enAblEgames ™

KOLLECT Training & Instruction Manual v.1.0

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I.   Kollect

A. What is it?

The KOLLECT AVG is the first game designed by the enAbleGames team. KOLLECT was designed to promote physical activity, aerobic and muscular endurance, and motor control through fun and motivating game experiences. The object of the game is to "collect objects and avoid hazards" to gain points and complete game waves.

The KOLLECT AVG has different game parameters and features that can be set to address therapy goals. Some game features included in the game design used exercise principles (FITT) to address: <u>Frequency</u> (number of opportunities to collect objects in a game); <u>Intensity</u> (combination of objects and hazards to increase or decrease physical activity levels); <u>Time</u> (set game duration) and <u>Type</u> (eleven KOLLECT game themes).
Also, there is an option to save player (patient) parameters with a unique name so that these parameters can be loaded for the next therapy session.

B. Objectives

The object of KOLLECT is for players to 'gain points' by collecting objects and avoiding hazards. This may be done using slow or fast movements depending on the therapy goals. If the clinician wishes to focus on functional mobility skills such as reaching, kicking, or balance strategies, it may be good to use both objects and hazards during the game so the player must avoid hazards to get to objects and must consider movement strategies that are more controlled and purposeful. However, if the therapy goal is to increase physical activity intensity and aerobic fitness/endurance, the clinician may choose to set game parameters with no hazards so the player can move fast and not have to maneuver around hazards.

Players collect points using hand and/or feet icons, which are on the screen to guide the player during game play. The clinician can choose if they want left or right hand or feet icons to be used in the game.

"Collecting" Points

Players will gain points when they collect the objects in the game theme and avoid the hazards. There are 'golden' objects in each theme – these have yellow 'sun' rays around them. Players gain 2 extra points when they collect the 'golden' object. Players lose 1 point each time they hit a hazard and the hand and foot print icons will 'freeze' momentarily so that the player also loses some time in the game.

C. Game Set Up

You will be using the **eAg** desktop icon to start the enAbleGames Launcher. Select "KOLLECT" on the left side, and click Start to open the game.

Pre-Game Settings

1. Once you click the icon you now have opened the game and can adjust settings to get ready to play. The first screen you will see is: enAbleGames KOLLECT configuration. In this dialog box you will see the enAbleGames Logo and three settings will appear.

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2. Be sure the settings are set as indicated below. These settings may need to be adjusted depending on the type of screen you use to connect to the laptop. Use the drop-down menu for each setting to reset them if these values do not automatically appear:
   a. Screen: 1920 x 1080
   b. Graphics Quality: Fastest
   c. Select Monitor: Display 1
3. When you confirm the settings for your equipment - press **"Play"**.

Main Menu

1. The next screen that appears is the login screen. Log in using your email address and the password you created for enAbleGames.

2. The next screen you will see is the <u>Main Game Screen</u> where you set up game parameters. You will see the KOLLECT name and there are four choices on this screen:
   a. <u>Play</u>: to begin playing the game.
   b. <u>Set-up</u>: to set up your game parameters.
   c. <u>Load/Save</u>: to save the parameters, type in the name of the Player Profile. This should be unique to each player (i.e., child ID and date) and hit the save button.
      i. Once the parameters have been given a unique name and saved, it appears in the dropdown menu of the Player Parameters window.
      ii. To load the parameters, open the dropdown menu, click the unique name you gave the parameters, and then click "load".
   d. <u>Quit:</u> if you want to exit the game.

<h2 style="text-align:center; color:#4472C4;">Calibration Screen</h2>

1. In this screen you will see an avatar with hand and foot prints. There will be a red calibration square around the avatar or hand and foot prints with blue grid lines and a square 'hook' in the center of each side of the square.
   a. This hook is so you can drag the calibration square to set the area where you want the objects to 'spawn' or populate to meet the player's needs and the therapy goals. Calibration can also be changed for each phase.
   b. The screen shot below shows the red calibration square with blue grid and square hooks:

2. When calibration is complete, press "done" at the bottom of the screen – now the game will begin!
3. When game play starts you may see the player in a small figure on the lower left corner – to remove this figure hit key '3'.

