

3D TicTacToe, Magic/AntiMagic & Word Jumble Diamonds

These games provide the user the opportunity to exercise and enhance their mathematical, vocabulary and logic skills while enjoying the challenge of a 3D game.

The playing area for these games is the surface of a sphere which has been organized into diamond shaped boxes each diamond being divided into four identifiable overlapping quadrants. With quadrant overlap the playing area is arranged into six (6) unique diamonds. The playing surface can be rotated ninety (90) degrees either vertically or horizontally thus providing twenty-four (24) different views (six unique diamonds each with four different views). With quadrant overlap it is possible to view all twelve (12) distinct quadrants with either four continuous vertical or horizontal rotation of the playing surface. The **Controls** section at the end of this doc provides information regarding the Buttons which enable playing and controlling the games. Fig 1. displays a sample of each of the three playing screens.

Each game has a 'Not started', 'Running' or 'Completed' state and the button controls are enabled or disabled to allow changes only while the game is in the 'Not started' state. For consistency all the games can be sequenced thru the clear, change settings and start/run to completion state. You can clear a game at any time.

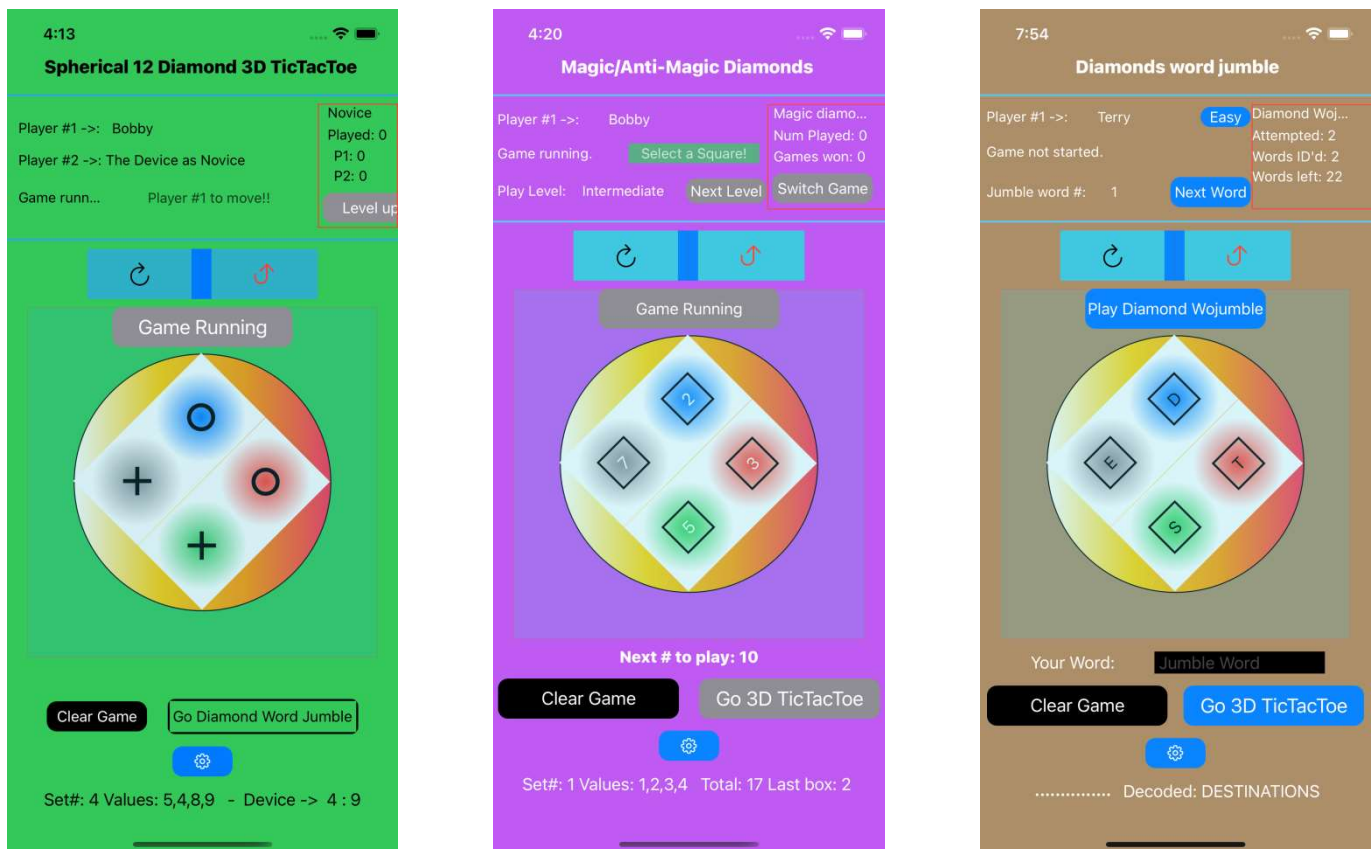


Fig 1. The three different game screens

Tic-Tac-Toe

3D TicTacToe is similar to the 2D version in that the winner is the first one who captures a complete set. The difference here is instead of sets being three in a row, a set in 3D TicTacToe is all four quadrants of the same diamond. See Fig. 2. With 3D TicTacToe, you are playing against your device (iPhone or iPad) and you can play at either Novice – you could win, Intermediate – winning less likely or Master – (yes you guessed it, impossible to win) level. At Novice level, your device will simply guess to select the quadrant, but at Intermediate and Master levels your device plays aggressively to win. Scores are recorded for games played, games drawn and games won at the various levels. Note that a Player's name is required to play all the games, but if embarrassed by your scores, feel free to change your

name. You can use Show Set hints to improve your knowledge of the layout of the playing surface.

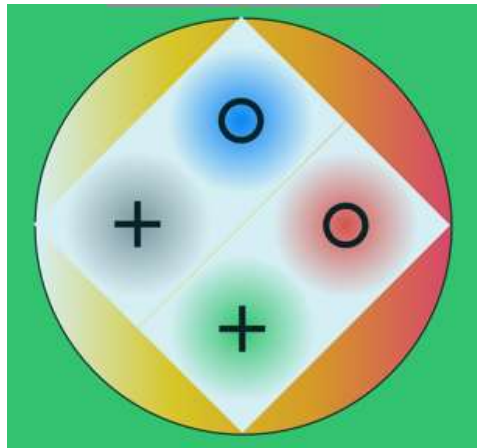


Fig 2. 3D Tic Tac Toe Diamond

Magic/AntiMagic squares (Diamonds)

Magic/AntiMagic squares (diamonds) is a game intended to exercise and improve math and logic skills. In this game you are provided twelve (12) different numbers and the goal is to place the numbers into the quadrants and have all quadrants of each diamond add to the same (Magic squares) or all different (AntiMagic) total(s). 3D AntiMagic add a little twist in defining AntiMagic winning games as those where all the totals are different and all even or all odd. Additionally you can choose from three (3) different sets of numbers (difficulty level varying). Fig 3. displays a running AntiMagic game sample.

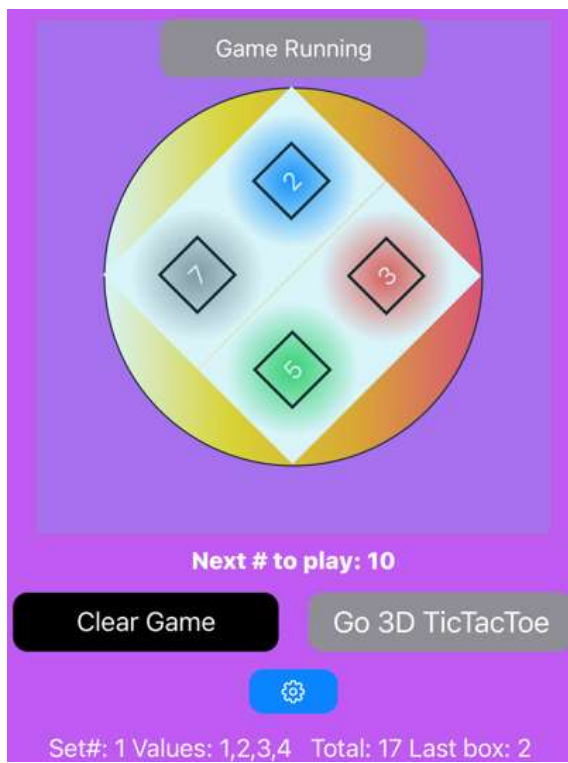


Fig 3. Magic/Antimagic sample

Diamond Word Jumble (Wojumble)

With Diamond Word Jumble, the letters of a 12 character word are dispersed across the twelve (12) quadrants of the three diamonds. The goal is to successfully identify (decode) the word. You have the ability to enable or disable word hints and Set hits to assist with word identification. In addition to tracking successful decodes, attempts are also tracked where an attempt is seven (7) or more characters of the word entered. Fig 4. displays a sample game in play.

