



Attention Arcade™ Overview

Attention Training Games

BrainLeap Technologies' Attention Arcade™ consists of six games that each train different aspects of attention:

Dr. Mole & Mr. Hide

The goal of Dr. Mole & Mr. Hide is to hit bandit moles as they pop out of the ground and to avoid looking at the professor moles. As the game progresses, the moles appear more quickly and from more locations. Eventually they even parachute from the sky! The game trains the ability to quickly and accurately orient the player's gaze and attention to a sudden event, and to monitor a wide range of view. As the game gets harder, inhibitory control is also developed as the player avoids looking at the professor moles.



Game Instructions

Bandit Moles are infesting Dr. Mole's garden! Dr. Mole needs your help: look at the bandits to scare them away. If you see an exclamation point (!), then Dr. Mole is coming up. Don't scare Dr. Mole!

Shroomdigger

In Shroomdigger, the player searches for spotted-top mushrooms in a mystical landscape. Focusing gaze on a "shroom" causes it to shrink until it disappears with a poof. Find all the shrooms before time runs out! The game trains attention by requiring steady fixation of gaze, visual search in a crowded field, and the ability to ignore moving distractions.



Game Instructions

Look for the Mushrooms. Keep looking at them until they shrink and disappear. Find all the hidden shrooms before time runs out.

Space Race

In Space Race, the player uses gaze to steer a ship through a cosmic race course, aiming for green gates, avoiding red gates, and collecting stars for bonus points. The game trains anticipatory focus by requiring the player to gaze ahead of the current ship position. Executive functions related to planning are trained by the need to quickly decide whether collecting a star will leave enough time to avoid a red gate that causes damage to the ship.



Game Instructions

Guide your spaceship through the green gates of the space circuit. Look ahead of the ship to steer. Avoid the red gates -- they damage your ship. Collect stars for bonus points.



Kung Fall

In Kung Fall, the player trains a ninja for the Dojo's Aerial Skills exam. Using gaze, the player guides the ninja to land and balance on a series of rock pillars while avoiding birds and ignoring falling cherry blossoms. The game trains planning, steady fixation of attention and gaze, and the ability to ignore moving distractions. This game is unlocked after 3 hours of play.



Game Instructions

Train for the dojo's aerial skills exam. Guide your ninja to any pillar. Once he lands on a pillar, focus your eyes on the ninja until he balances. Watch out for the birds!

Butterfly Bob

Butterfly Bob flies through a peaceful landscape, collecting nectar from flowers while avoiding menacing bugs and traps hiding in bushes. The player uses gaze to guide Bob vertically, flying higher or lower as needed. It trains anticipatory focus, planning, and prioritization. This game is unlocked after 6 hours of play.



Game Instructions

Help Butterfly Bob collect nectar. Guide Bob to the flowers, but avoid the bugs they will steal his nectar!

Trapped-a-Zoid

In Trapped-a-Zoid, the player uses gaze to steer a spaceship to avoid colliding with neighboring ships. It trains inhibitory control of attention, requiring the player to suppress salient visual input while gazing into the empty space where the spaceship will be safe. Executive function is trained by engaging top-down strategy planning. This game is unlocked after 10 hours of play.



Game Instructions

You're trapped! Guide your trapezoid to avoid the projectiles. You gain more lives the longer you survive.



Attention Assessments

The Attention Arcade™ also includes three assessments that are presented after 60 minutes of training, then again after 7 hours of training, then after 12 hours. They are repeated every 4 hours after that. Each of the attention assessments measure different aspects of attention and that the skills users are developing in the games transfer to skills outside of the games.

Tiger Trot

In Tiger Trot, the player sees a tiger cub running along a jungle path and peripheral cues that indicate where upcoming obstacles are located. The player must maintain fixation on the tiger during the whole task. If the player deviates, an arrow appears to cue the player to look at the tiger and the tiger slows down. Tiger Trot provides a sensitive measure of covert orienting speed.



Game Instructions

Tena the tiger cub decided to spend her day exploring her jungle. Look at Tena to keep her running full speed. Move Tena using the arrow keys on the keyboard. Pay close attention to the signs next to Tena, these signs will warn you of upcoming obstacles on the path. When you see a single paw, press the arrow key that points in the same direction. For example, press the up arrow key for the paw that is pointing up, the left arrow key for the paw that is pointing left, and the right arrow key for the paw that is pointing right.