4. You will see the avatar during calibration but it disappears as soon as game play starts.

Adjustments during Game Play

1. Wave time (the # of seconds the objects and hazards are on the screen) can be adjusted in real time:
    a. [left bracket- shortens wave time (the wave or phase is faster).
    b.] right bracket- lengthens wave time (the wave or phase is slower).
    c. Adjusts on a 0.5 second interval with each key stroke.
2. The calibration square can be adjusted in real time:
    a. Use the number pad (number locks needs to be on). Choose one of the following four numbers to move different sides/edges of the square:
        i. 2: moves the bottom edge of the square.
        ii. 4: moves the left edge of the square.
        iii. 6: moves the right edge of the square.
        iv. 8: moves the top edge of the square.
    b. Then use the Left and Right arrow keys to move the edge of the square out or in (for the L & R sides) or up and down (for the top and bottom sides).
    c. Hold down the arrow to move the sides/edges.
3. You may exit the game at any time during game play by pressing the escape/ESC key or by pressing Alt-F4. You will return to the main menu.

II.   Parameter Guide

There are over 13 game parameters that can be set to create a customized gaming experience for the player. All parameters have default settings but clinicians may opt to set specific parameters to focus on a player's needs and abilities and to work toward achieving specific therapy goals.

Below is a series of screen shots to illustrate game parameters and available choices to customize those parameters. Before the game begins, the clinician will decide the goal for using the game in the therapy session.

For example, the clinician may want to…
- o work on physical activity or mobility endurance and may set the 'Game Duration' at a higher level for longer duration (0 – 60 minutes).
- o set up 'barriers' to collecting objects and may choose to add hazards that the player must navigate to get to objects.
- o have the player move quickly and may set lower 'wave time' (0 – 60 seconds) which is the amount of time the objects and hazards are on the screen and available for the player to collect or avoid.
- o set columns, grids, and weights so that objects and hazards mostly populate one area of the screen to work on more concentrated movements of reaching or weight shift.
- o set F/X effects (special effects) to best meet the players cognitive and other sensory needs such as turning off noise, decreasing flying objects, or increasing particles and splats to increase motivation and fun.

Definitions for all game parameters and response choices are listed below.

By hovering over an option with the mouse, a tool tip will appear on the bottom left side of the gaming screen.

Phase Number:
- o Two buttons at the bottom of the Setup page allow you to move between settings and create custom settings for Phases 1, 2, and 3.

Theme:
- o Definition: Allows choice of eleven game themes for each phase of the game.
- o How it works: Scroll through the themes and press icon to choose theme.

Select Background Separately:
- o Definition: Allows choice of using a theme and a set of objects from different themes. For example, the shapes background can appear with the spooky themed objects.
- o How it works: Select a check ON or OFF.

Make Background Lighter/Make Background Darker:
- o Definition: Allows background to be made lighter or darker, or use both sliders to make the background grayer.
- o How it works: Slider bar- Click and drag the button from 0-175.

Dynamic Wave Time:
- o Definition: Allows automatic changes in wave speed based on player's performance.
- o How it works: Select a check ON or OFF.

Phase Length:
- o Definition: Sets time for the length of each phase.
- o How it works: Slider Bar- Click and drag the button from 1-60 minutes.

Wave time:
- o Definition: Sets time for the length of each wave of objects.
- o How it works: Slider Bar- Click and drag the button from 1-30 seconds.

Rest Time:
- o Definition: Sets time between waves.
- o How it works: Slider bar- Click and drag the button from 0-10 seconds.

Bonus Time:
- o Definition: Sets duration of the Bonus Wave. A longer bonus wave time means the bonus objects move slower across the screen.
- o How it works: Slider Bar- Click and drag the button from 4-12 seconds.

Bonus Round:
- o Definition: Allows choice of including bonus rounds in the game.
- o How it works: Select a check ON or OFF.

Enable Combos:
- o Definition: Allows choice of including combos in the game.
- o How it works: Select a check ON or OFF.

