A screenshot of a game

AI-generated content may be incorrect.

Here’s a clean layout plan for pairing **16 mm marbles** with a [**60 LEDs/m WS2812B strip**](https://www.amazon.com/dp/B01CDTE9UC?th=1) (≈ 16.67 mm LED pitch) so that each marble gets its own “pixel” without crowding or gaps.

**📐 Core Measurements**

| **Element** | **Size / Spacing** |
| --- | --- |
| Marble diameter | 16 mm |
| LED pitch (center‑to‑center) | 16.67 mm |
| Recommended hole center spacing | 16.7 mm |
| Recommended hole diameter | 15.8–16.0 mm |

# Hardware Notes

* For reference, the kaleidoscope has 20 x 39 = 780 pixels
* A ‘standard’ marble is ~16mm in diameter
* A [**60 LEDs/m WS2812B strip**](https://www.amazon.com/dp/B01CDTE9UC?th=1) has a 16.67mm LED pitch
  + Dave’s 3D printer has a print volume of 350 x 350 x 325 mm or 19 x 19 = 361 marbles (leaving room for a margin and frame).

## Power

* usb c pd adjustable power supply?
* [DC 4.75-23V to 3.3V Buck Converter Board](https://www.amazon.com/dp/B0B779CGJQ?ref=ppx_yo2ov_dt_b_fed_asin_title&th=1)

# Software Notes

1. marble roller
   1. Try alpha blending between marbles in motion (ala Matrix/Kaleidoscope) to give a better sense of motion. Look at “lerp” (ask AI).
2. marble clock
3. Display static patterns/images
4. Display dynamic patterns/images
5. Animated transitions
   1. Marbles ‘fall’ from the top down in a random pattern ala connect 4 ([need a physics engine](https://github.com/ESPboy-edu/ESPboy_tinyphysicsengine)?)
   2. Marbles ‘fall’ out the bottom ala Connect 4
   3. Marbles ‘roll’ down from row to row filling in the picture
   4. Standard transitions:
      1. Simple Cut
      2. Fade to/from black
      3. Alpha blend to next picture
      4. Wipe
      5. Push/slide from left/right/top/bottom - old slide out, new slide in