Gone Fishing

In Gone Fishing, the player fixates on the fisherman to fill the bob, then cues appear to the left or right. If the cue is a fish, then the player's task is to look at the fish to catch it. If the cue is a turtle, then the player's task is to look at the opposite side of the screen where a fish is hiding. This anti-saccade task measures the speed of reaction to the fish targets and inhibitory control in terms of the student's ability to suppress a look at the turtle (a distractor). Because the game requires players to switch between pro-saccade and anti-saccade trials, we also believe that reaction time measures from this game can be a sensitive measure of task-switching ability.



Game Instructions

Look at the fisherman until his bob is fully colored in. Look at the fish to catch it. Don't look at the turtle. When you see a turtle, look to the opposite side to catch the fish hiding under the water.

Specter Collector

When the player looks at the collection device in the middle of the screen, a ghost appears peripherally in one of 16 locations. If the player looks to the ghost before a timer runs out, then the ghost is trapped and pulled into the center object. The assessment measures the timing and accuracy of the player's ability to orient their attention to a peripheral stimulus.



Game Instructions

Look at the ghosts to catch them. Fill the tank as quickly as you can. Don't take too long or they will escape!

Please Note:

The assessment tasks are best used to measure a player's improvement from one assessment to the next. They are not an accurate assessment of attention challenges on their own.



Tips for Better Results

To get better results from the attention training games, here are some tips:

Train Regularly

Just like with exercise, your child needs to train regularly to get results. We recommend training 5 days per week for 20-30 minutes per day. It is a good idea to pick a specific time of day or trigger (e.g. right after lunch) to train.

Start Slowly

While it is important to train regularly, your child may find the games particularly challenging when starting out. It is OK to start with only 5-10 minutes per session and work up to 20-30 minutes. It is also fine to split training into two sessions for a total of 20-30 minutes.

Mix It Up

Each game trains different aspects of attention. Even if your child has a favorite game, it is important that they also play the other games. Also, you will notice that only three games are unlocked initially. These are the easiest games and good for getting started. The other more challenging games are unlocked as a player logs enough time on the initial games.

Be Aware of the Training Environment

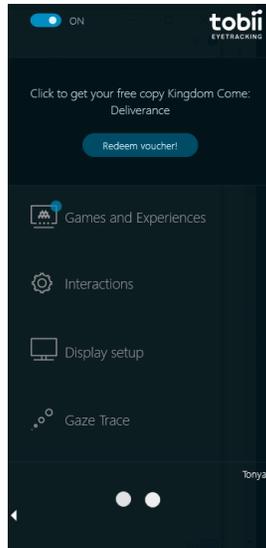
Successful training will require few adaptations in a typical room. However, since we seek to train attention, minimizing distraction for the player—especially early in training—is beneficial. The games provide controlled distraction and increase the amount of distraction throughout game play. The computer should be set on a stable surface. The eye tracker is sensitive, and an unstable table will create movement that could be mistaken for gaze shifts. Finally, glare from a window can make detection of gaze more difficult. Be careful to position the computer and tracker in a setting with even illumination.



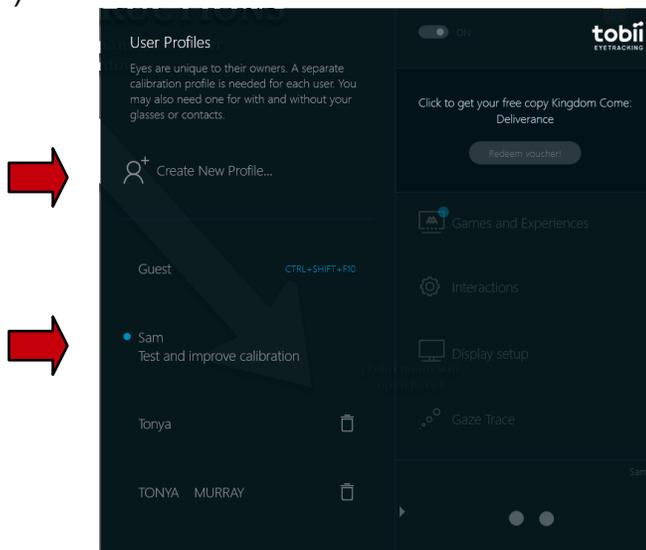
Launching the Attention Arcade



Click on the Tobii app or click on the Tobii icon in the bottom right of the screen.



