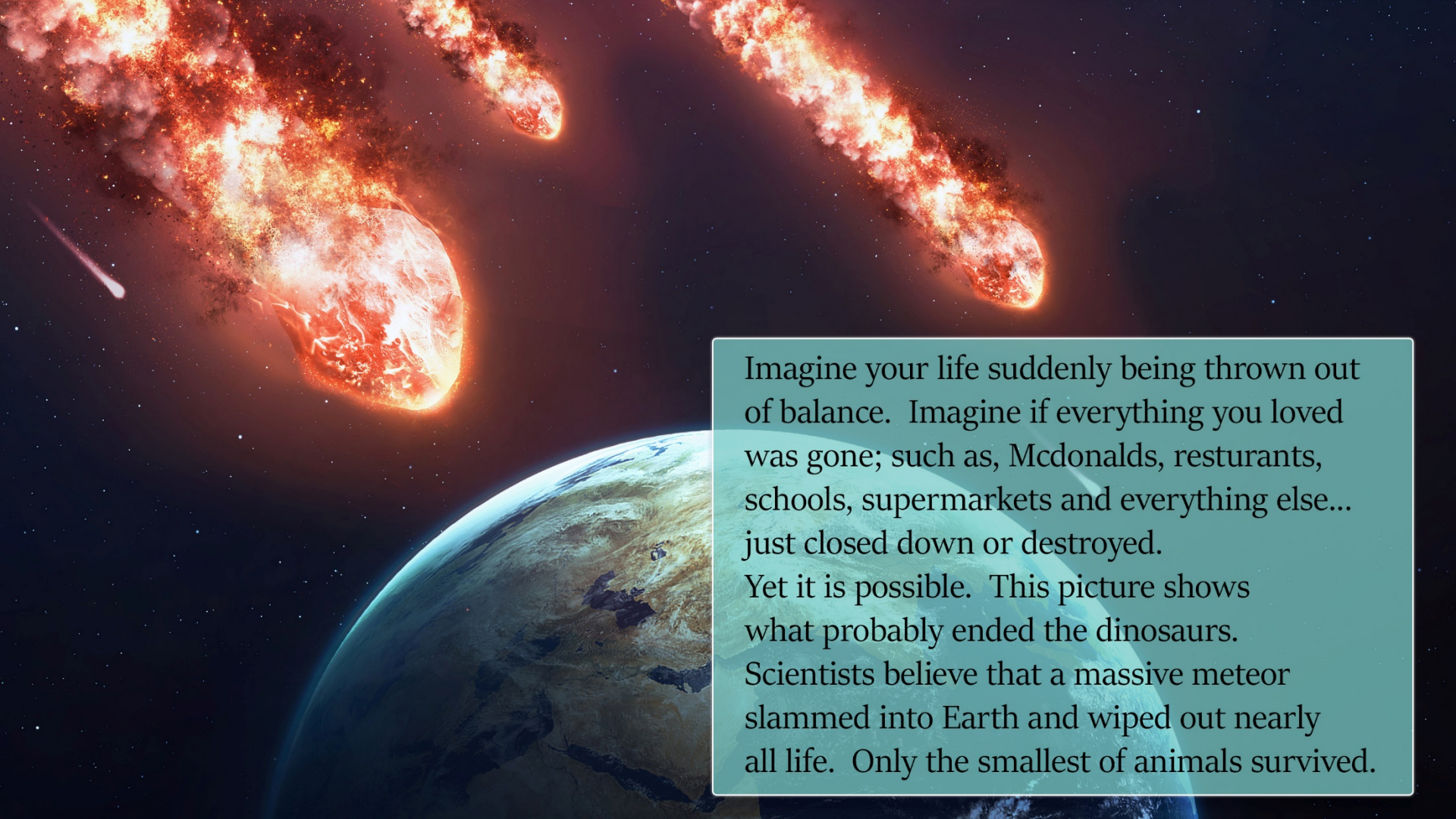


A rusted tractor is the central focus on the left side of the image. It has a weathered, brownish-orange patina. The engine compartment is open, revealing various mechanical parts. A fuel tank is mounted on the side. The tractor is parked in a field of tall grass. In the background, there are rolling hills under a dramatic sky with a bright sun setting or rising, creating a golden glow. The text 'POST APOCALYPTIC GARDENING' is overlaid in a large, red, distressed font across the upper middle of the image. The overall mood is one of desolation and survival.