Wave Fail:
- o Definition: Allows increase in phase time if previous wave is failed.
- o How it Works: Slider bar- Click and drag the button from 0.5-10 seconds. Dynamic wave time must be on for this to work.

Wave Win:
- o Definition: Allows decrease in phase time if the previous wave is cleared.
- o How it Works: Slider bar- Click and drag the button from 0.5-10 seconds. Dynamic wave time must be on for this to work.

Hazards:
- o Definition: Sets number of hazards per wave.
- o How it Works: Slider Bar- Click and drag the button to set the number of hazards from 0-64.

Hazard Scale:
- o Definition: Sets the size of the hazards.
- o How it Works: Slider Bar- Click and drag the button from 0.5-5 (R = increase hazard size L = decrease hazard size).

Object Scale:
- o Definition: Sets size of the objects.
- o How it Works: Slider Bar- Click and drag the button from 0.5-5 (R = increase object size L = decrease object size).

Objects:
- o Definition: Sets number of objects per wave.
- o How it Works: Slider Bar- Click and drag the button to increase or decrease number of objects from 0-64.

Attract Radius:
- o Definition: Sets distance between objects and handprints to draw the object to the handprints.
- o How it works: Slider Bar- Click and drag the button from 0-10 (R = increase distance L = decrease distance).

Attract Speed:
- o Definition: Sets the speed an object will travel towards a handprint once attract is initiated.
- o How it Works: Slider Bar- Click and drag the button from 0-1 (R = increase speed L = decrease speed).

Attract Delay:
- o Definition: Sets the time a handprint must remain within attract radius of an object for the object to be attracted to the hand.
- o How it Works: Slider Bar- Click and drag the button to set from 0-10 seconds.

Attract Hazards:
- o Definition: This will turn on or off the attract feature for hazards.
- o How it Works: Select a check ON or OFF.

Disabled Time:
- o Definition: Allows the hand and footprints to freeze after player hits a hazard. Player is unable to collect objects or hit hazards while frozen.
- o How it Works: Slider bar- click and drag to set time from 0-5 seconds.

Grid

Grid Left/Right/Bottom/Top:
- o Definition: Similar to calibration, allows the user to change the size of the grid that objects will appear within.
- o How it Works: Slider bar- click and drag from 0-1 to set each side.

Columns:
- o Definition: Allows objects to spawn in specific areas (columns) on the screen.
- o How it Works: Slider Bar- Click to drag the button to set the number of columns (between 0-10 columns).

Rows:
- Definition: Allows objects to spawn in specific areas (rows) on the screen.
- How it Works: Slider Bar- Click to drag the button to set the number of rows (between 0-8 rows).

Horizontal Weights:
- Definition: moves objects and hazards to LEFT (+) or RIGHT (-) in the Grid
- How it Works: Slide Bar to left or right.

Vertical Weights:
- Definition: moves objects and hazards UP (-) or DOWN (+) in the Grid
- How it Works: Slide Bar to left or right.

Limbs

- o Definition: Allows one or both handprints or one or both footprints to be used by the player.
- o How it Works: Select a check ON or OFF for left or right handprint or left or right footprint to be displayed.

Helper:
- o Definition: Sets a visual effect in which an object is surrounded by a blue circle to encourage the player. A blue 'tracker' or line will lead the player to the next object for a 'combo' score. Disappears once combo is broken.
- o How it Works: Select a check ON or OFF.

Shake:
- o Definition: Allows a 'screen shake' when the player hits a hazard.
- o How it Works: Slider Bar- Click and drag the button from 0-1 (R = increase intensity L = decrease intensity). The default is 1.

Show Character:
- o Definition: Allows display of a large avatar and/or a small video image of the player.
- o How it Works: Select a check ON or OFF.

Particles:
- o Definition: Allows glitter or twinkles for hitting an object.
- o How it Works: Select a check ON or OFF.

