

# Abstract Fish Doodle User Guide

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## Introduction

Abstract Fish Doodle is an innovative, free-form painting application. In traditional graphics applications, the user selects and moves a brush in order to draw an object. When the user stops moving the brush, the brush stops drawing the object. In Abstract Fish Doodle, the brush constantly moves across the screen. By setting the brush type, color, blending mode, path, and boundary, the user can create a brush that draw a variety of shapes. Also, unlike traditional painting applications, multiple brushes can appear on the screen at the same time with each brush drawing its specific pattern for the user. In addition, for adventurous artists, Abstract Fish Doodle has a Surprise button. Pushing this button causes Abstract Fish Doodle to randomly choose a configuration of brushes to place on the screen. By placing AFD in auto surprise mode, the user can relax while AFD draws its next masterpiece.

The purpose of Abstract Fish Doodle is to allow both skilled and non-skilled artists to create abstract images. Beautiful images can be created in minutes. In addition, Abstract Fish Doodle is entertaining to watch. The floating brushes have a Zen quality to it that is similar to watching fish in an aquarium. Use it to relax; use it to be creative. Whether for work or play, Abstract Fish Doodle is fun.

In AFD, the user selects a set of attributes that a brush can potentially have. The user also sets the number of brushes to appear on the screen. When the “Draw” or “Surprise” button is pressed, AFD creates a brush and gives it characteristics randomly chosen from among the attributes selected by the user. Since a brush’s characteristics are randomly chosen, there is always an element of surprise and variation as to what the brush will do on the screen. However, since those characters are chosen from the set of attributes created by the user, the user can place limits on what the brushes can and cannot do. Drawing with AFD is like composing music. The artist sets attributes like a composer writes musical notes on a score. After the score is complete, a musician (or in our case the iPhone) plays the score to create music. AFD translates the brush settings the user has made into a moving image. And like a musician, an AFD artist can improvise during the drawing by setting attributes while the brushes are drawing to alter brush characteristics. The artist can choose between letting AFD complete the drawing on its own or taking control of the drawing process by setting attributes while the brushes are drawing.

AFD consist of 12 tabs or screens. The screens are the following:

### Canvas Page

The Canvas page displays the AFD drawing. This page consists of a “canvas” and four buttons.

#### Canvas

The canvas displays the image as it is being drawn. The user can touch within the canvas area to move the brush position to the location of the touch. Users can also drag a brush to follow the path of the touch across the canvas. Users have

## Buttons

There are four buttons:

### Draw

The “Draw” button creates a new set of brushes with characteristics that are randomly chosen from the attributes set by the user and then start the brushes to move across the canvas to begin an image. Whenever the “Draw” button is pushed, a new set of characteristics is given to the brushes. These new will cause the brush to draw in a different way. Repeatedly pushing the “Draw” button is a good way to introduce subtle differences in the brushes’ behavior. Pushing “Draw” will also cause a “paused” drawing to resume drawing again.

### Clear

The “Clear” button erases the drawing that is on the canvas – returning the canvas to its original light gray background. When the user presses the “Clear” button, a dialog appears, asking the user if he really wants to erase the drawing. If the user selects “OK”, the drawing is erased. If the user selects Cancel, the drawing is not erased. Clearing the screen does not stop a drawing in progress. “Clear” erases what’s been drawn so far and commences drawing after the erasure. The brush settings are not affected by the “Clear” button.

### Pause/Resume

When the user presses “Pause”, all brushes stop. The button name changes from “Pause” to “Resume.” When the user selects “Resume”, the brushes start drawing again.

### Surprise Me

“Surprise Me” is like the “Draw” button except that “Surprise Me” causes AFD to randomly select the brush attributes for the user using the criteria found on the Surprises page. After the brush attributes have been randomly selected, a new set of brushes are created with characteristics that are randomly chosen from the randomly chosen attributes. “Surprise Me” radically changes brush behavior. Repeatedly pushing “Surprise Me” can create very interesting designs.

## **Favorites Page**

The Favorites page allows users to save their favorite brush settings . Users can also load previously saved settings. Currently, the names of saved settings are automatically generated by AFD. This saves

the user for having to use the keyboard. One setting that comes with the application is “01 Default Settings.” Loading this setting will return AFD to the state that the application had when it was shipped.

