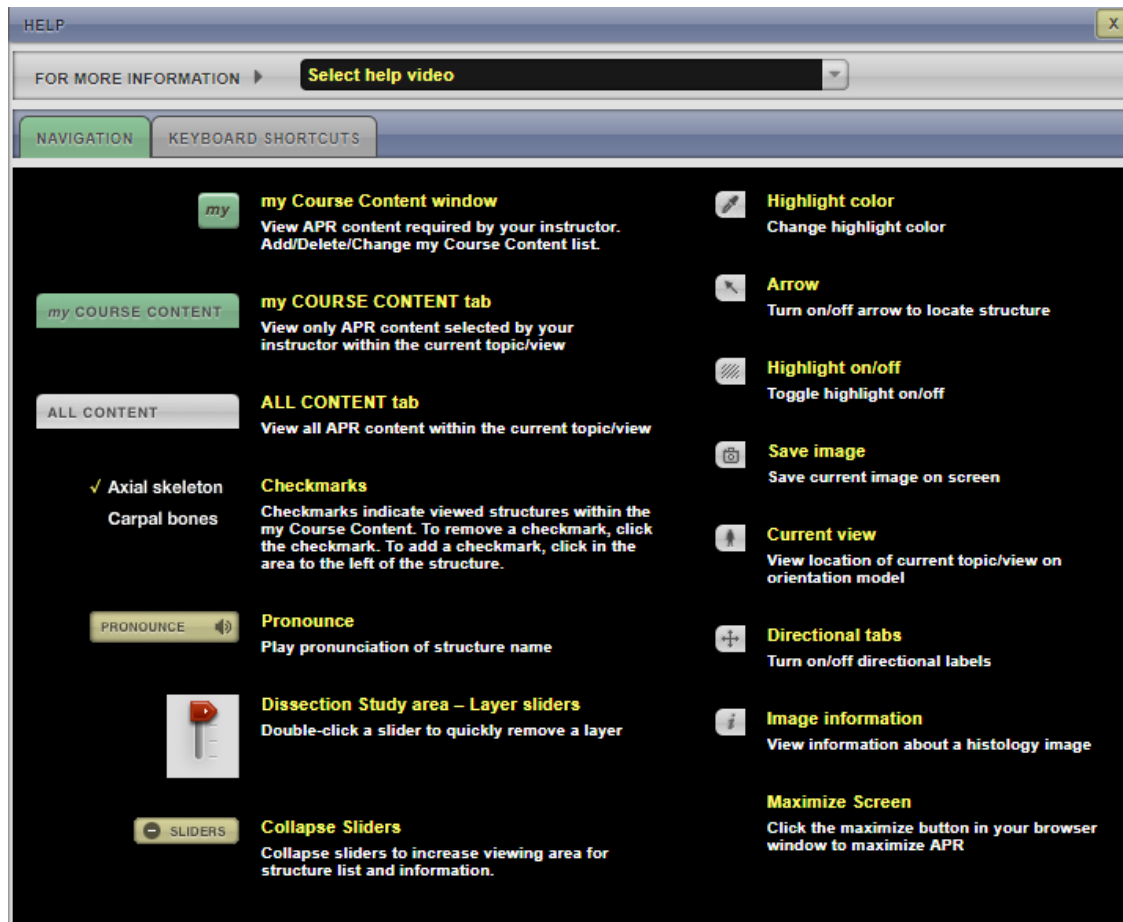
APR: Psychology also includes several helpful videos to guide its use. In the full APR: Psychology site, you will find a series of help videos listed on the bottom right of the home screen.



If you are in a different area of APR: Psychology and need assistance, you can access helpful information by clicking on the question mark icon on the top right on the screen. This will allow you to access the same series of videos via the dropdown menu at the top of the pop-up screen, as well as view other helpful information on the main screen itself.

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- ii. Download images etc. (buttons on bottom right)

Other options within APR: Psychology can be accessed by clicking on the various buttons on the bottom right-hand corner of the main viewing area. These buttons are configured differently for each view, depending on the availability of each tool. Tools include features such as changing the color of the highlighting or turning it on or off, the ability to save an image, and the option to toggle on and off the arrows in the image. When you click on the same question mark icon discussed above, a legend explaining the functionality of each button will appear on the main screen of the new “help” pop-up window. However, you can also hover over each button to receive a brief explanation of each button’s function without having to leave your current view.

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Section 3: What are other ways to use APR: Psychology?

In-Class Ideas:

- **Exploration:** Either individually or in groups, assign students to explore a specific region of the selected module. Have students note the location and function of their region, as well as any other important features. Then, ask students to share what they've learned with other classmates or group members. For an added challenge, tell the students to discuss how each of the regions might work together to perform a task, solve a problem, etc.
 - **Example:** Inform students that their assignment is to dissect the brain (Nervous System: Dissection Mode: Topic-Brain). Pick out a few key regions (Brainstem, cerebellum, cerebrum, hippocampus, etc.) and have each student learn about the selected region. Then, ask students to form groups and share what they learned with one another, with an emphasis on discussing function and how all the various regions work together.
 - **Variation:** Have each group of students research the same region and then present their research to the class.
- **Structure and Function Game:** Before class, create a list of key structures and examples of functions for each. Then, scramble the structures and functions. In class, ask students to match the structure with its associated function.
 - **Example:** For each structural region, think of a few specific functions that would be relatable to the students. For example, for the cerebellum, a functional example might be to ride a skateboard. Then, either individually or in groups, ask students to pair the structure with the function. This could be done in worksheet format, using a digital student response system, etc.
 - **Variation:** Rather than giving students the structures and functions, ask them to generate examples of functions for each region. Or, conversely, give a few examples of function and ask students to brainstorm what structures might be involved.
- **Point and Click:** Download various APR: Psychology images relevant to the content emphasized in your course. During class, point to a specific region shown in the image and ask students to (1) identify it, (2) describe its basic function, and (3) give an example of a behavior or function that would be impaired if the region were no longer functioning. This can be done simply by asking for a show of hands, as a silent written quiz, in groups, or using a student response (clicker) system.

