C8 Sciences

ACTIVATE™
ENHANCING COGNITIVE PERFORMANCE
EDUCATION

Implementation Handbook

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Logging in to ACTIVATE

ACTIVATE uses two separate URL's for logging in—one for Teachers/Administrators and one for students.

- Teachers will use the Teacher's Portal login which is designed for the teachers to gain access to progress data, reports and registration information.
- Students log in to Captain Bluefeather's Island to play the games and take the NIH tests. Each account has a specific log in address

Students go here: https://_____.c8sciences.com

Teachers go here: https://Portal.c8sciences.com

Account name: _____

Teacher username: _____

Getting Students Started with ACTIVATE

Use the following steps to help your students get started with using ACTIVATE.

1. **Identify your students who will be using the program**. ACTIVATE is a training program that helps increase Executive Function in all students-not just those who have attention difficulties. The decision to have a student train on the ACTIVATE program is usually determined through a recommendation by a parent or teacher.
2. **Log into the Teacher Portal**. *See page 3*
3. **Build a Cohort**. Group your students into Cohorts and determine their training schedule. *See page 9.*
4. **Register students**. A student should never have more than one username when using the ACTIVATE program. It is recommended that the School Account Owner register students to assure there are no duplications. *See pages 8-9*
5. **Prepare Students.** Provide each student with an index card that provides the correct Account Name, Username and Password and the ACTIVATE URL. Let students know *that Captain Bluefeather's Island* is designed to strengthen their brains' abilities to work more efficiently. Make them aware that these games are not easy and in order to be successful and to get stronger they need to really focus on what the games are asking them to do. Let them know that they can ask for help at any time.
6. **Train away!** The first two days the students log into ACTIVATE they will start working out on their cognitive exercises. On the 3rd, 4th and 5th session students will be prompted to take one of the NIH tests at the start of their sessions. Once the test is complete, the student will be prompted to complete two cognitive exercises to make it a complete session. Starting with the 6th session students will only have computer games to choose from. Periodically though the year the NIH tests will appear automatically to provide for a measurement of their cognitive growth.

What is ACTIVATE™?

ACTIVATE is a cognitive cross training program based on cutting edge neuroscience applied with breakthrough technology from Yale Medical School researchers. ACTIVATE is a brain-based pedagogy that directly improves thinking abilities, a cognitive training program that works through activity-dependent recruitment of the neural resources. Just like strength and conditioning program can improve the health of our heart and muscles, this targeted brain-training program improves our brain's ability to sustain attention, to remember information, to think quickly, to shift focus, and use reasoning.

ACTIVATE has been designed to improve eight specific cognitive functions, which we call the eight core cognitive capacities, or the"C8"). These Executive Functions are the foundations for all learning – and they can all be measured and improved by using ACTIVATE.

ACTIVATE: Like Having a Personal Trainer

All a child needs to do to use ACTIVATE is to learn a few simple computer games. Each game starts off very simply and then slowly grows in complexity and speed. Some games have hundreds of levels of difficulty. The computer games are an adaptive technology: they adapt automatically to each child's performance. The games have been built with "real time error diagnostics" They not only detect what errors students are making but also why the errors have been made and then display an appropriate corrective strategy message.

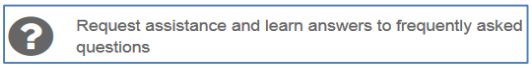
Before You Get Started with ACTIVATE

The steps outlined in this Handbook assume that you are registered in ACTIVATE. If you are not, notify your ACTIVATE School Account Owner or Support@C8Sciences.com.

If you have any questions when using ACTIVATE please contact your School Account Owner or send your questions to Support@C8Sciences.com.

Before you get your students started on ACTIVATE, make sure you have the background knowledge of the program. This can be done by attending the Professional Development meeting provided by C8 Sciences or by logging into Portal.C8sciences.com and taking the On-Demand Professional Development Courses. These courses can be taken at your leisure and only last about 30 minutes for each course. Each course has a quiz at the end to test what you have learned. Knowing how to support and coach students through the exercises is very helpful. *See pages 5-6.*

The best way for a teacher or coach to help students with their questions is to play the games. To play the games on our Demonstration Site take the following steps:

- log into the Teacher Portal with the username provided by your Site Manager and the password you created.
- under "Resources" click on - 

- then click on Demonstration Site
- use ***demo*** as the username and ***demo*** *as the password* (all passwords are case sensitive).

This site can also be used to introduce the computer exercises as whole group instruction to get an understanding how they are played. This is especially helpful for young learners. (**Note:** The Demonstration Site does not collect data, so students should not exercise on this site regularly.)

Technical Requirements

Here are the minimum requirements for using ACTIVATE.