## **Colors I**

A brush color scheme can be selected from this page. When the user picks a color scheme in the picker list, the colors associated with the color scheme appear below. Each brush is automatically assigned a color from the color scheme. The color that is associated with the current brush (whose ID is given by the “Selected Fish ID” field) is surrounded by a yellow rectangle. To see the colors assigned to the other brushes, increment or decrement the “Selected Fish ID.” To change the assigned brush color to another color within the color scheme, touch the rectangle that contains the desired color. The color will be surrounded by the yellow rectangle which indicates that the color is assigned to the brush with the given ID. If users wish to further adjust a color from the color scheme, he can go to the Colors II page to modify the color’s hue, saturation, brightness, and alpha (transparency).

Using color schemes makes it easier for users to develop images that have harmonious colors. Once a color scheme is chosen, AFD will randomly assign brushes colors from the color scheme each time the “Draw” button is pressed.

Each time the “Surprise” button is pressed a new color scheme is chosen for the brushes. Users have the option of preventing this from happening by changing the option on the “Surprises” page. Also the user can select which groups of color schemes (Cool, Earth, Warm, Gray, Pastels) should be considered when the “Surprise” button is pressed. These options can be set on the “Options” page.

## **Colors II**

Each brush can have two colors. Both colors are evenly mixed in the brushes spray pattern. Colors II uses sliders to allow the user to adjust the hue (color), saturation (color richness), brightness, and alpha (opaqueness) of the two colors used by the brush with the Selected Fish ID. To modify the colors assigned to the other brushes, increment or decrement the “Selected Fish ID.” The colors shown on this page always track the color of the currently selected brush.

## **Brushes**

The user selects the brushes he wishes to see when the “Draw” button is pressed. “On” indicates that a brush should appear and “Off” indicates that the brush should not appear. If the number of brushes selected to appear is greater than the “Number of Fish”, then AFD randomly selects a brush for each fish from the “On” brushes. If the number of brushes is less than the “Number of Fish”, then AFD assigns each “On” brush to a “fish” and then randomly choose among the “On” brushes for the remaining fish.

If the user changes the brush selection while AFD is drawing, AFD automatically reconfigures the fish to incorporate the new brush selection. Fishes connected to brushes whose “On” state hasn’t changed remain the same. But fish whose brush state was turned from “On” to “Off” are either assigned a brush whose state went from “Off” to “On”, or if that case does not exist; assigned one of the brushes that

was already “On.” The change will automatically take place when the user goes back to the canvas page.

As the user turn on more brushes, the “Number of Fish” increment to match the number of brushes. AFD assumes that in most cases, the user will want one brush for each fish. If the user wants the number of brush options to remain greater than the number of fish, he has the ability to decrement the number of fish while maintaining the number of brushes turned on. For example, if the user wanted to use different combinations of brushes from a particular set of brushes each time the “Draw” button is pushed, the user would turn on all of the desired brushes for the set and set the number of fish to be the number of brushes used for draw command. AFD would automatically generate different combinations of brushes to be used each time the “Draw” button is pressed.

AFD randomly turns on one to four brushes when the “Surprise” button is pushed. Subsequent touches of the “Draw” button will use the selection of “On” brushes generated by the “Surprise” button until either the user manually changes the brush selection or another touch of the “Surprise” button changes the brush selection.

The available brushes are:

Spot

Basic Spray paint pattern

Graffiti

Line surrounded by a light spray pattern

Spot

“Spotted” spray pattern

Dab

Spray pattern consisting of arcs

Dribble

Thin dashed spray pattern

Brush

Multiple lines of spray

Stamp

Dense spray pattern that looks solid

Pen

Diamond spray pattern that is partially transparent

### Random

Each time the brush changes direction, AFD randomly sets the brush to be one of the first eight spray patterns.

### **Paths**

The user selects the path he wishes the brush to follow when the “Draw” button is pressed. “On” indicates that the path should be used and “Off” indicates that the path should not be used. If the number of paths selected to be used is greater than the “Number of Fish”, then AFD randomly selects a path for each fish from the “On” paths. If the number of paths is less than the “Number of Fish”, then AFD assigns each “On” path to a “fish” and then randomly choose among the “On” paths for the remaining fish.

