



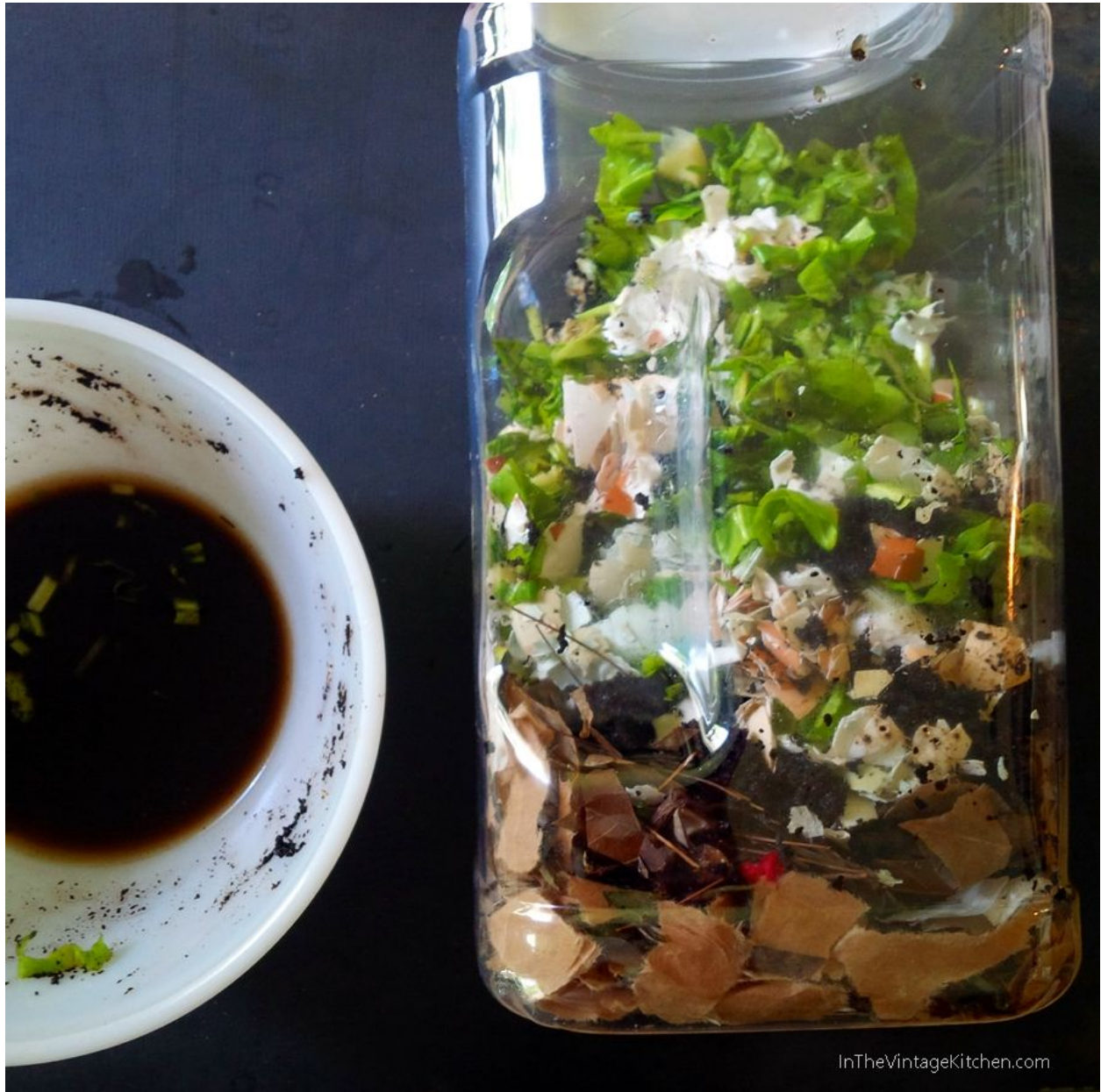
Episode 3 - Fired: The Story of the Phoenix

The best time to plant a tree was 20 years ago. The second best time is now

Thank you for joining us on *The Buzz*, a next generation science show, where YOU are part of the cast. Season One of *The Buzz* is an odyssey through ecosystems science, from the minuscule building blocks that form our environment to the global effect of switching those blocks around.

As Episode 3 opens, Harv expresses frustration that his seed germinating wasn't as successful as he'd hoped. We discuss how success and failure are parts of life, but it's soon revealed that the failed seeds have triggered Harv's PTSD from the Australian wildfires. His grandfather was a park ranger who planted many trees, but they all went up in smoke. *What is the point of so much hard work, if it could all be for nothing?* This evokes the tale of the mythical Phoenix, who rose from the ashes of a fire every day. We talk about the learning opportunities that failure provides, and it often leads to some new, unforeseen success. In fact, nature does this all the time, when it recycles nutrients- some things die and are broken down into nutrients and particles that are reassembled into new life. To see this in action, we build a mini composter that will provide soil for our seeds.

Project: Mini Composter



All life on Earth is part of a vast nutrient cycle. As dead organisms, food waste and yard trimmings decompose, the very building blocks that made them get reused by other life forms. From a tiny bacterial cell to a giant African bull elephant, all life is made up of atoms and molecules that have been used countless times before!

Suggested Materials:

- Transparent plastic juice or soda bottle, with cap or lid
- A handful or two of soil
- A sharp tipped scissors, knife or other poking tool for making small holes in the plastic
- Tape & writing tool or permanent marker for labeling
- BONUS- a warm place where your composter can live. This can be inside, or outside in the sun

Project Previews & Supplemental Materials

Adam & Harv will make a mini composter using a method similar to this:

[Cooking Up A Compost Container: A Mini Bin for A Mini Balcony](#)

Some of the Next Generation Science Standards Addressed:

MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem. [Clarification Statement: Emphasis is on describing the conservation of matter and flow of energy into and out of various ecosystems, and on defining the boundaries of the system.] [Assessment Boundary: Assessment does not include the use of chemical reactions to describe the processes.]

LS2.B: Cycle of Matter and Energy Transfer in Ecosystems

Food webs are models that demonstrate how matter and energy is transferred between producers, consumers, and decomposers as the three groups interact within an ecosystem. Transfers of matter into and out of the physical environment occur at every level. Decomposers recycle nutrients from dead plant or animal matter back to the soil in terrestrial environments or to the water in aquatic environments. The atoms that make up the organisms in an ecosystem are cycled repeatedly between the living and nonliving parts of the ecosystem. (MS-LS2-3)

Energy and Matter

The transfer of energy can be tracked as energy flows through a natural system. (MS-LS2-3)

Stability and Change

Small changes in one part of a system might cause large changes in another part.

(MS-LS2-4),(MS-LS2-5)