Homework Ideas:

- **Map the Path:** Choose a specific behavior that would be very familiar to students, and individually or in groups, ask them to track the processing of information in the nervous

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system as they perform the behavior. Using APR: Psychology, they can save images showing the regions in use, and generate explanations for their selected path, outlining their reasoning.

- **Example:** Have students think about the various nervous system responses that take place when they drive a car. They can imagine driving to class, the store, etc.; just make sure to choose a behavior that they can easily understand and imagine. Then, using the Nervous System module, ask students to map the pathway of information travelling throughout the system as they attempt to drive the car. They may be required to include a specific number of regions and a set number of APR: Psychology images in their map.
 - **Variation:** To make the assignment easier, give students a set list of specific regions from which to choose for the exercise. Difficulty can be increased or decreased depending on the behavior selected, the number of mapped regions required, and the complexity of the explanation included by the students.
- **Tie Concepts Together:** Before an exam, ask students to think of one (or more) concepts illustrated in the chapter that are regulated by a specific element of the nervous system. Depending on the level of class being taught, you can let students generate ideas with little interference, or you could give them a list of possibilities as a starting point. Ask them to write a brief paper discussing how the nervous system relates specifically to each chapter's concept.
 - **Example:** Assign students to write about the amygdala as it relates to the chapters covered on the upcoming exam (Development, States of Consciousness, and Personality, for example). Students may choose to discuss the role of the amygdala in maturation during adolescence (Development chapter), the fight-or-flight response as it relates to arousal (States of Consciousness), and Grey's BIS/BAS personality theory (Personality chapter). By the conclusion of the assignment, they should be able to discuss themes across the chapter (and the class as a whole).
 - **Variation:** This assignment can be conducted individually or in groups. It can culminate in the creation of a paper, a presentation, or poster.

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Section 4: MyCourseContent

My Course Content

At the website, <http://www.aprevealed.com>, you can find information about the My Course Content feature in APR: Psychology, which allows faculty to customize a list of content and provide students with a course content code so that students can focus on specific systems and structures. The functionality of APR: Psychology remains the same, but students are able to access a pre-selected list of content designed specifically for their use.

The My Course Content feature is accessed by the green “my” button at the top of the screen.

To create, customize and distribute a customized course list of systems and structures to students, see information in the video posted here:

<https://youtu.be/V7bto8rrtGU>

Information to provide to students is posted here: https://youtu.be/tBye2_1xZaU

Section 5: Technical specifications and accessibility information

System Requirements

- **PC:** Windows 7 or later, 1 GHz IA-32 processor, 2 GB RAM
- **Macintosh:** Power Mac OS 10.6 & Higher, Intel Processor, 1GB RAM
- **Cross platform recommendations:** 1024 x768 pixel screen resolution, color monitor running "Thousands of colors" or higher, audio capable system with speakers/headphones, mouse, Java version 1.6 or higher (free download), Adobe Reader software (free download), latest version of Google Chrome, Apple Safari, or Firefox internet browser.

Updates to system requirements, if any, can be found here:

<http://mpss.mhhe.com/products-aprevealed.php>

Accessibility:

Mobility:

To address accessibility issues related to mobility, we have accomplished the following goals:

- APR navigation is accessible with the keyboard, including the Anatomy & Physiology animations for the desktop. These animations are built in HTML5. The COVI animations have interactive components that are not keyboard accessible. However, the COVI navigation controls are keyboard accessible.

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- The “click to identify” questions from the My Quiz were replaced with multiple choice questions. The click to identify quiz option is still be available from the drop down menus in the Quiz section.
- Tips for using keyboard navigation in APR: You just need to press the tab key to start navigating. A yellow outline will then show up on the item that is currently selected. You hit the enter key to activate whatever is highlighted, just as if you clicked your mouse on it. The first time you hit tab a help screen showing the keyboard shortcuts pops up. You can get back to this help by selecting the “?” in the upper-right menu.

Vision:

To address accessibility issues related to vision:

- An arrow points out the highlighted structures. The arrow can be toggled on/off using a button in the lower right corner of the image. Once the arrow is toggled on, it will appear on every structure, regardless of any change of view or module, until the button is toggled off or the session is ended. The arrow will default to off until the user turns it on.
- A color picker allows the user to change the highlight color. Once the optimal highlight color is chosen, all highlights will appear in that color until the session is ended or another color is chosen.
- The shape of the tags is differentiated so that color alone is no longer the only form of differentiation.
- Descriptive text is included for functionality (buttons, etc.)

Future Roadmap of Changes for additional accessibility:

Vision Issues:

- Descriptive text for static images
- Transcripts for animations

(The above represents McGraw Hill Education’s intended actions, and does not constitute a warranty or representation as to the compliance of the cited products to accessibility standards.)

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