# POST APOCALYPTIC GARDENING





Imagine your life suddenly being thrown out of balance. Imagine if everything you loved was gone; such as, Mcdonalds, resturants, schools, supermarkets and everything else... just closed down or destroyed. Yet it is possible. This picture shows what probably ended the dinosaurs. Scientists believe that a massive meteor slammed into Earth and wiped out nearly all life. Only the smallest of animals survived.





Or... here is another scary idea. What if our country were to go into war and cities end up destroyed?

There would be no grocery stores or restaurants to buy food. Not only that but electricity probably wouldn't work, roads destroyed and gas stations would either be damaged or empty of gasoline. So you wouldn't be able to get far anyway. You might think this is all just silly. Yet this has happened to other countries. So what do you do to EAT and SURVIVE?



**MODERN CIVILIZATION  
SUDDENLY ENDS...**

**WOULD YOU  
KNOW HOW  
TO SURVIVE?**








In a post apocalyptic world the first thing you need is to find and collect good soil and seeds. What is so important about dirt or boring old seeds you may ask?! First of all... do you even know the difference between soil and dirt?! Or how important seeds are? There is a huge difference between soil and dirt! Does anyone here know what is the difference between soil and dirt?





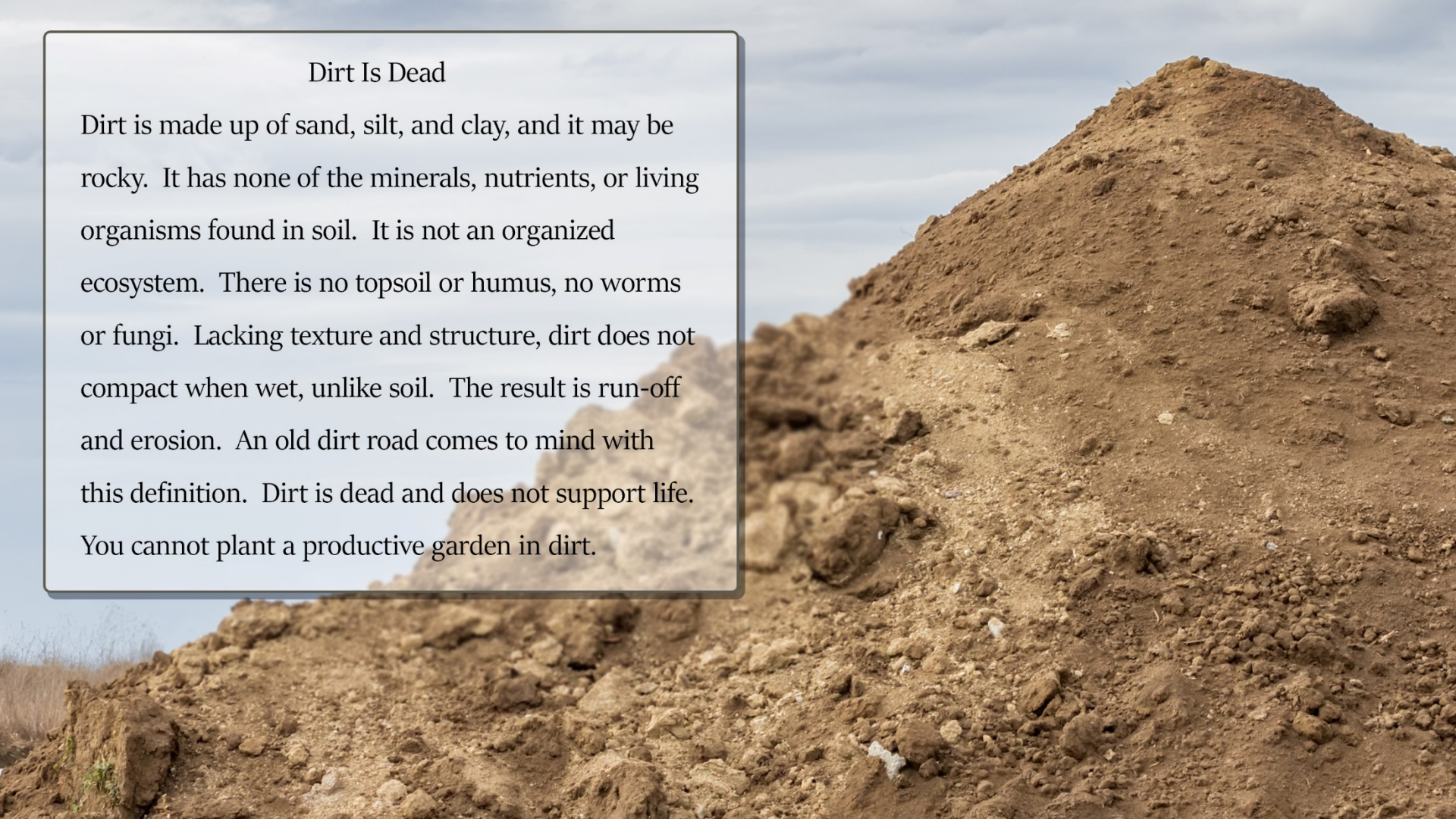
## Soil Is Living

Soil is alive with living organisms such as worms, fungi, insects, bacteria, and organic matter. It supports life with its naturally occurring nutrients and minerals, making it perfect for growing seeds into plants. It is a complete and self-sustaining ecosystem. Sand, silt, clay, and organic matter make up soil. The different sized particles create texture and structure. This allows air to breath through the soil and also allowing water to drain. That prevents soil turning too muddy. Soil has a rich mineral content. Plants need minerals to grow and thrive. When soil leaves the garden on your hands or clothes, it is now just plain old dirt.



## Dirt Is Dead

Dirt is made up of sand, silt, and clay, and it may be rocky. It has none of the minerals, nutrients, or living organisms found in soil. It is not an organized ecosystem. There is no topsoil or humus, no worms or fungi. Lacking texture and structure, dirt does not compact when wet, unlike soil. The result is run-off and erosion. An old dirt road comes to mind with this definition. Dirt is dead and does not support life. You cannot plant a productive garden in dirt.



