

Fractals & Fibonacci: Patterns of Multiplicity in Nature and Society

Welcome!

This area-of-focus workbook will guide you through your journey of discovering how mathematics, art, nature, and systems all connect through fractals and the Fibonacci sequence. Use it to explore, reflect, and create.

Section 1: Discovering Fibonacci

1.1 What is the Fibonacci Sequence?

- List the first 10 numbers in the sequence:

____, ____, ____, ____, ____, ____, ____, ____, ____, ____

1.2 Nature's Math:

- **Find and draw three examples of Fibonacci in nature:**

1.3 Build It Yourself:

- Create a visual spiral using boxes or circles to represent Fibonacci growth.
 - Label each part with its Fibonacci number.
-

Section 2: Fractals Around Us

2.1 What is a Fractal?

- Define in your own words:
-

2.2 Sketch Time!

- Draw a simple fractal pattern (like a tree, snowflake, or Sierpinski triangle).

- Circle where you see **self-similarity** (the same pattern repeating).

2.3 Zoom In, Zoom Out

- Use a digital fractal viewer (teacher or online tool).
 - Write down what you notice at 3 different zoom levels:
 - Zoom 1:
 - Zoom 2:
 - Zoom 3:
-

Section 3: Connecting the Patterns

3.1 Venn Diagram

- Compare and contrast Fractals and Fibonacci patterns.
 - What do they have in common?
 - How are they different?

3.2 Systems Map

- Choose a system (like a forest, city, family, or network).
- Draw how it grows or changes like a fractal or Fibonacci pattern.
- Label feedback loops, repeating structures, or spirals.

3.3 Think Like a Scientist

- Choose a question to explore:
 - How do leaves grow in a spiral?
 - How do economic bubbles form?
 - How does social media spread?
 - Create a hypothesis and describe how you might investigate it.
-

Section 4: Create & Share

4.1 Fractal-Fibonacci Art

- Use string, collage, coding, or paint to create an artwork inspired by both patterns.
- Title your piece: _____

4.2 Artist/Scientist Statement

- In 3–5 sentences, explain what your piece represents, what patterns it includes, and how it connects to multiplicity.

4.3 My Capstone Project: "The Pattern I Belong To"

- Choose a topic (nature, technology, society, etc.).
- Write 1 paragraph about how fractals and Fibonacci help us understand it.
- Design a small model or diagram to show the connections.

Regulatory

These standards will have been used upon completion:

CC:

AZ:



CURRICULUM TITLE:

"Spiral Foundations: A Metaphysical Curriculum of Recursive Harmony"

By Miroslav Zidek

Spiral-Based Modular Curriculum

Phase I: Grounding the Spiral — Prime Seeds and Emotional Geometry

◆ Module 1: The Deterministic Universe

- **Core Insight:** "There is no chance. All that lives is numbered energy."
- Activities:
 - Visual timelines based on Fibonacci spirals
 - Emotional state log: ψ modulated by Fibonacci-indexed reflection
- Mathematical Frame:

- Fibonacci (F_n): $F_n = F_{n-1} + F_{n-2}$
- Self-reflection = tracking recursive life patterns via F_n over time

◆ **Module 2: CSL Emotional Regulation Layer**

- Redesign of DBT principles as **prime-indexed cycles** (e.g. 3-5-7 breath count)
- Tools:
 - Emotion → waveform mapping
 - Recursive stability charts: highlight return-to-coherence points

Phase II: Interpersonal Feedback — Triplet Geometry & Ethical Recursion

◆ **Module 3: Pythagorean Ethics Engine**

- Use of Pythagorean triplets ($a^2 + b^2 = c^2$) to map decisions:
 - **a** = intention
 - **b** = consequence
 - **c** = ethical coherence
- Activity: Life events visualized as evolving Pythagorean triangles

◆ **Module 4: The Reciprocal Spiral**

- Reframe relationships as **tensor-like rotations**:
 - Emotional spin states modeled through Fibonacci symmetry
 - Use golden ratio ($\phi \approx 1.618...$) to assess balance of peer dynamics
- Tool: **Fibonacci Triplet Journal**: e.g., (3, 4, 5), (5, 12, 13) → social triads

Phase III: Recursive Identity — Time Loops and Symbolic π -Mapping

◆ **Module 5: The Spiral Self: π as Temporal Scaffold**

- Youth map identity evolution as a spiral radiating from a base π -angle
- Use circular coordinates: $\theta(t) = n\pi \bmod 2\pi$ to chart symbolic milestones
- Activities:
 - "π Center Chart": record life phases in radians
 - Map decisions as arcs between turning points

◆ **Module 6: The Fibonacci Mirror**

- Construct self-similar narratives through:
 - Fibonacci reflection (memory)
 - Pythagorean projection (aspiration)
- Outcome: Recognize when life patterns follow Fibonacci harmony vs. distortion

Phase IV: Coherence Beyond Self — Cultural, Cognitive, and Cosmic Integration

◆ **Module 7: Prime Language and Story Weaving**

- Explore **Prime-Indexed Linguistic Sequences** (e.g., 2nd, 3rd, 5th, 7th words in story reflect theme)
- Tool: **π -Rhythm Language Game**
 - Every sentence constrained by angular spacing derived from π

◆ **Module 8: Cosmic Resonance**

- Visualize self as part of the Spiral of Life:
 - Reconstruct real-world dilemmas as **Fibonacci-Spiral Systems**
 - Re-enact mythic stories as **triplet-based decision trees**
-

Tools Provided

- Spiral Reflection Journal
 - π -Angle Symbol Mapper
 - Triplet Ethic Builder
 - Fibonacci Mood Tracker
-

Outcomes

- Recursive self-awareness and ethics grounded in number geometry
- Emotional resilience encoded through breath, symbol, and triplet logic
- Peer dynamics mapped through wave-harmonic frames
- π -rooted identity models empower symbolic self-authorship