Hardware	Pentium Processor 1.6 Ghz or higher (or equivalent)1GB RAM, minimum
Internet Connection	High speed
Browser Requirements for HTML5	Firefox 24 + (PC only)-**Recommended** Safari 6.0 + (Mac only)-**Recommended** Chrome 30.0 + (Mac or PC) **Recommended** Mobile Safari + iPad 2.0 Silk Browser + Amazon Kindle Fire HDX or later
	Open Port 80 and 443 (normal web browsing)JavaScript enabledAccept Cookies Pop-up Blocker Off (or set to accept pop-ups from c8sciences.com)

Bandwidth Estimate: 1,000 kbps down/ 250bps up per *active* workstation (student) - average, peak, and initial bandwidth requirements vary greatly as classes work through the program and may be significantly less than what is listed above. No matter how fast the network connection between workstation and server is, if other bandwidth-intensive activities (VoIP, streaming video, audio downloads, database backups, etc.) are running on the network at the same time, program performance may be impacted.

The Goal of the Computer Exercises

Students who use ACTIVATE with fidelity will stimulate areas of the brain that strengthen eight primary skills that make up Executive Functions. We refer to these skills as the 8 Core Cognitive Capacities . These skills are important for the development of both social and cognitive capacities that enable students to plan and act in a way that makes them good students and good at managing the routine task of everyday life. The goal of ACTIVATE is to strengthen these skills so that students can become more proficient learners.

When your students use ACTIVATE they will be exercising their Executive Functions on the computer like a person would go to the gym to work out their heart and muscles. Through repetition and stimulation of neural pathways the brain will strengthen itself.

What does fidelity look like? When students use ACTIVATE the ideal pace is 60 -100 minutes per week, with a goal of reaching a minimum of 1000 minutes. At the 1000-minute mark there is adequate data available for ACTIVATE to generate a cumulative progress report that teachers (and parents) can use to measure the student's growth and to map out next steps.

The Role of the Facilitator

Viewing the ACTIVATE program as a fitness program for the brain it will allow the facilitator to get a better understanding of how to get the most out of the students.The computer games in ACTIVATE are actually exercises that stimulate the areas of the brain that strengthen executive function abilities through constant repetition. ACTIVATE is not designed to catch a student's attention with loud noises and bright lights. The exercises will increase in difficulty as they level up and therefore become more challenging for the student. Students that are at a deficit in executive functioning abilities will have a hard time staying engaged with the exercises; occasionally students might get frustrated or disinterested with the games because they are not as engaging as computer or video games designed for entertainment - this is where the facilitator will become a coach. Keeping students engaged on the exercise and assisting with finding new strategies to master the challenging levels will require coaching. Here are some roles and strategies the facilitator can use to help in coaching the student.

Keep in mind that using ACTIVATE is a type of workout and sometimes students will need to be motivated to be successful. Even though we want our students to have intrinsic motivation, sometimes they need extrinsic motivators to help them succeed. We have provided some principles and techniques to help students stay engaged with the workouts. (To find out more about the 8 C's and how they can be supported, see page 17.)

What does it take to be an effective facilitator?

There are two facets to the facilitator role in the ACTIVATE program, computers and physical activities. All facilitators should share common traits of being energetic and engaging.

The Computer Program Facilitator This person should be tech savvy with a basic understanding how computers work. Being able to connect a computer to a projector can be helpful in whole group instruction on the demo site to help students learn new strategies with the games is very helpful.

The Physical Exercise Facilitator This person should be able to demonstrate the skills (see the Physical Activites section). They do not need to be proficient in the skills. Group management skills in a large space is very helpful.

Setting expectations It is helpful for the facilitator to provide expectations for students before each session. Be clear on what is expected of each student and the group. Example: *Emphasize the importance of exercise and how it will benefit their ability to be a better student.*

Be part of the training Be a coach! Help motivate and provide positive feedback. Walk around the room and notice what level the students are on, if you see a student who is on a low level and they have been working out for several days this would indicate they might be stuck. This applies for both computer and physical exercises.

- Ask the child if you can sit next to them while they play the computer games.
- Ask them to explain what they are supposed to do in the game they are playing. If they are correct, say "Good, thank you" and ask them to show you as they play. If they do not understand, then explain the rules to them.
- Quietly ask them what they are looking for as they are playing. Encourage then to keep saying it out loud quietly to them self.
- As they get better, suggest they say what they are looking for to themselves inside their heads.
- Point out to them they seem to do better when you are sitting next to them. Ask them why that is? Tell them the goal is to do just as well when you are not there. When you get up remind them to try hard and let them know you will be looking on when you are walking around the room.