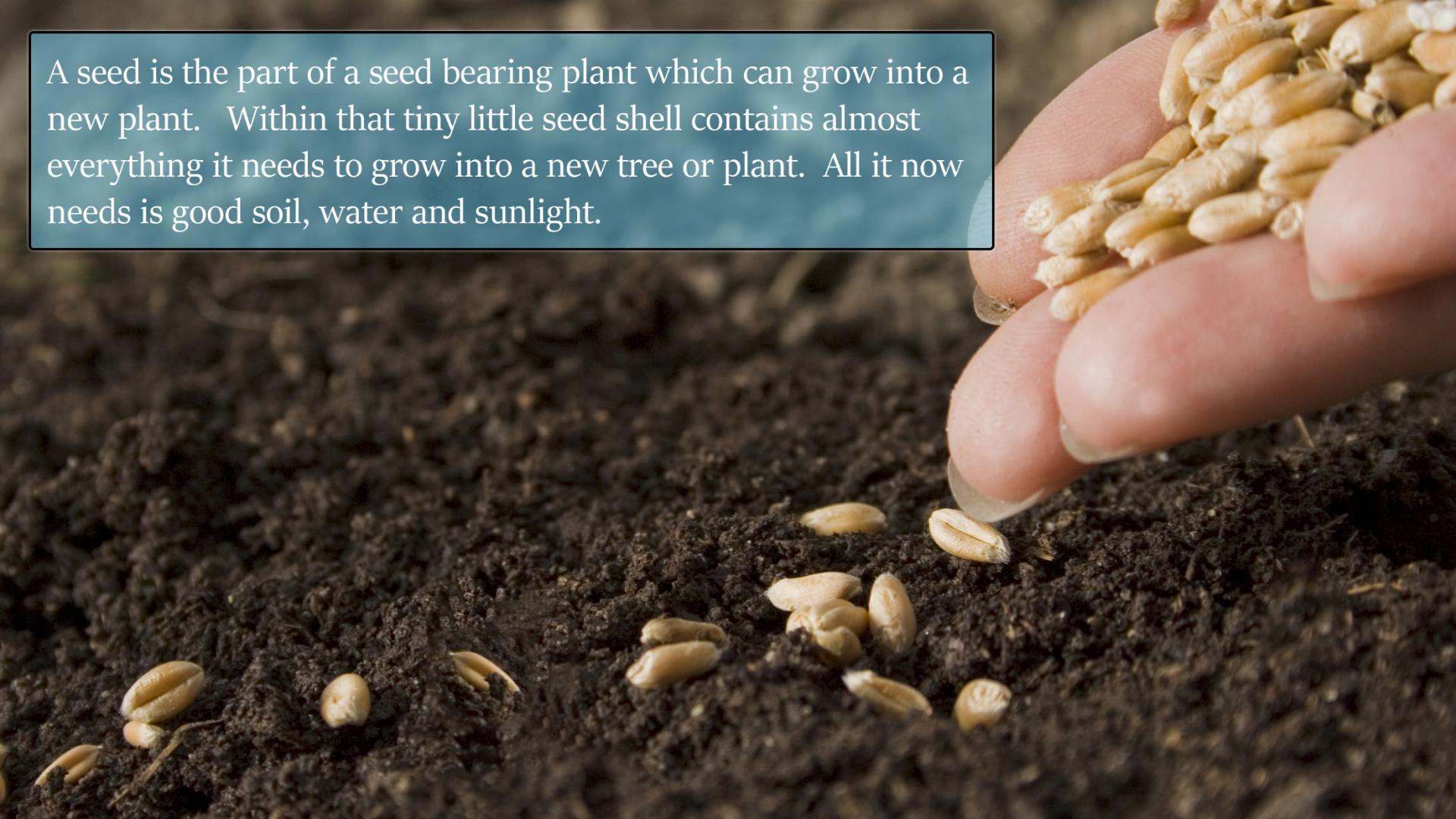


Why am I making a big deal about soil? Well, you need good soil to plant seeds that will grow into plants. Plants allow you to harvest fruits and vegetables. It is far easier to grow a lot of crops at one time than to hunt for animals every single day. You'd have no idea how hard and long it takes to hunt animals.





A seed is the part of a seed bearing plant which can grow into a new plant. Within that tiny little seed shell contains almost everything it needs to grow into a new tree or plant. All it now needs is good soil, water and sunlight.





A seed might look boring and or even dead, but it isn't.  
Seeds rest quietly until all things are right for it to begin "germination", which means, "begins to grow".





Most of us know that apples, oranges and watermelon are fruits because they hold seeds.