If the user changes the path selection while AFD is drawing, AFD automatically reconfigures the fish to follow the new path selection. Fishes connected to paths whose “On” state hasn’t changed remain the same. But fish whose path was turned from “On” to “Off” are either assigned a path whose state went from “Off” to “On”, or if that case does not exist; assigned one of the paths that was already “On.” The change will automatically take place when the user goes back to the canvas page.

As the user turn on more paths, the “Number of Fish” increment to match that number. AFD assumes that in most cases, the user will want one path for each fish. If the user wants the number of path options to remain greater than the number of fish, he has the ability to decrement the number of fish while maintaining the number of paths turned on. For example, if the user wanted to use different combinations of paths from a particular set of paths each time the “Draw” button is pushed, the user would turn on all of the desired paths for the set and set the number of fish to be the number of paths used for draw command. AFD would automatically generate different combinations of paths to be used each time the “Draw” button is pressed.

AFD randomly turns on one to four paths when the “Surprise” button is pushed. Subsequent touches of the “Draw” button will use the selection of “On” paths generated by the “Surprise” button until either the user manually changes the brush selection or another touch of the “Surprise” button changes the path selection.

The available paths are:

### Diagonal

The brush moves diagonally across the canvas.

### Horizontal-Vertical

The brush moves horizontally and vertically at random intervals.

### Diagonal-Horizontal-Vertical

The brush moves horizontally, vertically and diagonally at random intervals.

### String

The brush follows the path of a series of connected curves across the canvas

### Rectangle

The brush traces the path of a series of disconnected rectangles.

### Oval

The brush traces the path of a series of disconnected ovals.

### Quadrangle

The brush traces the path of a series of disconnected quadrangles.

### Blob

The brush traces the path of an irregular loop.

### Random

Each time a path is drawn, AFD randomly sets the brush's new path to be one of the first eight paths.

## **Blends I**

Blend modes determine how the color being applied by the brush mixes with the color already on the canvas underneath the brush. Blend modes allow the user to generate new colors for the brush without changing the brushes color. Blend modes can be used to generate unexpected patterns.

The user selects the blend mode he wishes the brush to have when the "Draw" button is pressed. "On" indicates that the blend mode should be used and "Off" indicates that the blend mode should not be used. If the number of blend modes selected to be used is greater than the "Number of Fish", then AFD randomly selects a blend mode for each fish from the "On" blend modes. If the number of blend modes is less than the "Number of Fish", then AFD assigns each "On" blend mode to a "fish" and then randomly choose among the "On" blend modes for the remaining fish.

If the user changes the blend mode selection while AFD is drawing, AFD automatically reconfigures the fish to follow the new blend mode selection. Fishes connected to blend modes whose "On" state hasn't changed remain the same. But fish whose blend mode was turned from "On" to "Off" are either assigned a blend mode whose state went from "Off" to "On", or if that case does not exist; assigned

one of the blend modes that was already “On.” The change will automatically take place when the user goes back to the canvas page.

As the user turn on more blend modes, the “Number of Fish” increment to match that number. AFD assumes that in most cases, the user will want one blend mode for each fish. If the user wants the number of blend mode options to remain greater than the number of fish, he has the ability to decrement the number of fish while maintaining the number of blend modes turned on. For example, if the user wanted to use different combinations of blend modes from a particular set of blend modes each time the “Draw” button is pushed, the user would turn on all of the desired blend modes for the set and set the number of fish to be the number of blend modes used for draw command. AFD would automatically generate different combinations of blend modes to be used each time the “Draw” button is pressed.

AFD randomly turns on one to four blend modes when the “Surprise” button is pushed. Subsequent touches of the “Draw” button will use the selection of “On” blend modes generated by the “Surprise” button until either the user manually changes the brush selection or another touch of the “Surprise” button changes the blend mode selection.

AFD has 17 blend modes. Nine blend modes on this page. The blend modes are the following:

#### Normal

This is the brush’s default blend mode. The brush’s color replaces the color underneath the brush.