Facilitator – Student Roles One way for you and each student to think about your respective roles is that you are a two-person team: you are helping provide skills the student does not have. Gradually and deliberately you can pass more and more of the job onto the child, monitoring what they are able to do

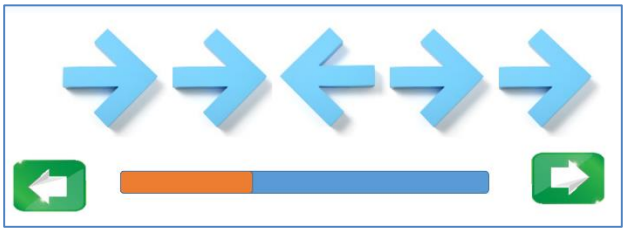
Building intrinsic motivation with looping feedback: We find the computer training to be more effective when we can help our children find the self-motivation needed for completing their weekly exercise sessions. Children are more likely to become invested when they see that they have the ability to change their struggles in learning in the classroom environment. Have a conversation with your child on what a weakness in any of the eight CCC's would look(see About at C8Sciences.com) like and how these weaknesses might manifest themselves at home and in the classroom and the consequences they might bring, can be compelling. Showing the results of the ACTIVATE preliminary report can provide measured evidence of their struggle. ACTIVATE can provide an action to change the behavior, and with fidelity it can be measured over time. Making observations of positive change and accomplishments not only on the exercises but also in the classroom or at home and reinforcing with positive praise will help your child understand they have the ability to strengthen the capacity to succeed.

The NIH Cognitive Assessments

Upon a careful review of the assessments available from the NIH Toolbox, the C8 Sciences Scientific Advisory Board has recommended a battery of three core assessments that are especially appropriate for measuring the Executive Functions Skills of Sustained Attention, Self-Regulation, Working Memory and Processing Speed. Assessing cognitive growth requires scientifically designed tools. In order to combat the lack of uniformity and the questionable validity of assessment tools available to educators, parents, and clinicians, the National Institutes of Health has developed a "Toolbox" of cognitive assessments. As one unique feature of ACTIVATE these assessments have been built into the program. ACTIVATE builds this assessment into the regular schedule of events so that each student will take the assessment near the beginning of the year (as a baseline) and periodically throughout the year.

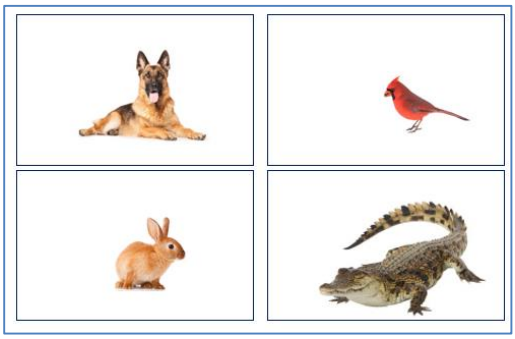
There are three tests that make up the ACTIVATE assessment.

Attention (The Flanker Task) - This is an assessment of self regulation and attention. Students see five arrows in a row, all of which are pointing either to the left or right. Using the arrow keys on their keyboard, the students need to identify which way the arrow in the middle is pointing. In order to do this they need to mentally block out the arrows on either side of (flanking) the one in the middle.



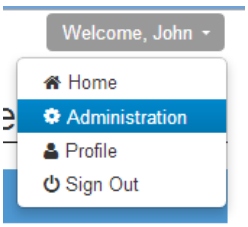
Self-Control (Go / No Go Test) - This is a simple and fun test of self- control or impulsivity. Students are instructed to tap the space bar as soon as they see the letter P - but to refrain from tapping when they see the letter R. Once they've completed a series of trials with "P" as the target, then they must switch and tap when they see R - but not P.

Memory (Working Memory Test) - Working Memory is the "scratch pad of the mind" - the ability of the brain to keep and hold information needed to perform any given task - standing in a line, working at a math problem, or quietly sharpening a pencil. The Working Memory Test measures the strength of each student's "scratch pad" by asking them to repeat sequences of pictures shown on their screen in a different order than shown.



Administrators: Getting Set Up

When your Account was first set up, a School Account Owner was established, based on information gathered at pre-implementation meetings between C8 Sciences and the Account Administrator. Account Administrators and School Account Owners are the only people who can register teachers or facilitators in ACTIVATE.



To access the Administration page, the Account Administrator should log into the Teacher Portal (Portal.C8Sciences.com) and click on his or her name in the top right corner of the page.

Adding Schools: If there is more than one school or site in the Account using ACTIVATE, then click "Schools" from the Administration page and add the name of the school.
Registering Teacher/facilitators: To add or register teachers or facilitators from the Administration page, click on "Users". There is no limit to the amount of teachers or instructors that can be registered in ACTIVATE. There are 3 roles that a teacher or facilitator can be assigned.

- **Teacher Role –** The system defaults to this role and authorizes the user to add students and build cohorts, but they can only view those cohorts and students. If teachers are team teaching then they can be invited to view the cohort by having the owner fo the cohort select the name of the cohort they would like their teammate to view and then select "Manage Team" . Here you can invite any user to you cohort by checking their name and clicking save.
- **School Account Owner** – If selected it will allow a user to view all the cohorts and students to an individual school or site. This role authorizes the user to add users, students and cohorts.