We know that these seeds will grow into new plants someday.

The little black dots on strawberries are also seeds which makes strawberries a fruit.







If you were to ask a chef how they would separate fruits and vegetables, they would judge them on taste. For example, fruits generally have a sweet or tart flavor and so they are most often used in desserts, snacks or juices. Yet avacados are fruits even though they do not taste sweet. Vegetables have a more hearty or savory taste and are usually eaten as part of a meal.



Look below and you will probably think that tomatoes, string beans, cucumbers and avacados are vegetables. Yes, even chefs will see these as vegetables. The truth is that these are really fruits... because they all have seeds.

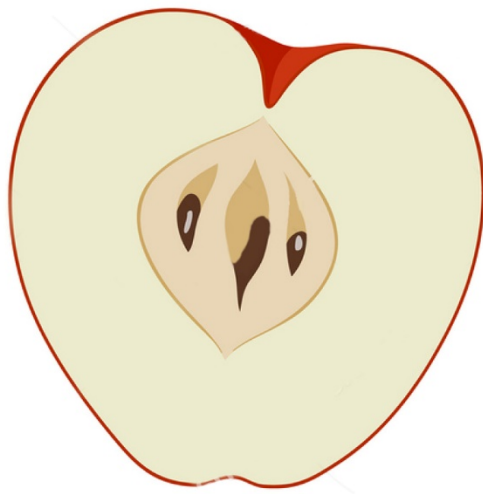
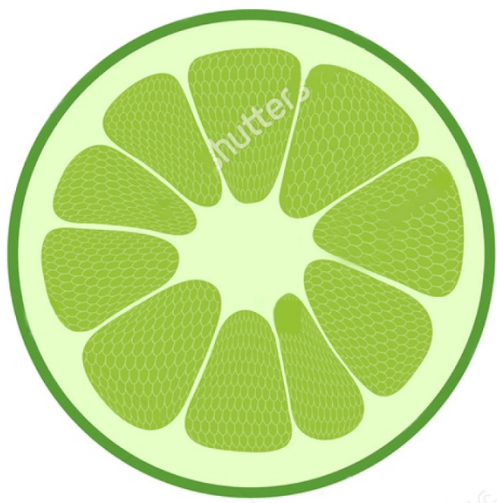