Fly In:
- o Definition: Allows objects to drop down to populate the screen in a new wave rather than just appear.
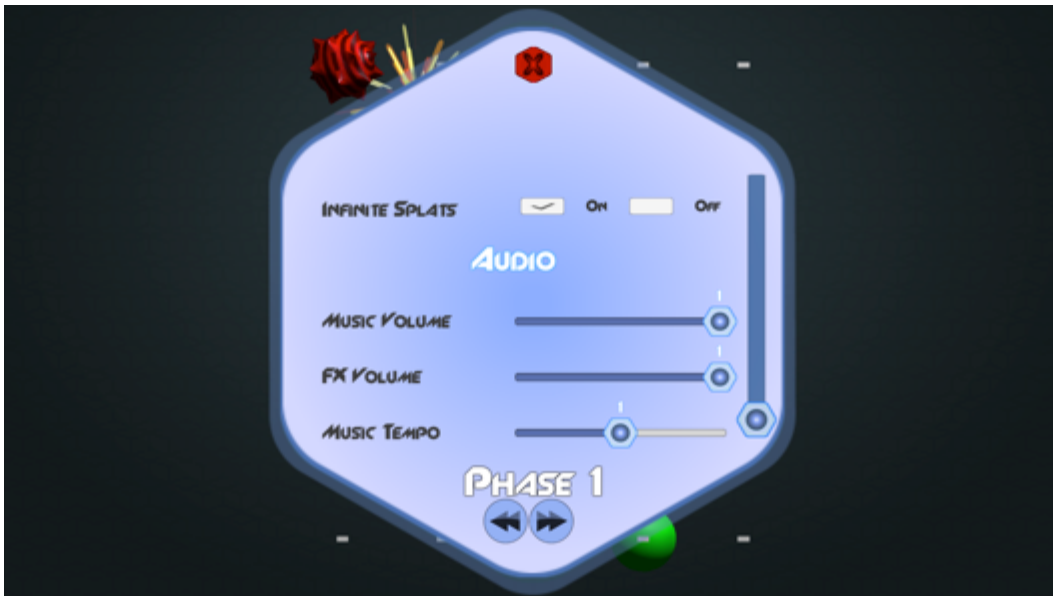- o How it Works: Select a check ON or OFF.

Splats:
- o Definition: Sets up a paint splatter in response to an object being collected.
- o How it Works: Select a check ON or OFF.

Infinite Splats:
- o Definition: Allows splats to stay on screen until a hazard is hit to clear screen.
- o How it Works: Select a check ON or OFF.

Music Volume:
- o Definition: Allows changes in volume.
- o How it Works: Slider Bar- Click to drag the button to change volume from 0-1 (R = increase, L = decrease).

FX Volume:
- o Definition: Allows changes in volume for effects.
- o How it Works: Slider Bar- Click to drag the button to change volume from 0-1 (R = increase, L = decrease). The default is 1.

Music Tempo:
- o Definition: Allows changes in tempo of background music.
- o How it Works: Slider Bar- click to drag the button to change tempo from 0-1.5.

D. Choosing Number of Phases to a Game

1. The original KOLLECT consisted of three phases based on Exercise Prescription: Warm-up; Conditioning; Cool-Down. These phases are no longer part of the game parameters. You can build in these exercise principles into the game, or set up a game with only one phase and theme or as many as you want – like creating levels!
2. When you are done with the phases set-up you will hit the red X in the upper middle of the game parameter dialog box.