The Wojumble game offers two sets of twenty-four words with one set categorized as easy and the other categorized as hard. The easy set are all twelve character words (no hyphenation or spaces), but the hard set includes words with a hyphen and some solutions are two words (space separated of course).

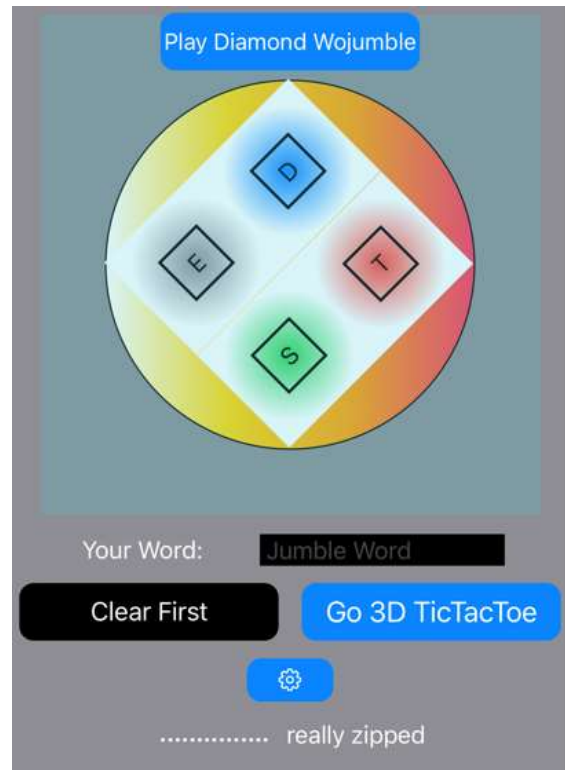
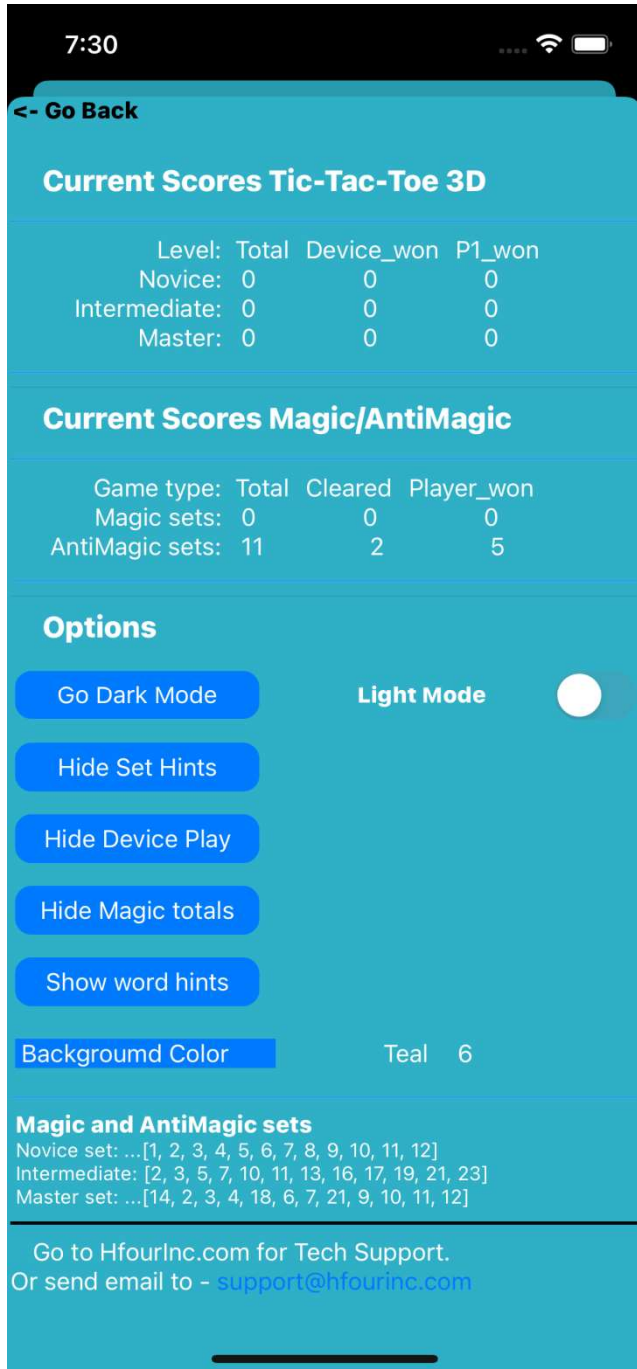