  Note: To assign the user to the school there is another step necessary. Once the user has been saved click on the school icon  next to their name and select the school or site they will be associated with.
- **Account Owner** – If selected this user can view all students across multiple schools and sites. This role authorizes the user to add users, schools, students and cohorts.

Retrieving a Users password - Only an Account Owner and School Owner Role can send a "Set Password" email to a User who has forgotten their password. To send a reset email click on the Administration tab and select Users, then click on the icon of the envelope next to the Users name  and then send.

Email Center- Get customized reports right to you inbox. Depending on the role of the user you can get customized cohort or account reports.

Registering Students

Before you can register any students you must set up a Cohort. A Cohort is a group that follows the same computer exercise schedule and is set up based on the length of the cognitive workout. For fidelity we require a minimum of 20 minutes of computer exercise per day, but there is an option to increase the daily session to 30 minutes. For fidelity we require at least 60 minutes of computer exercise per week. If a 30 minute schedule is used for 2 sessions per week we recommend a minimum of 2 days between each session.

Creating a Cohort: To create a Cohort follow these steps.

1. **Click on the "Create Cohort" button** 

2. **Name the Group –** This can be the name of the teacher or the period of the class. Be sure it differentiates from other cohorts. We recommend adding the school year at the end of the name Example: *C8Science 1st period SY15/16*
3. **Select a Training Schedule-** 20 or 30 minute workout
4. **Select a school –** If there are no schools that you want to add to the account, leave this blank.
5. **Select the last training date-** Select a date that will indicate the end of the training period- this is usually a week or two before the last day of school. ACTIVATE will calculate how many sessions will be needed in order to reach the 1000 minutes necessary to unlock the Cumulative Cognitive Report (see Reports on page 17 for more details).
6. **Click Save**

Adding Students: Students can be added individually or can be uploaded by using a spreadsheet.

1. **Click on the name of the Cohort you are looking to add the student to.**
2. **Select whether you want to create a single student or upload a spreadsheet for multiple students**

To "Create Student": If you want to create a single student, click on "Create Student" and fill out the required fields:

- **Username-** You must give each student a unique username. Follow the naming convention set up during your Implementation Meeting. **All student data follows the username, so one student should not have two usernames.**
- **Password-** All passwords are case sensitive and one password CAN be used by everyone. The minimum required digits or letters is 3.
- **Status-** There are three types of status: Active, Archived, and Hidden.
  - "Active" is used for students currently using ACTIVATE.
  - "Archived" is used for students who are no longer using ACTIVATE, but who will still show up on reports.
  - "Hidden" is used for students who are no longer using ACTIVATE and who will not show up on reports.
- **Cohort-** make sure the student being registered is associated with the correct Cohort. Students can be changed from one Cohort to another without losing any data.
- **Save-** be sure to click Save to save any changes

To Upload Students from a Spreadsheet: This method is used when there are large groups of students to be registered to the program.

- Click on "Import Students" at the bottom of the page.
- Upload a CSV file with information for multiple students. Make sure your columns match the instructions listed on the page.
  Note: Please delete rows 1&2 that have the column titles before saving or a format error will appear when uploading.
- Once you have your file ready to upload, click the Browse button, select the spreadsheet from your computer's files, and click Open, then Import.

Printing Student Usernames and Passwords: Select the Cohort and click on Student Accounts and then Print.

Moving Students to New Cohorts: When a previously-registered student is moved to a new Cohort, their data from their previous Cohort is still saved – but they begin the program anew (at the first game levels). C8 Sciences recommends students begin the program from level 1 at the beginning of each new year.

Note: Any time a student is moved to a new cohort they will begin the program anew.