E. Setting Game Parameters and Saving Player Profiles

1. Click the Set-up button and set your gaming parameters.
2. Press Load/Save and give the player profile a unique identifier.
3. Press Play and the session will play with the Player Profile you saved.
   a. If you want to pull up the Player Profile in the next therapy session, hit load/save and use the pulldown menu to find the name of the Patient Profile you want to play again. You can also add a new unique profile or revise an old one.
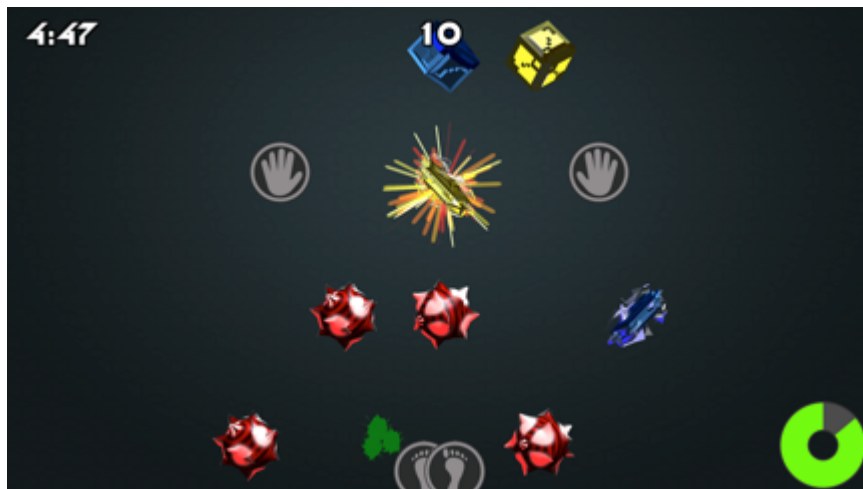
III. KOLLECT Game Themes

A. <u>Shapes</u>: Objects are brightly colored (blue, green, yellow) shapes (circles, squares, triangles, pentagons). Hazards are red, round spiked objects.

B. <u>Gems</u>: Objects are brightly colored (blue, green, yellow) gems. Hazards are red, round spiked objects.

C. <u>Sports</u>: Objects are different sports balls (football, baseball, basketball, soccer ball, hockey puck). Hazards are red referee whistles.
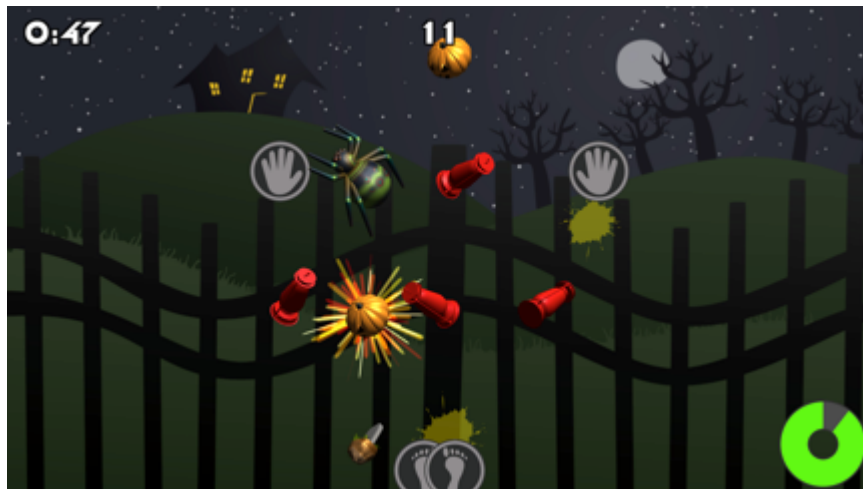
D. Space: Objects are spaceships that are different sizes (small, medium, large) and different colors (yellow, green, blue). Hazards are red asteroids (space rocks).

E. Fruit: Objects are different kinds of fruit (pears, bananas, grapes, apples). Hazards are red candies.

F. Spooky: Objects are spiders, pumpkins, gravestones, coffins, and ghosts. Hazards are red lanterns.

G. Kittens: objects are different color kittens with funny hats and costumes. Hazards are red mice.

H. Pets: objects are pets (dogs, cats, hamsters, birds, fish, rabbits). Hazards are red cages.

I. Fantasy: Objects are shields, helmets, bows & arrows, mallets, swords. Hazards are red dragons.

J. <u>Vehicles:</u> Objects are different colored (yellow, blue, red) cars, sailboats, airplanes, school buses. Hazards are red gas cans.

K. <u>Cowboys:</u> Objects are cowboy hats, sheriff badges, cowboy boots, tumbleweeds, and lassos. Hazards are red sticks of dynamite.