Fig 4. Sample Word Jumble

Options/Settings:

The App provides a settings screen where the user can enable or disable various options to enhance the playing experience. All these buttons are toggles except for Background Color..



The Buttons on the Options screen allow you to customize your playing environment.

Go Dark/Light Mode – Change the display to alleviate any text contrast issues.

Show/Hide Set Hints – All display Diamonds are comprised of four quadrants identified as a set. The set members listed left to right are identified in order beginning top center through a counter-clockwise rotation.

Show/Hide Device Play – When Show active, game will display Diamond Set # and Quadrant # where device plays.

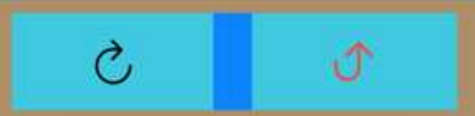


Show/Hide Magic totals – When Show is active the game will display the running sum for the currently displayed Diamond Set.

Show/Hide word hints – When Show is active the game will display the hint associated with the current word jumble.

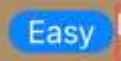

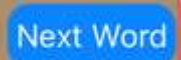
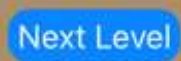

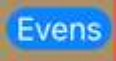
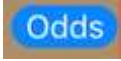


Background Color – To change the background color, touch the text for the current color. When the pop-up menu appears make your new color choice.

Game controls:

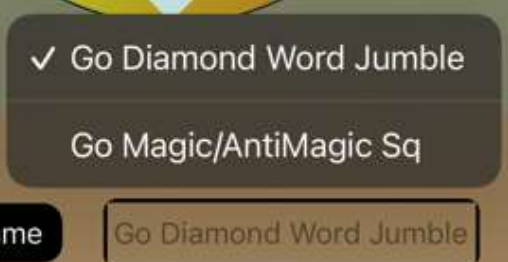
Always active Buttons:

	<p>These two (2) buttons rotate the playing surface ninety degrees right horizontally or ninety degrees up vertically.</p>
	<p>These two Buttons Clear First and Clear Game are used to reset/clear the game. Enables start new game or change game settings (Easy/Hard, Odds/Evens etc).</p>
	<p>This Button opens the Options screen and enables the changing of various settings.. (See Options section)</p>

Only active when Game Not Started: (Grayed when disabled)

		<p>Easy/Hard buttons reflects the level of the current Word jumble game and are also toggles to the other level.</p>
	<p>Enables moving to the next word in the sequence for this Word jumble game.</p>	
	<p>Button used to change the difficulty level in the TicTacToe and Magic/AntiMagic games.</p>	
	<p>Button used to switch between Magic and AntiMagic games.</p>	
		<p>Button indicates if Even or Odd totals needed to win AntiMagic game. Is also a toggle between states.</p>
	<p>Tapping this Button will return to the TicTacToe game from the Magic/Antimagic or Word Jumble games.</p>	
	<p>Each game has a Start button with specific text and the button is used to start the game running. It also reports the status of the game "... running" or ". Completed"..</p>	

Special Button:

	<p>This is a dual-function button and is used to navigate to the Magic/AntiMagic game screen or to navigate to the Word Jumble screen. To navigate simply Tap the button if your destination game is the target.. To change it's displayed destination, touch and hold the button and when the pop-up menu appears, make your selection.</p>
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