

# Creating Art With Infinity

Fractal art can feel technical and abstract at first. Mandelbrot Metal turns that same math into a creative studio where you respond to color, shape, movement, and emotion - not formulas. This guide shows how to go from casual exploration to finished artwork on iPhone and iPad, whether you are deep inside the classic Mandelbrot Set or tapping Mandelbrot points to reveal the matching Julia Sets they generate.

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## 1. Begin With Exploration, Not Perfection

Great fractal art does not start with "finding the right place." It starts with wandering - following curiosity and noticing when something feels alive on screen.

- **Zoom slowly:** the geometry evolves dramatically as you descend.
- **Pan in small arcs:** sweep across the screen to reveal symmetry or rhythmic patterns.
- **Use Julia as a side trip:** when a Mandelbrot point looks promising, single-tap it to open the matching Julia Set. Julia mode often feels more mirrored, lace-like, and botanical; tap again to return to the exact Mandelbrot view where you started.
- **Look for natural compositions:** sweeping curves, diagonals, spiral clusters, foreground/background relationships, and other shapes you would notice in photography.
- **Bookmark moments, not destinations:** when something "clicks," tap the bookmark icon so you can return and refine it later.

### "Lava Reefs" - from wandering to artwork

"Lava Reefs" (See the [image](#)) began as pure exploration - zooming, panning, and reframing until a dynamic structure emerged. That is typical of strong fractal pieces: they are discovered, not plotted on a map.

**Creative mindset:** as you work this way, Mandelbrot Metal stops feeling like "math software" and more like a camera pointed at an infinite world. Let yourself explore without needing a perfect result every time.

## 2. Let Palettes Define the Emotion

Color is the emotional engine of fractal art, and Mandelbrot Metal's palette system is built for that. The app currently includes **155+ curated built-in palettes**, plus support for imported and custom palettes.

Below are the built-ins grouped by the moods they tend to evoke. Use these groups as quick entry points when you are shaping the feel of a piece.

### Calm / Atmospheric / Natural

Soft, airy, and cinematic.

Arctic • Aurora • Aurora Blade • Aurora Borealis • Deep Ocean HC • Desert Dusk HC • Glacier • Lake [UW] • Midnight • Misty Woods [UW] • Ocean • Peacock • Polar Neon • Rain Clouds [UW] • Rainy Day [UW] • Sunset • Sunset Glow • Twilight

### Painterly / Artistic / Pastel

For gentle, expressive, painterly visuals.

Starry Night • Pastel Breeze • Monet Flowers [UW] • Misty Woods [UW] • Orchid [UW] • Sea Shells [UW] • Moonstone [UW] • Cool

### Warm / Fire / Heat

Energetic, bold, dramatic.

Lava • Ember • Fire • Fire & Ice • Hot Metal • Solar Flare • Tropical Heat • Volcano [UW] • Volcanic Sky [UW] • Late Sunset [UW] • Calif. Sunset [UW] • Naples Sunset [UW]

### Vivid / Electric / Neon

High-impact, modern, and visually explosive.

Acid Dream • Blue-Orange Punch • Candy • Cosmic Fire • Cosmic Pop • Cyberpunk • Electric Blue • Electric Jungle • Electric Lime • Electric Sunset • Hypernova • Laser Lines • Laser Pop • Magenta Storm • Miami Lights • Miami Nights • Neon • Photon Flux • Solar Neon • Teal-Magenta Punch • Tokyo Nights • Tropical Punch • Ultraviolet • Ultraviolet Blaze • Vaporwave Edge • Vivid Neon • Vibrant

### Metallic / Glossy / Sculptural

Polished, industrial, reflective character.

Carbon Fiber • Chrome • Chrome (2) • Chrome Glossy • Cold Steel • Copper • Copper (2) • Copper Glow • Cybersteel • Gold • Gold (2) • Iridescent • Metallic Silver • Oil Slick • Oil Slick (2) • Polished Gold • Silver (2)

### Gem-Tone / Jewel / Rich

Deep, luxurious, saturated color.

Amethyst • Citrine • Coral • Emerald • Jade • Ruby • Sapphire

### Ultra-Wide Palettes (768-step)

For the smoothest gradients and print-level subtlety - perfect for artwork.