Things like radishes, celery, carrots, and lettuce do NOT have seeds so they are called vegetables. Vegetables are any part of the plant that doesn't have a part in making the seeds that make new plants.

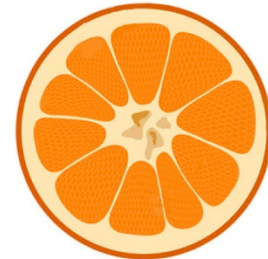
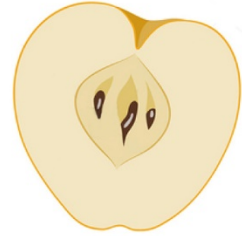
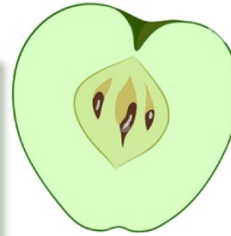






Now let's do what you kids are really good at...  
destroy things and make a ton of mess!  
All for the purpose of scientific observation!

1. You will group into teams of two and receive a fruit that hopefully will have seed(s) in them.
2. Then you will cut them open with a butter knife.
3. Carefully place the seeds onto a tray to observe how many you find and how they look like.







You would be amazed that there could be so much history surrounding a boring seed... I know that, at first, I was very bored to have to learn about seeds.

But, oh boy, are you in for a special treat!

We will learn about a special seed and the awesome history that comes with it.

This little seed went through a king, a evil empire, rebellious assassins, extinction, left forgotten, rediscovery, and then finally, a new life.



This is a type of a Date Palm Tree.  
This kind of a tree is not commonly  
found in NYC, but it is common in  
the Middle East and Africa.

There is one special date palm tree  
and more importantly, the seed  
that it grew from.

Let's explore more!







## METHUSELAH

Sprouted from an ancient seed from the Masada excavations

With thanks to the Louis L. Borek Natural Medicine Research Center, Hadassah Medical Center

This tree protected by metal fencing is the Methuselah Date Palm Tree and there is only one of it left in the entire world! That is because the Judean Date Palm Tree has been extinct for over 1,500 years! Rumor has it that this tree was purposely destroyed by the Roman Empire because it was important and widely used by the ancient nation of Judea and Israel. The Roman Empire was a big bully in the times the of ancient world.





\*\*\*Where did this 2,000 year old seed come from?

\*\*\*How did it survive for that long?  
When was it discovered?

This 2,000 year old seed was discovered in Southern Israel, located high above the Dead Sea on a tall, rocky plateau. It was found in an ancient fortress of Masada. Meaning “strong foundation” in Hebrew, Masada is a natural fortress built thousands of feet above the Dead Sea.





The Fortress of Masada was home to Herod the Great, King of Judea. Herod built his castle there as a winter escape and hide away from enemies, complete with castle, storerooms, cisterns and a foreboding wall. Then after his death, the Roman empire took over the fortress and sent a large group of soldiers to guard it, and use it as another home base.







Then later on... the group of Roman soldiers were destroyed and taken over by Jewish assassins called "The Sicarii". They were tired of being ruled over by the Roman Empire and tried to escape and be left alone at the famous fortress. Unfortunately, at the end, over 900 Jewish Sicarii assassins, as well as their families, were defeated. Soon afterwards the fortress was forgotten and left deserted for over a thousand years later. Then fortress was rediscovered in 1838.