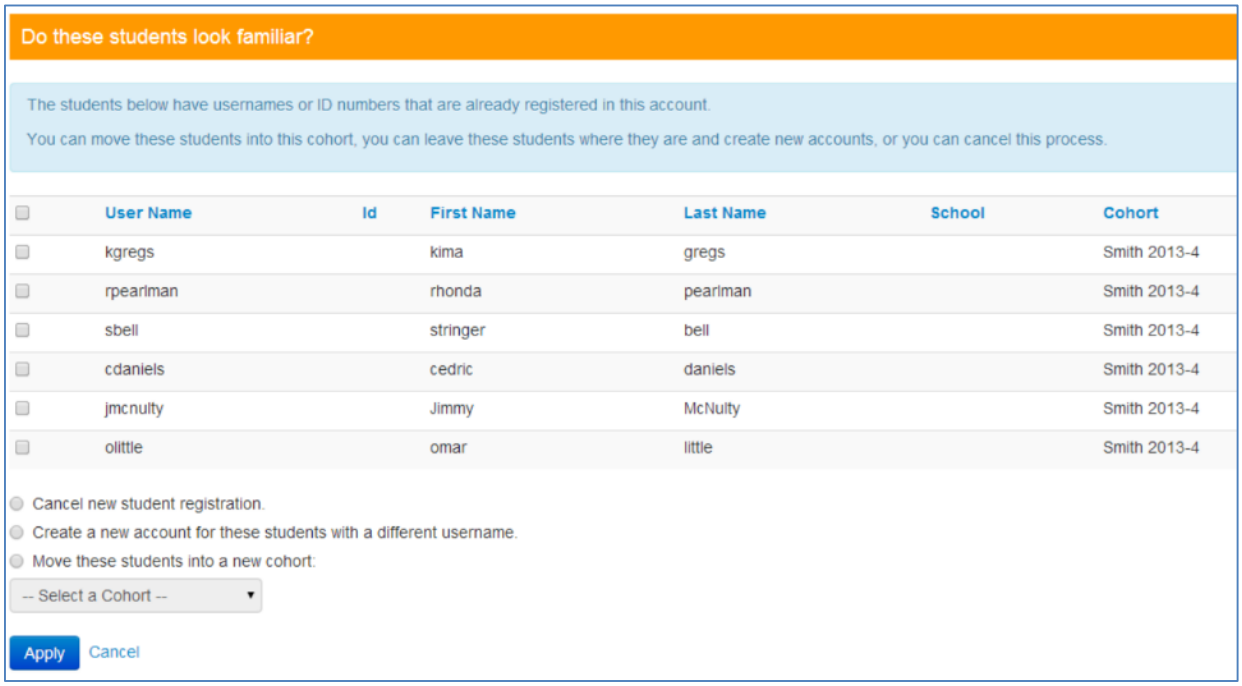
There are two ways you can reassign students from old Cohorts into new Cohorts for the new year:

To move individual students:

1. Click the Edit icon next to the student name.
2. Change the Cohort of the student to the new Cohort.
3. Click Save.

To move multiple students:

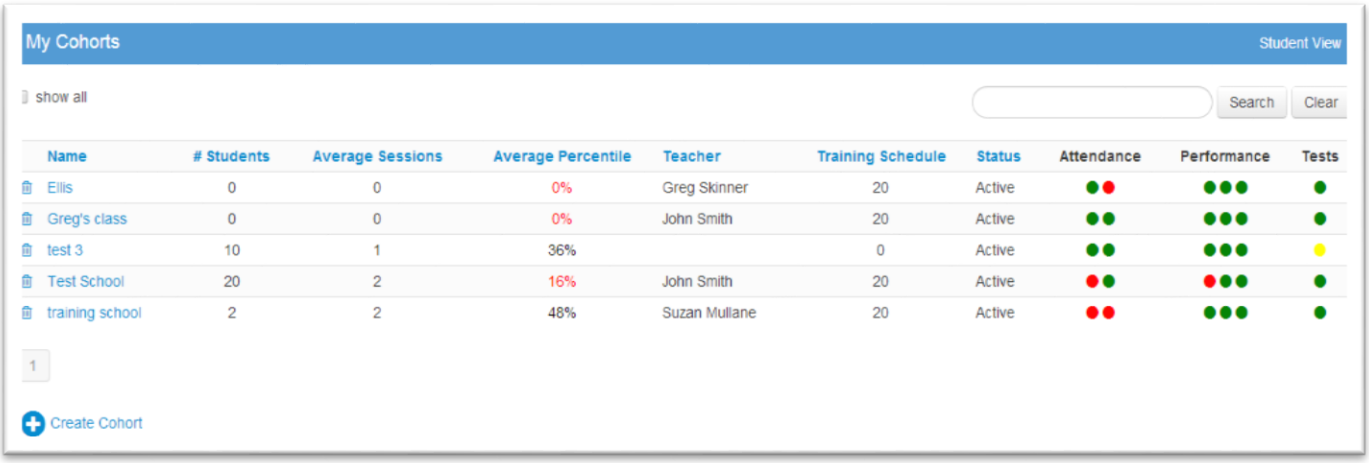
1. Use the Import Students tool as described above to set up your new Cohorts. You can upload a Cohort that has a mix of old and new students, or even all old students.
2. The School Portal will automatically find any newly-registered students that are already in the system and display a list of these duplicate students. If a student appears on this page, it means they've already been registered in ACTIVATE.
3. By following the onscreen directions, you have three options for resolving duplicate registrations:
   - You can move the old student into the new Cohort.
   - You can leave the old student in their old Cohort, and create a new username for the new student to use in the new Cohort (it will not be connected to the other student account in any way). **NOTE**: If you choose this option, the new username will simply have an "_2" added to the end of the username in the CSV file. You can easily print out a list of all student passwords by clicking the *Student Accounts* link on the Cohort overview page. You can also edit the student's usernames and passwords by clicking the Edit icon next to their name.
   - You can quit the process and the new students will not be created, the old students will remain where they were.
4. Click "Apply" to save your changes. You will not be able to add new students to a Cohort until all duplicate registrations are resolved.