#### Multiply

The brush’s color is “multiplied” by the canvas color. The result is the brush’s color is darkened as it is applied to the canvas.

#### Screen

The screen mode is the opposite of the Multiply mode. The brush’s color is lightened as it is applied to the canvas.

#### Overlay

As the brush is applied to the canvas, light colors of the canvas become lighter and dark colors become darker.

#### Darken

Darken mode takes the darkest color component from the brush and the underlying canvas, and applies a new color made up of those darkest components to the screen.

### Lighten

Lighten mode takes the lightest color component from the brush and the underlying canvas and applies a new color made up of those lightest components to the screen.

### Dodge

This blend lightens the underlying canvas. The brighter the applied brush, the whiter the underlying canvas becomes.

### Burn

This blend mode is the opposite of Dodge. The darker the underlying canvas is, the more the color applied by the brush becomes black.

## **Blends II**

### Soft Light

This blend mode is similar to Overlay mode but softer.

### Hard Light

This blend mode combines the effects of Screen and Multiply blend modes.

### Difference

Difference mode subtracts the brush's color from the underlying canvas color.

### Exclusion

The exclusion mode is similar to the Difference mode except the contrast between colors is reduced.

### Normal (80%)

This mode is the Normal blend mode except the brush's opacity is 80% of its specified alpha value. This mode results in some details of the underlying canvas to be seen after the brush's color is applied.

### Normal (60%)

This mode is the same as Normal (80%) except the brush's opacity is 60% of its specified alpha value. This mode results in slightly more details of the underlying canvas to be seen after the brush's color is applied.

### Normal (40%)

This mode is the same as Normal (80%) except the brush's opacity is 40% of its specified alpha value. This mode results in slightly more details of the underlying canvas to be seen after the brush's color is applied.

#### Normal (20%)

This mode is the same as Normal (80%) except the brush's opacity is 20% of its specified alpha value. This mode results in slightly more details of the underlying canvas to be seen after the brush's color is applied.

#### Random

This mode randomly applies one of the 16 previous blend modes whenever the brush changes direction.

### **Bounds**

The user can create a boundary to contain a brush's move. When a brush runs into its boundary, the brush bounces off the border to travel in another direction within the boundary. The boundary's geometric shape is specified by the user. The boundary's location is randomly generated. The area of canvas enclosed by the boundary is also randomly generated. In general, the boundary's size is inversely proportional to the number of brushes on screen.

The user selects the boundary he wishes the brush to have when the "Draw" button is pressed. "On" indicates that the boundary should be used and "Off" indicates that the boundary should not be used. If the number of boundaries selected to be used is greater than the "Number of Fish", then AFD randomly selects a boundary for each fish from the "On" boundaries. If the number of boundaries is less than the "Number of Fish", then AFD assigns each "On" boundary to a "fish" and then randomly choose among the "On" boundaries for the remaining fish.

If the user changes the boundary selection while AFD is drawing, AFD automatically reconfigures the fish to follow the new boundary selection. Fishes connected to boundaries whose "On" state hasn't changed remain the same. But fish whose boundary was turned from "On" to "Off" are either assigned a boundary whose state went from "Off" to "On", or if that case does not exist; assigned one of the boundaries that was already "On." The change will automatically take place when the user goes back to the canvas page.

As the user turn on more boundaries, the "Number of Fish" increment to match that number. AFD assumes that in most cases, the user will want one boundary for each fish. If the user wants the number of boundary options to remain greater than the number of fish, he has the ability to decrement the number of fish while maintaining the number of boundaries turned on. For example, if the user wanted to use different combinations of boundaries from a particular set of boundaries each time the "Draw" button is pushed, the user would turn on all of the desired boundaries for the set and set the number of fish to be the number of boundaries used for draw command. AFD would automatically generate different combinations of boundaries to be used each time the "Draw" button is pressed.

AFD randomly turns on one to four boundaries when the “Surprise” button is pushed. Subsequent touches of the “Draw” button will use the selection of “On” boundaries generated by the “Surprise” button until either the user manually changes the brush selection or another touch of the “Surprise” button changes the boundary selection.