Then in 1963, Jewish archaeologists began a proper dig around King Herod's ancient fortress of Masada.

Archaeological diggers discovered a clay jar buried deep in hot, dry dirt. It was undisturbed and intact. Inside they found several date palm seeds.

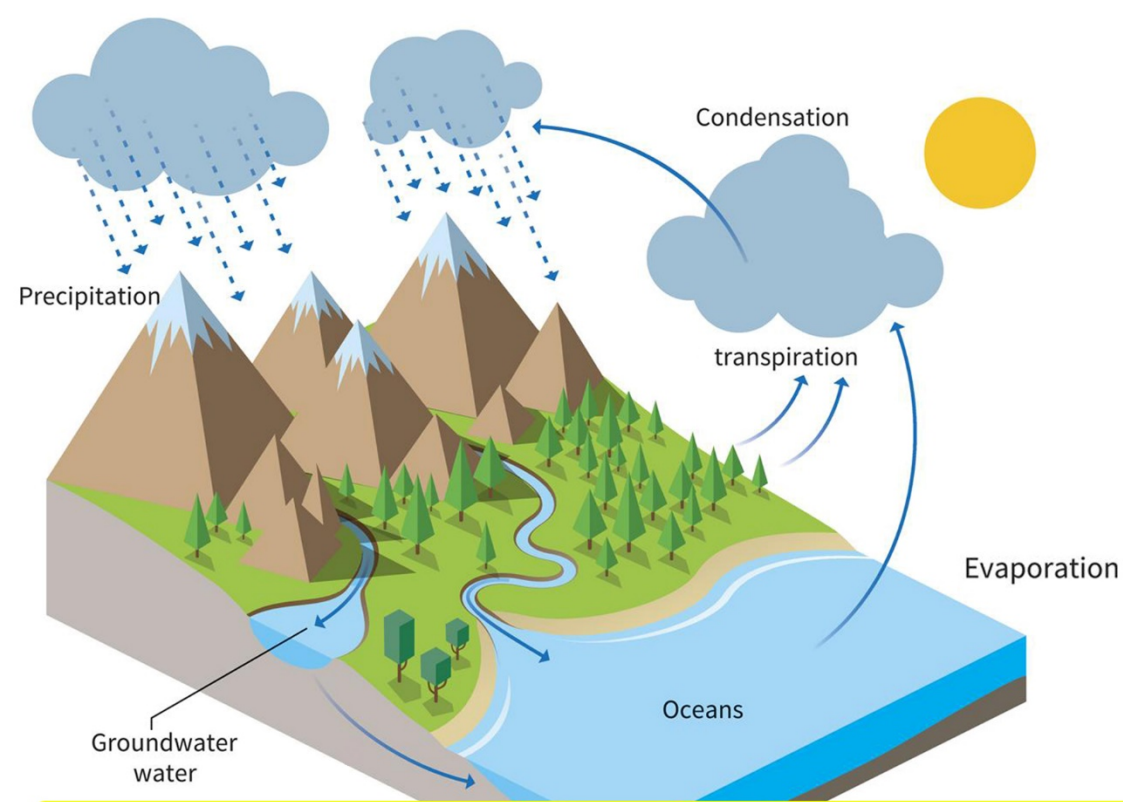
Back at the lab, scientists broke off tiny chips of the seeds' shells; carbon dating estimated the seeds to be over 2,000 years old.





After the discovery of the seeds, scientists preserved the seeds to study it later on. You could say that the seeds were left forgotten. Forty years later, these special seeds were found in a storage drawer at a college university. Agriculture expert and botanist Dr. Elaine Soloway was asked to plant three of the seeds. She thought the seeds had no chance at growing at all. Yet after a few months, she noticed a crack in the soil... then a sprout! The plant would be named Methuselah, after Noah's grandfather, the oldest man in the Bible.





We will be learning about what a greenhouse is, create our own greenhouse and hopefully grow our own bean seed. A greenhouse makes it possible to grow plants because heat, humidity, and water cycle are happening all by itself. The Earth has its own water cycle that rains, then evaporates into the clouds and then rains all over again. Our little greenhouse hopefully will be able to do the same thing!