



## Make Your Own Matrix Sifter

In this activity, you are challenged to engineer your own simulated matrix sifter to practice your microfossil sifting skills! Microfossils are just what they sound like - very small fossils. When we excavate bones of megafauna (large animals), there is often still dirt stuck to those bones. That dirt and other dirt surrounding the megafauna bones are actually FILLED with these tiny fossils. When we examine the microfossils, we're actually getting a better look at the "locals" of Los Angeles during the Ice Age. Think insect legs, fish scales, mouse toes, etc. One of the most important parts of excavating fossils is sifting through the matrix to find those microfossils!

### Materials:

*The materials listed below are suggestions. Feel free to experiment with objects you may have at home!*

- Measuring cup or ladle
- 2 [Aluminum baking tin](#) (9x13 or larger recommended)
- [Small toys](#) or rocks that are larger in size than the matrix
- **Matrix** (simulated)
  - Whichever type of simulation you choose, your matrix should have a mix of small and large grains of sand or dirt.
    - Gathered simulated matrix
      - Gather some dirt from your neighborhood. You will need at least 3 cups of dirt with varying sized grains of dirt and small rocks.
    - Found simulated matrix
      - Rice
      - Quinoa
      - Barley
      - Mix of whatever grains you have in your pantry
    - Purchase simulated matrix
      - [Backyard Wildlife Birdseed](#) - you will need about 3 cups
- **Sifter**
  - Purchase a fine mesh [sifter](#) or [colander](#)
  - Found objects sifter (these are suggested items, feel free to explore your home for other items that could be helpful!)
    - Pipe cleaners
    - Wooden kebab skewers

*For more activities and offsite resources, visit [TARPITS.org/educational-resources](https://www.TARPITS.org/educational-resources)*

La Brea Tar Pits & Museum | [www.TARPITS.org](https://www.TARPITS.org)

- Chopsticks
- Cardboard tubes (toilet paper or paper towel)
- Mesh produce bag
- Burlap
- Scissors
- String or twine
- [Masking tape](#)

## Instructions:

### 1. Make your simulated matrix.

Create your simulated matrix by putting you dirt, grains, or birdseed into one of the aluminum trays. Hide your small toys or rocks in the matrix.



### 2. Engineer your sifter.

Set up all your supplies for creating your sifter. Begin by making a frame to hold the mesh or screen. Use the other aluminum tray underneath the sifter to catch the smaller grains of your “matrix”.



### 3. Sift your matrix!

Test out your sifter by gently scooping some of your simulated matrix onto the mesh of your sifter. Gently move the matrix around on top of your screen or mesh, keeping an eye out for any microfossil toys you find!