The user can choose from among seven boundaries:

None

The brush has no boundary and can travel anywhere on the canvas.

Rectangle

The brush is contained by boundary whose shape is a rectangle.

Oval

The brush is contained by boundary whose shape is an oval.

Quadrangle

The brush is contained by boundary whose shape is a quadrangle.

Triangle

The brush is contained by boundary whose shape is a triangle.

Curve

The brush is contained by boundary whose shape is a curve.

Blob

The brush is contained by boundary whose shape is a blob. In AFD, a blob is an area enclosed by two random curves whose ends are connected.

**Traits**

Traits are brush attributes. When the user turns a trait on before pressing the “Draw” button, the trait is applied to all brushes. If the trait is turned on or off while the brushes are drawing, the trait is turned on or off for the current brush which is indicated by the current Fish ID. When the user presses the “Surprise” button, each trait has a 50% chance of being turned on. AFD tries to give the user as many brush variations as possible for drawing.

The brush traits are the following:

Random Brush Shape

This trait enables AFD to randomly change the brush shape as the brush moves across the screen. The shape stays the same when this trait is turned off.

#### Random Brush Size

This trait enables AFD to randomly change the brush size whenever the brush changes direction. The brush's size stays the same when this trait is turned off.

#### Random Brush Turns

This trait enables AFD to have brushes travelling along paths that are diagonal, horizontal or vertical change directions at random intervals. The angle of the turn will also vary with this trait enabled. When this trait is turned off, diagonally, horizontally or vertically oriented brushes travel in a straight line until a boundary is encountered. The angle of the turn is 90 degrees when this trait is turned off.

#### Random Brush Density

This trait enables AFD to randomly change the brush's density whenever the brush changes direction. Brush density is the number of tiny bits of color within the brush's shape. A very dense brush is brush where the canvas cannot be seen underneath. The brush's density stays the same when this trait is turned off.

#### Brush Stroke Has Gaps

This trait cause broke strokes to skip along the canvas, creating gaps along the brush stroke. The size of the gaps and the frequency of the gaps occurring are random. The brush stroke will not have gaps when this trait is turned off.

#### Brushes Can Touch

By default, brushes travelling along paths that are diagonal, horizontal or vertical cannot touch other brushes travelling along diagonal, horizontal or vertical paths. When two brushes come within proximity of each, they just bounce off each other and travel in different directions. With this trait enabled, brushes travelling along diagonal, horizontal or vertical paths will be able to touch and pass through other diagonally, horizontally or vertically oriented brushes. With this trait disabled, the brushes will not be able to touch. Enabling or disabling this trait does affect brushes travelling along other paths such as rectangles, quadrangles, triangles, ovals, blobs, and strings.

#### Brush Completes Path

When this trait is enabled, brushes travelling along the following paths -- rectangles, quadrangles, triangles, ovals, blobs, and strings – do not complete the path. With this trait disabled, the brush traces the entire geometric shape of the path. When enabled, the brush

starts at a random point along the path; and stops at a random point along the path. The result is that the brush draws partial shapes.

#### Diagonal Can Cross Bound

Brushes cannot cross their assigned boundaries. By default, brushes travelling along paths that are diagonal, horizontal or vertical cannot cross into boundary of another brush. Enabling this attribute will allow diagonally, horizontally or vertically oriented brushes to cross into another brushes' territory.

#### Random Brush Attributes

If this trait is enabled, the distribution of particles with the brush shape will be randomized. The effect will be to provide many more different looking brush stroke patterns appearing on the canvas. Disabling this trait causes the brush's default particle distribution to be used.

### **Surprises**

When the "Surprise" button is pressed on the Canvas Page, AFD generates a random number of brushes to be used on the canvas. For each brush, a random set attributes – color, blend mode, path, boundary – are generated according to the settings on this page. Each switch represents a different set of attributes that can be controlled in Surprise mode. If the switch is on, surprise mode generates random sets of values for attributes associated with this switch. If this switch is off, surprise mode uses the current values for the attributes associated with the switch. Attributes that can be altered by the Surprise mode are the following:

#### Randomize Colors

If this switch is on, Surprise mode chooses a new color scheme for the brushes whenever the Surprise button is pressed. Each brush is assigned a color from the color scheme. If this switch is off, Surprise mode uses the current color scheme or color palette. Color schemes can be found on the Colors I page.

