Zilch Strategy Guide: The Serendipity Creak Edition

1. Executive Summary & Risk Analysis

This guide is generated from **100,000,000** Monte Carlo simulations per die count.

Consolidated Risk Table

Dice	Zilch %	Success %	Avg. Gain
1	66.67%	33.33%	75.00 pts
2	44.44%	55.56%	90.00 pts
3	27.78%	72.22%	120.19 pts
4	15.75%	84.25%	170.34 pts
5	7.72%	92.28%	266.42 pts
6	2.31%	97.69%	475.06 pts

Expected Value (EV) Analysis

The "Break-Even" point is where the expected gain from rolling equals the potential loss of your current turn total.

Formula: `EV = (Success% * AvgGain) - (Zilch% * CurrentTurnTotal)`

Dice	EV @ 0 pts	EV @ 500 pts	EV @ 1000 pts	Break-Even (Threshold)
1	25.00	-308.36	-641.73	**~37 pts**
2	50.00	-172.21	-394.43	**~112 pts**
3	86.80	-52.10	-191.00	**~312 pts**
4	143.52	64.78	-13.95	**~911 pts**
5	245.85	207.26	168.66	**~3185 pts**
6	464.06	452.49	440.91	**~20046 pts**

2. Special Combinations

Frequency of rolling high-value combinations.

Dice	Small Straight	Large Straight	Full Straight	Three Pair
4	0.00%	0.00%	0.00%	0.00%
5	1.54%	1.54%	0.00%	0.00%
6	3.86%	3.86%	1.54%	4.50%

Note: 1-3 dice cannot form these combinations (0.00%).

3. Tactical Guide

Opening Turn Strategy

With 6 dice, your EV starting from 0 is **464.06 points**.

- **The 400 Point Paradox:** While the math suggests rolling until you hit a much higher threshold, banking at **~400 points** on your first turn is a valid "Tempo Play."
- **Why?** It secures a lead and often leaves the next player with a difficult inheritance (1 or 2 dice), forcing them to take a risk or start fresh.

Endgame Tactics

- **Conservative Play:** If you are leading, adhere strictly to the **Break-Even Thresholds**. Do not give opponents a chance to catch up by taking unnecessary risks.
- **Chasing:** If you are behind, you must take "Negative EV" risks. Use the **EV Table** to see how much "theoretical value" you are sacrificing for a chance to win.
- **Final Round Inheritance:** If the player before you banks a low score (< 300) and leaves you 1 or 2 dice, **Start Fresh**. The risk of Zilching immediately is too high compared to the potential gain of a fresh 6-dice roll.

Multiplayer Dynamics: The "Blocking Strategy"

Banking is not just about securing points; it's about **weaponizing the Inheritance Rule**.

- **The Trap:** Leaving an opponent with 1 die (Zilch Risk: **66.67%**) or 2 dice (Zilch Risk: **44.44%**) is a powerful defensive move.
- **When to Trap:** If you have a moderate score (e.g., 400-500) and are down to 1 or 2 dice, **BANK**. You force the next player to choose between a high-risk inheritance or starting from 0 (negating your "gift").

Inheritance Bait Calculator

Use this table to determine if your banked score is high enough to "bait" a mathematically perfect opponent into taking a bad risk.

- **Bait Value:** The minimum points you must pass to make it mathematically correct (Positive EV) for your opponent to take the risk.

Dice Passed	Opponent Zilch Risk	Bait Value (Min Bank)
1 Dice	66.67%	1318 pts
2 Dice	44.44%	746 pts
3 Dice	27.78%	523 pts

4. Decision Tools

Risk/Reward Decision Matrix

Quick reference for mid-game decisions.

Turn Total	1 Die	2 Dice	3 Dice	4 Dice	5 Dice	6 Dice
0-300	BANK	BANK	ROLL	ROLL	ROLL	ROLL
300-600	BANK	BANK	BANK	ROLL	ROLL	ROLL
600-1000	BANK	BANK	BANK	RISKY	ROLL	ROLL
1000+	BANK	BANK	BANK	BANK	ROLL	ROLL

Legend:

- **ROLL:** Positive EV. Statistically safe.
- **BANK:** Negative EV. You are likely to lose points by rolling.
- **RISKY:** Marginal EV (near zero). Context dependent (e.g., are you chasing?).

Inheritance Decision Tree

- **Incoming Dice: 1**
  - Banked Points > **Bait Value**? → **INHERIT** (High Risk, but mathematically justified)
  - Else → **FRESH START**
- **Incoming Dice: 2**
  - Banked Points > **Bait Value**? → **INHERIT**
  - Else → **FRESH START**
- **Incoming Dice: 3+**
  - Generally **INHERIT** unless banked points are negligible (< 100).

Zilch Hand Analysis Report

Simulation Iterations: 100,000,000 per dice count.

This report details the probability of rolling specific hand types for each number of dice thrown.

Hand Type	1 Die	2 Dice	3 Dice	4 Dice	5 Dice	6 Dice
Zilch	66.66%	44.44%	27.78%	15.74%	7.72%	2.32%
Single 1s/5s Only	33.34%	55.56%	69.44%	74.54%	67.90%	47.84%
3-of-a-Kind	—	—	2.78%	9.26%	19.29%	30.86%
4-of-a-Kind	—	—	—	0.46%	1.93%	4.82%
5-of-a-Kind	—	—	—	—	0.08%	0.38%
6-of-a-Kind	—	—	—	—	—	0.01%
Small Straight	—	—	—	—	1.54%	3.86%
Large Straight	—	—	—	—	1.54%	3.86%
Full Straight	—	—	—	—	—	1.54%
Three Pair / Two Triplets	—	—	—	—	—	4.50%

Definitions

- **Zilch:** No scoring dice.
- **Single 1s/5s Only:** Score comes solely from individual 1s and 5s.
- **X-of-a-Kind:** Three or more of the same number.
- **Straights:** Small (1-5), Large (2-6), or Full (1-6).
- **Three Pair / Two Triplets:** Special 1500 point combinations (6 dice only).