Tracking Students

ACTIVATE provides many ways for you to track your students' progress – including on the Cohort level and on an individual student level. To access the students data log into Portal.C8Sciences.com.

Cohorts Overview: From Teacher Portal Home Page teachers can view all the Cohorts they have created. Here teachers can track their Cohorts' progress and retrieve data on student performance.

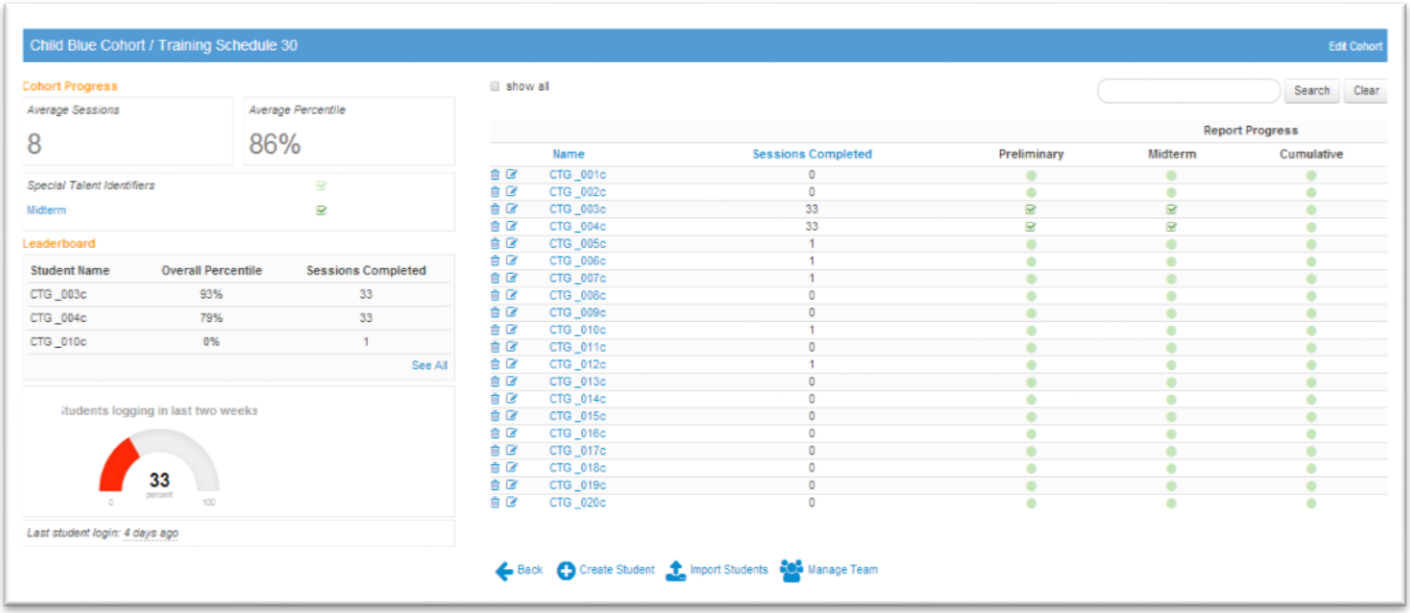


This view provides a wide variety of information about the Cohorts:

- Name of the Cohort
- # of students - how many students have been assigned to the Cohort
- Average Sessions- the average number of sessions the students in the Cohort have completed

- Average Percentile- the average of the percentile ranking is the total of each students Overall Percentile divided by the number of students in the Cohort (based on their grade level) – See Student Detail View for more information on Overall Percentile
- Teacher- the name of the teacher who created the Cohort
- Training Schedule- the length that has been set for the workout schedule (in minutes)
- Status- whether the Cohort is "Active" or "Not Active" (See Page 13 – Edit Cohorts)
- Attendance, Performance, Test lights - these lights work like a traffic light (the green indicates all is good, yellow indicates caution and red indicates a need to intervene.
  - Attendance- Hover the cursor over the light for details.
    - First light- indicates the percentage of students that have logged in the past 2 weeks
    - **Second light-** indicates if the Cohort owner has logged in in the last two weeks
  - Performance – Hover the cursor over the light for details.
    - First light -indicates whether the Cohort average Overall Percentile is above 30% (*See page 14 – Overall Percentile*)
    - **Second light-** indicates the percentage of the students who have completed their session without closing their browser too early in the last 3 sessions.
    - **Third light-** indicates the percentage of students success percentage. (See understand more about the data on the Teacher Portal.)
  - Tests- Hover the cursor over the light for details - this light indicates the percentage of students in the Cohort that have scored lower than the 20th percentile on the NIH tests.