#### Randomize Traits

If this switch is on, Surprise mode randomly enables the traits found on the Traits page. If this switch is off, Surprise mode uses the current traits settings.

#### Randomize Brushes

If this switch is on, Surprise mode randomly selects up to four brushes. If this switch is off, Surprise mode uses the current switched on brushes. Brushes can be found on the Brushes page.

#### Randomize Paths

If this switch is on, Surprise mode randomly selects paths for the brushes. If this switch is off, Surprise mode uses the current switched on paths. Paths can be found on the Paths page.

#### Randomize Blend Modes

If this switch is on, Surprise mode randomly selects blend modes for the brushes. If this switch is off, Surprise mode uses the current switched on blend modes. Blend modes can be found on the Blends I and II pages.

#### Auto-Surprise

Auto-Surprise causes Surprise mode to automatically and continually generate Surprises at random intervals until Surprise mode is turned off. Switching Auto-Surprise on is like repeatedly pushing the Surprise button.

In addition, the Surprise page contains two other buttons:

#### Touch affects all

When the user touches the canvas, the brushes jump to the finger's position and start drawing from there. This switch's setting determines whether all of the brushes jump to the touch location or just the current brush indicated by the Fish ID. If this switch is on, all brushes will move to the touch location. If this switch is off, only the current brush will move to the touch location.

#### Enable Tilt

This switch enables AFD to respond to the user tilting their device. With this switch on, all brushes travelling along diagonal, horizontal or vertical paths will move slowly the direction of the tilt. If this switch is off, the brushes are not affected by the tilting of the device.

### **Photos**

This phone contains the photo picker that allows users to select photos from the photo albums on their device. The user navigates to the desired photo and clicks on it. The photo is copied to the canvas and is scaled to fit the entire canvas. The user can alter the way the photo is blended to the previous drawing on the canvas. By going to the Background page and selecting a blend mode and adjusting the alpha slider before selecting a photo, the transparency and the way the photo is blended to the canvas is affected.

### **Images**

AFD contains a set of stone and tile images that the user can incorporate into their creations. Users can select these images from the Images page. The user uses the picker to select the name of the image he wishes. When an image name is selected, a small version of the image is shown. The image is added to the canvas when the Load button is pushed. . The user can alter the way the image is blended to the

previous drawing on the canvas. By going to the Background page and selecting a blend mode and adjusting the alpha slider, the transparency and the way the image is blended to the canvas is changed.

The Image page is also the where the user can save the image on the canvas. The image is saved to the iPhone photo library.

## **Background**

Users can add a layer of color to the canvas. Typically, the layer is used as the background for a drawing; but with the blend modes, the layer color can be added on top of the canvas. Users can select the color by adjusting the hue, saturation, brightness and alpha (transparency) sliders. The blend mode can be selected within the picker. The Add button adds the layer of color to the canvas.

The blend mode picker and alpha slider also works with images and photos. Users need to select the blend mode and alpha value before selecting an image or photo.

Users must scroll down the “More...” page to get to this page selection.

## **Options**

The Options page allows users to further refine the randomization in Surprise mode. There are two sets of buttons on this page. The first group affects which color schemes are selected when the Surprise button is pressed. The color schemes are grouped into five broad categories: Cool, Gray, Earth, Warm, and Pastels. Each group has a switch associated with it on this page. When a group’s switch is on, Surprise mode chooses a color scheme from the group. When the a group’s switch is off, Surprise mode never chooses a color scheme from this group. Setting these options gives users more control over the number and types of colors drawn on the canvas. Of course, turning off “Randomize colors” on the Surprise page allows only one color scheme to be used.

The second group is comprised of one switch – “Random Attributes.” If this switch is On, Surprise mode will randomly enable the “Random Brush Attributes” on the Traits page. If this switch is Off, Surprise mode will not affect the “Random Brush Attributes” switch on the Traits page. This switch is here because turning on or off “Random Brush Attributes” greatly affects the type of drawing produced on canvas.

## **About AFD...**

This page contains information about the software.