IV.   Premade Profiles

Profiles are collections of saved parameters. They can be used to store a configuration of the game for a particular person, or for a specific therapy goal. Kollect is shipped with several profiles:
LEBA – Lower Extremity Balance Activity
LEMA – Lower Extremity Muscular Endurance
UERA – Upper Extremity Reach Activity

Opening the Profile:
- Click the "Load/Save" button.
- Click the drop down menu next to the "Load" button and select the LEBA/LEMA/UERA profile and then click "Load."
- You will be returned to the title screen and the profile will be loaded.
- Click "play."

A. LEBA: Lower Extremity Balance Activity Profile

Purpose:
The purpose of this game is to promote standing balance with stability or standing balance with mobility, depending on the calibration square chosen. Players will collect objects using feet only. Players will be required to balance on one leg while they collect objects with their other leg.

Adjusting the Calibration Square:
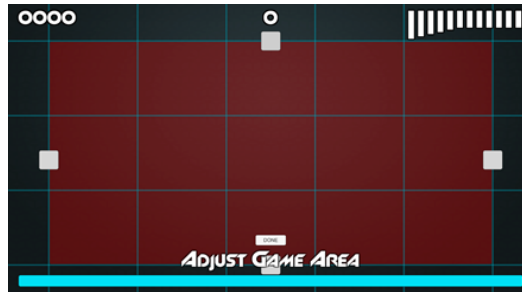
You will now be in the red calibration square interface.
- The player stands in front of the Kinect sensor (6 feet back)
- An avatar appears in the calibration square
    - If the avatar is distorted or does not otherwise represent the posture of the player, wave your hand closely in front of the Kinect sensor camera to recalibrate it.
- The 'hooks' (white squares) at the center of each side of the calibration square are adjusted.
    - The calibration square is the play area, or where the items will actually be falling.
    - For this profile, the player only uses the feet icons
    - We recommend that the top margin of the calibration square be placed about the knee and the bottom margin at the ankle so that the player must balance on one leg to collect objects.
- The left and right margins can be narrow or wide, depending on how much you want the player to move during game play.
    - **MOBILITY:** For a game experience that focuses on balance with movement, it is recommended to use a wider calibration square. Adjust the left and right parameters to be at least fingertip width when the player is in "T" formation.
    - **STABILITY:** For a game experience that focuses on balance and stability, it is recommended to use a narrower calibration square. Adjust the left and right parameters to be at elbow width when the player is in "T" formation.
- When the calibration square is set, click the "Done" button.

B. LEME: Lower Extremity Muscular Endurance Profile

Purpose:
The purpose of this game is to build lower extremity muscular endurance by performing squatting movements. It is recommended that the players bend their knees, rather than flex their hips or bend at the waist for lower extremity exercise.

Adjusting the Calibration Square:
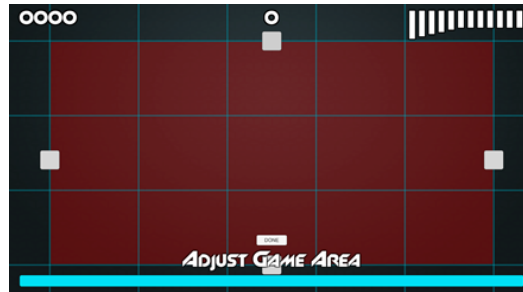
You will now be in the red calibration square interface.
- The player stands in front of the Kinect sensor (6 feet back)
- An avatar appears in the calibration square
    - If the avatar is distorted or does not otherwise represent the posture of the player, wave your hand closely in front of the Kinect sensor camera to recalibrate it.
- The 'hooks' (white squares) at the center of each side of the calibration square are adjusted.
    - The calibration square is the play area, or where the items will actually be falling.
    - For this profile, the player **only uses the hand icons**
    - We recommend that the **top margin** of the calibration square be placed about **mid-thigh** (or at the knee) and the **bottom margin** at **mid-calf** (or at the ankle) so that the player must squat to collect objects.
    - When setting the calibration square, consider knee flexion angle when squatting (~90 degrees).
- The left and right margins can be narrow or wide, depending on how much you want the player to move during game play.
    - To promote more movement, adjust the left and right edges to be at least at the fingertips of the player when their arms are spread out (in the letter "T" formation).
    - For a game with a smaller play area, adjust the left and right parameters to be at elbow width when the player is in "T" formation.
- When the calibration square is set, click the "Done" button.