Cohort Detail Overview: By selecting a Cohort and clicking on it a teacher or instructor can manage the progress of the entire class.



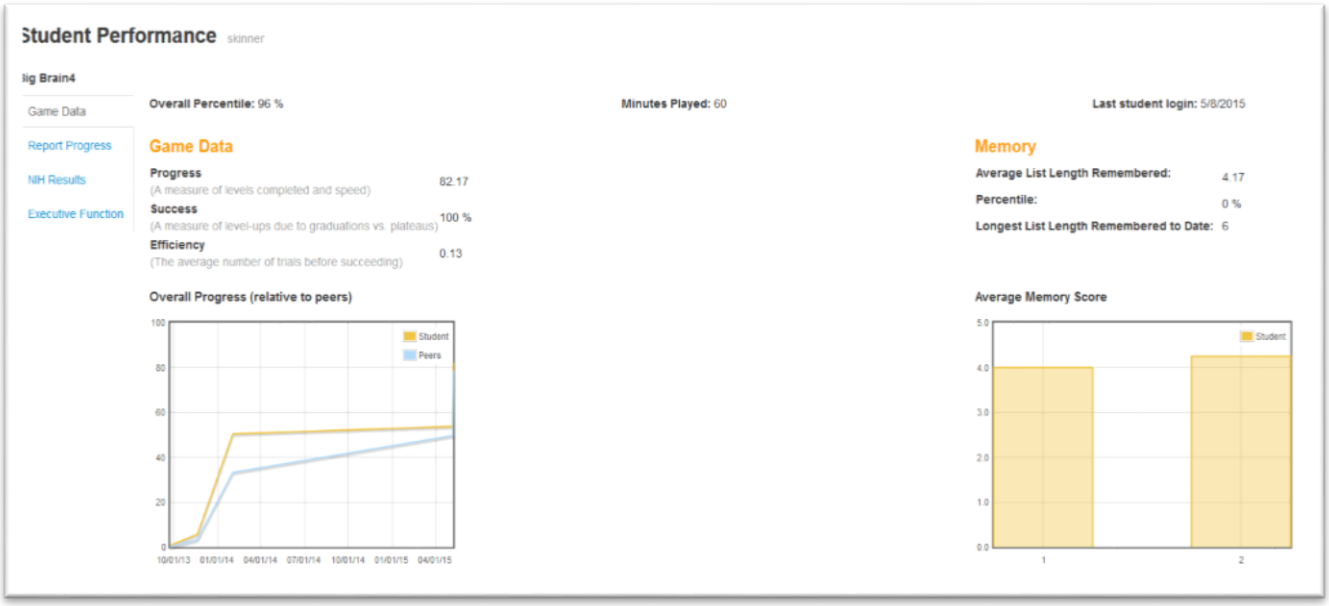
This view provides a wide variety of information about the Cohort detail:

- Cohort Progress- indicates the average number of training session the Cohort has completed

- Average Percentile- the average of the percentile ranking is the total of each students Overall Percentile divided by the number of students in the Cohort (based on their grade level) – See Student Detail View for more information on Overall Percentile.
- Special Talent Identifier Report- when the box is checked the Special Talent Identifier Report is available. If you check on the name of the report you can view and print it. (For more detail about the report see Reports page 17)
- Leaderboard- shows who is leading the group in Overall Progress Points and Overall Percentile Ranking. Click "See All" to see who has reached what level of each of the games as well as session played.
- Meter bar- Provides the attendance percentage for the group over the last 2 weeks.
- Names- These are the names of the students registered to this Cohort. To edit a student's password, grade level or to make a student "Inactive" click on the paper-and-pen icon. To delete a student from the Cohort, click on the trash can.
- Session Completed- shows how many days each student has logged in to ACTIVATE
- Report Progress- when a green circle has a check mark in it, it indicates that the particular report (Preliminary, Midterm or Cumulative) is available. If you click on the check mark you can view and print the report.
- Edit Cohort - By clicking on Edit Cohort one can change the length of the computer schedule. **Note**: all students in the cohort will be affected by the change. Here is where a cohort status can be changed from Active to Archived.