Abstract [UW] • Arenal [UW] • Bananas [UW] • Beach Sunset [UW] • Begonias [UW] • Blown Glass [UW] • Blue Heron [UW] • Blueberries [UW] • Bookstore [UW] • Bridge [UW] • Bromeliads [UW] • Calif. Sunset [UW] • Cambria [UW] • Car Show [UW] • Chihuly [UW] • Colorful Hats [UW] • Crab Nebula [UW] • Crazy Patterns [UW] • Dragonfly [UW] • Dresses [UW] • Eucalyptus [UW] • Galaxy Quest [UW] • Golden Sunset [UW] • Guitar Player [UW] • Hurst Pool [UW] • Jade [UW] • Jubilant Days [UW] • Jupiter [UW] • Lake [UW] • Late Sunset [UW] • Macaw [UW] • Mashup [UW] • Marquis [UW] • Misty Woods [UW] • Monet Flowers [UW] • Moonstone [UW] • Mt. Dora [UW] • Naples Sunset [UW] • Orchid [UW] • Paul Klee [UW] • Pedal Board [UW] • Plants [UW] • Rain Clouds [UW] • Rainy Day [UW] • Redrum [UW] • Roji-en [UW] • Sarchi [UW] • Sea Shells [UW] • Seurat [UW] • Spectrum [UW] • Starry Night [UW] • State Street [UW] • Volcanic Sky [UW] • Volcano [UW]

### Monochrome / Scientific / Utility

For structural study, high contrast, and dramatic minimalism.

Binary Stripe • Icefire • Grayscale • Heatmap High Contrast • HSV • HSV Hard • HSV Thin Bands • Inferno • Inferno Hard • Inferno+ (Gold) • Magma • Magma+ (Warm) • Mono Ramp High • Mono Ramp Inverted • Noir Edge • Retro CRT • Royal HC • Sci-Fi Radar • Turbo • Plasma • Plasma Hard • Viridis • Viridis+ (Boosted)

**Tip:** try keeping the composition fixed while cycling through palettes. You will often find that the "right" image is a familiar structure in a completely different color mood.

## 3. Use Creative Tools to Shape the Composition

### Fractal Mode

The Fractal selector changes the underlying family of shapes. Start with **Mandelbrot Set** for classic bulbs, spirals, and deep-zoom discovery. When a point on the Mandelbrot Set feels visually charged, single-tap it to open the **Julia Set** generated from that exact complex value.

Julia compositions often feel more symmetrical, branching, or lace-like without changing your palette workflow. The HUD shows the active mode and Julia  $c$  value, bookmarks preserve both, and a second tap in Julia mode returns you to the exact Mandelbrot view that created it. When a bookmark is opened, the HUD also shows **Bookmark: Name** under the mode label, making it easier to track which saved composition you are refining.

### Iteration Depth

Iteration depth controls how many times the fractal equation is evaluated per pixel. It has a strong impact on style:

- **Higher iterations:** crisp, sharp, finely detailed structures.
- **Lower iterations:** painterly, foggier, more abstract shapes.

Many artists deliberately lower iterations for dreamy, atmospheric pieces - especially when paired with soft palettes.

### Precision

Higher precision reveals finer geometry and subtle texture, especially important at deep zoom. When you are pushing magnification, increasing precision helps preserve delicate filaments and avoids "melting" detail.

The max iteration cap setting defines the upper limit used by the iteration slider. This non-linear control is explained in more depth in the [Mandelbrot Metal white paper](#).

### 3D Look

3D Look adds shading and dimensionality to your fractals:

- **Used lightly:** it creates sculptural softness and a gentle sense of form, especially around bulbs and ridges.
- **Used boldly:** it becomes a strong stylistic choice - more like lighting a fractal sculpture than a flat image.

### Rotation

Rotation is one of the easiest ways to unlock new compositions. A spiral becomes a wave, a canyon, or a horizon depending on orientation. If a view feels "almost right," try rotating before zooming away.

## 4. Jumpstart Inspiration With Community Bookmarks

Your [Community Portal Preview](#) includes downloadable bookmarks that many users do not know about yet.

These bookmarks are curated creative starting points, not finished pieces. Think of them as a shared fractal sketchbook.