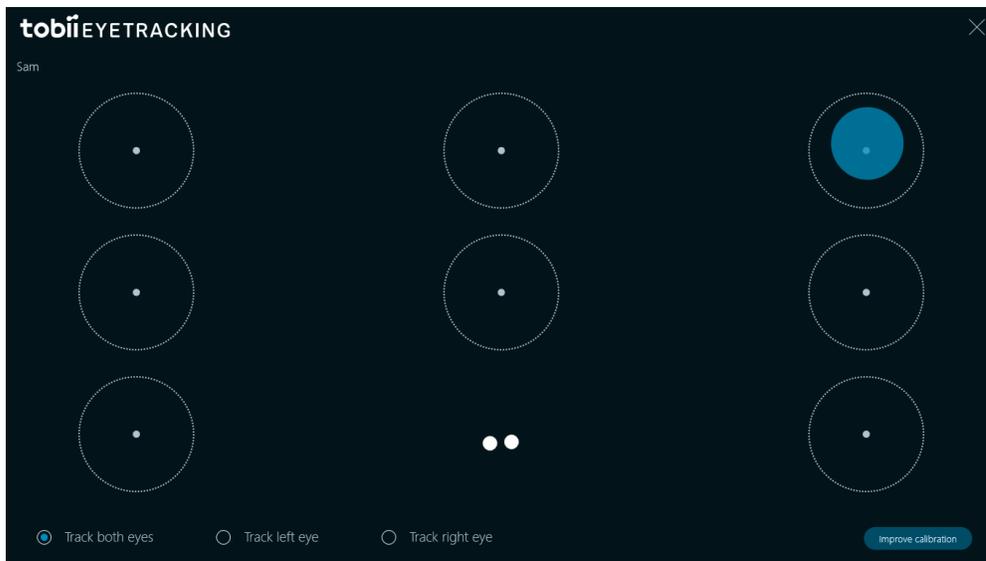
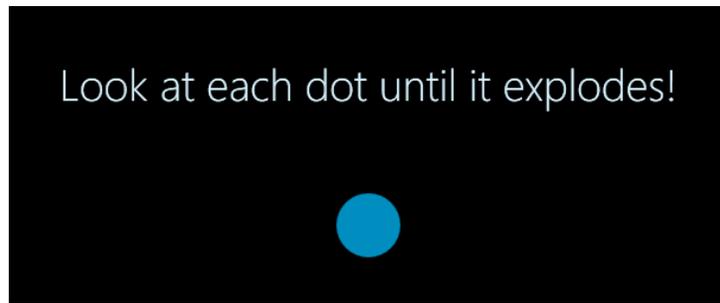
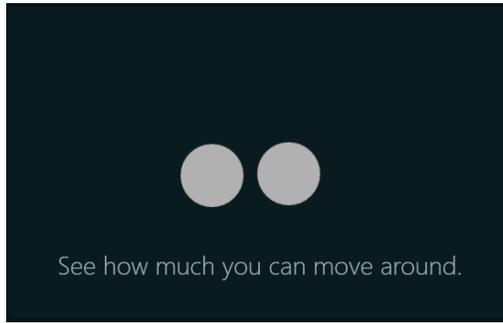
The Tobii app will open in the bottom right of the screen. Click on the triangle near the bottom left to expand the Tobii User Profile menu. (The eye tracking hardware must be connected.)



To choose a returning student, click on his or her name. Click the name a second time to test calibration.

For new students, click on Create New Profile. Tobii will launch the calibration exercise to tune the eye tracker.





To test calibration, have the student look at the center of each circle. Click the blue Improve Calibration button if needed, or X to exit the Tobii app.



Finally, click on BrainLeap Attention Arcade icon to launch the games.