C. UERA: Upper Extremity Reach Activity Profiles

Purpose:
These profiles encourages exercise of the upper extremities to emphasize the action of reaching and stretching using one or both arms. The player will be collecting objects from the top of the screen by extending their arms upward and outward.

Adjusting the Calibration Square:
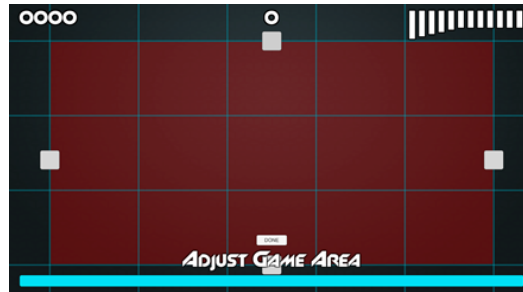
You will now be in the red calibration square interface.
- The player stands in front of the Kinect sensor (6 feet back)
- An avatar appears in the calibration square
  - If the avatar is distorted or does not otherwise represent the posture of the player, wave your hand closely in front of the Kinect sensor camera to recalibrate it.
- The 'hooks' (white squares) at the center of each side of the calibration square are adjusted.
  - The calibration square is the play area, or where the items will actually be falling.
  - For this profile, the player only uses the **hand icons**
  - The **top margin** of the calibration square be placed about **wrist height** when the player's arms are **extended upwards** to the sky.
  - The **bottom margin** of the calibration square should be placed at about **lower chest height** when the player's arms are extended upwards towards the sky.
- To promote reaching, we recommend the player keep their feet planted, allowing the player to pivot using trunk rotation and weight shift to gather the objects.
  - **FOR LEFT OR RIGHT PROFILE:** Have the player reach outwards on the side of the active arm (left arm to left side) and set the parameter at their fingertip. Now have the player reach across to their other side with the active arm (left arm to right side), and set the parameter at their fingertip.

- o **FOR BILATERAL PROFILE:** For this game type, adjust the left and right parameters to be at elbow width when the player is in "T" formation.
- When the calibration square is set, click the "Done" button.

- Gameplay (Gems)
    - o The player will have a 5 minute gameplay session.
    - o This game phase will have six objects in each 'wave,' and the game speed is fast.
    - o If the player collects all of the objects in one 'wave,' they enter the 'bonus wave' in which items fly in quickly.

During gameplay, the parameters can be adjusted to change the player's experience.
- To adjust game speed (wave length) during the game session use the bracket keys
    - o Left bracket ([ ) = game speed is faster (each wave is shorter)
    - o Right bracket ( ]) = game speed is slower (each wave is longer)
    - o A longer wave time will give the player more time to collect objects. This is preferable for players who are struggling to collect the objects or players who are overly exhausted.
- If the calibration square is too wide or too narrow, it can be adjusted mid-game to improve gameplay.
    - o To change the calibration square during the game session
        - ▪ Make sure NUMLOCK is on
        - ▪ On the key pad, the numbers 8, 2, 4, 6 correspond to the top, bottom, left, and right calibration square edges respectively
        - ▪ To select the edge you want to adjust, press the corresponding number and use the left and right arrow keys to move the edge and resize the calibration square.
        - ▪ You will see a red line on the screen indicating the edge of the revised calibration square.

Saving Game
In order to save the progress or specific parameters for a player, the game can be saved and loaded for later use.
- Upon completion of the game, you will be presented with a score screen. The player's score and movement data are automatically saved to the web portal.
- Click the 'Main Menu' button.
- Click the Load/Save button.
- Next to the 'Save' text box, enter a file name that you would like to be associated with the player.
- Click 'Save'
    - o The player's unique parameters are now saved and can now be loaded for the next time they play.