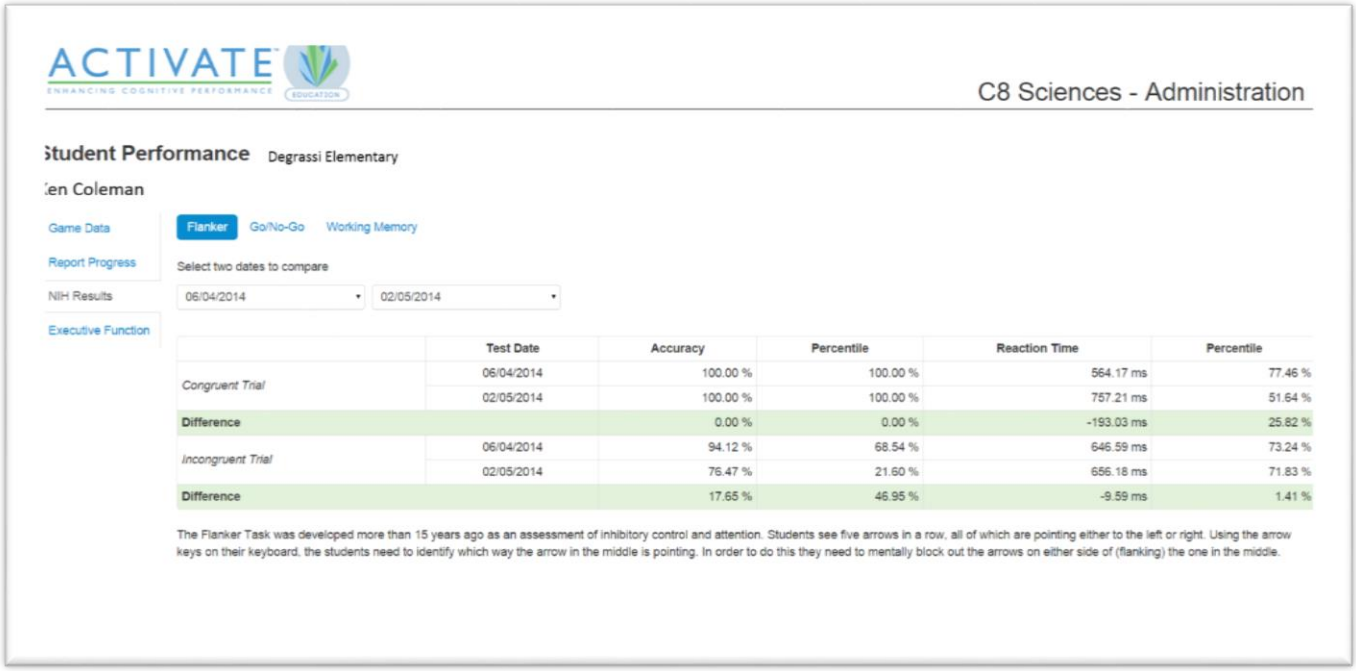
Student Detail View: To view the individual data for any of your students, just click on their name on the Cohort Detail View page.

Game Data:



- Overall Percentile- The Students Progress is compared to the global database based on their grade level and the amount of minutes played. This calculation is an important indicator of how well the student is performing on the computer exercises.
- Minutes Played- lets you know how far away they are from reaching the program goal of 1000 minutes
- Last student login- provides you with the date this student's last exercise session.
- Progress: this is the best indicator of how the student is progressing. Points are awarded to the student when they master a level of a game. The quicker and more accurate a student is on completing a level of the game the more progress points are awarded.
- Success- provides a percentage of how often a student will master (graduate) a level. If a student cannot make any incremental progress on a level ACTIVATE will assume that the student has reached a plateau and it will move the student to the next level to avoid the frustration of being stuck.
- Overall Progress graph- this is how you how this student's progress across all the games compares with every other student of the same grade level in our global database
- Average List Length Remembered- in our Spatial Working Memory games (Monkey Trouble and Grub Ahoy) students must remember lists of increasing length – this number represents the average sequence they could remember correctly in any given 5-minute game session
- Percentile- this tells you how this student compares to every other student in the same grade level in the Spatial Working Memory games
- Longest List Length Remembered to Date- this tells you the longest list the student has correctly recalled in all Spatial Working Memory game sessions to date
- Average Memory Score graph- this graph shows the average list length remembered in each 5-minute session of spatial working memory games.

NIH Results:



This page shows the scores on all three NIH cognitive toolbox tests that have been taken to date. If a test has been taken more than once it also shows the difference in scores.

- Select the name of the test you want to view from Flanker, Go/NoGO, or Working Memory
- Select any two dates from the dropdown menu to compare results and view the difference.

LEARN HOW THE GAMES WORK

Each of the six games that make up ACTIVATE target specific cognitive skills. The games offer multiple levels that provide increasing challenge and exercise. For a complete description of the games in ACTIVATE. http://www.c8sciences.com/about/games/

LEARN MORE ABOUT THE NIH TESTS

ACTIVATE™ provides an early assessment of a student's special needs and abilities. Conventional assessment processes are time-consuming and very expensive, and so they are reserved for children who demonstrate clear signs of cognitive or emotional issues. Most kids just sink or swim until a problem is noticed. By then they have already fallen behind. http://www.c8sciences.com/about/nih-toolbox-assessments/

LEARN MORE ABOUT THE 8 CORE COGNITIVE CAPACITIES

C8 Sciences derives its name from the 8 core cognitive capacities (CCC's) that make up Executive Functions. For a complete explanation of the 8 CCC's , http://www.c8sciences.com/about/8ccc/