### How to use them creatively

- **Explore them:** zoom, pan, and rotate around each bookmark.
- **Check the saved mode:** bookmarks remember whether they were made as Mandelbrot or Julia scenes. Julia bookmarks also preserve their source  $c$  value. When sorting by name, the bookmark list shows the mode so you can spot Julia studies and Mandelbrot deep-zoom locations quickly. After opening one, the HUD shows **Bookmark: Name** under the mode label so the active starting point stays visible.
- **Reframe them:** adjust composition for more tension, symmetry, or breathing room.
- **Recolor them:** swap palettes to change mood completely.
- **Dive deeper:** push zoom further to reveal new geometry.
- **Make them yours:** once you have transformed a bookmark into something you love, save it as your own and share it.

**Tip:** start a mini-series by taking one [community bookmark](#) and creating multiple variants - different zoom levels, palettes, and orientations.

## 5. Exporting Artwork: Automatic, High-Quality Results

You do not need to understand rendering pipelines to get clean output from Mandelbrot Metal. When you export, the app automatically handles quality decisions behind the scenes.

- **Supersampling anti-aliasing (SSAA):** applied when needed to smooth edges and reduce artifacts.
- **Highest detail:** the renderer pushes to the highest detail your device can support for the current view.
- **Canvas-size fidelity:** exports match what you see on screen in framing and structure.
- **High-resolution formats:** 4K, 6K, and 8K are ideal for large-format printing or large, high-dpi displays.

**Example - "Baby Mandel at Deep Zoom":** (See the [image](#)) a deep-zoom "baby Mandel" rendered with high iterations and a smooth palette shows how sharp and stable details can remain even at extreme magnifications.

### Pro viewing tips

- Open your exported image in **Photos** and pinch-zoom into the fine structures - the sharpness at deep zoom is one of Mandelbrot Metal's strengths.
- After exporting to Photos, tap the image once to hide the UI and view it full-screen. Fine details become much easier to see.
- Try viewing your art in Photos' slideshow mode for a clean, distraction-free presentation - great when showing work to others.

## 6. Learn Faster With Built-In Help & the User Guide

### 1. Built-in Help Panel

Inside the app, the built-in help panel covers core concepts and controls such as:

- Iterations and Auto vs Manual behavior
- Fractal modes, including tap-to-SSAA exploration from Mandelbrot points
- Contrast and image tuning
- Precision
- Navigation and gestures
- Color selection and palette options
- 3D Look
- Exporting and sharing
- ...and more.

### 2. User Guide on the Website

For deeper walkthroughs, troubleshooting, and annotated screenshots, use the [full user guide](#) in the website or in the app itself.

Pairing that technical guide with this creative guide gives you both sides of Mandelbrot Metal: how it works and how to use it as an art studio.

## 7. A Simple Daily Creative Ritual

Many artists thrive with small, repeatable creative habits. Here is a five-minute routine you can use with Mandelbrot Metal:

- 1 Open Mandelbrot Metal.
- 2 Load a random bookmark.
- 3 If you are in Mandelbrot mode, single-tap an interesting point to try its matching Julia Set.
- 4 Tap again to return to the Mandelbrot view if the Julia variation is not the one.
- 5 Change to a new palette.
- 6 Rotate the view.
- 7 Zoom until something "clicks."
- 8 Capture your favorite frame.

### "Deep & Very Detailed" - an example outcome

**"Deep & Very Detailed"** (See the [image](#)) was created at a zoom of **2,808,812,540x**, using the 768-step palette **"Bookstore [UW]"** and **7,500 iterations**. Pieces like this often emerge from short daily sessions rather than single marathon explorations.

**Tip:** check the [Gallery](#) on the Mandelbrot Metal site for your style fractal artwork. Use it as inspiration, not a template - your own style will emerge as you repeat the ritual.

## 8. Next Steps

Ready to create your own fractal artwork? Download **Mandelbrot Metal** exclusively on the App Store for your iPhone or iPad and start exploring, bookmarking, and exporting your own pieces.

Explore downloadable bookmarks and palettes from the community, import them into Mandelbrot Metal, and use the tools in this guide to shape them into finished artwork.

**Another example - "Glassy Vortices":** (See the [image](#)) created using the 768-step palette **"Blown Glass [UW]"**, it shows how ultra-wide palettes can deliver subtle gradients and details that really shine in print and on high-resolution displays.