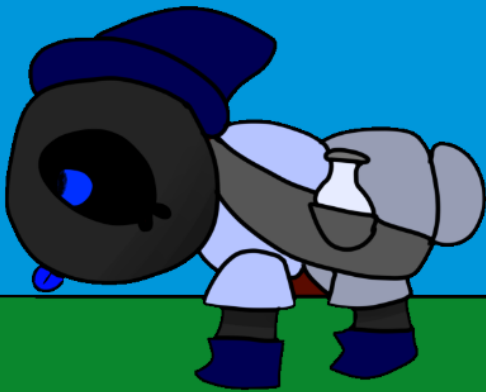
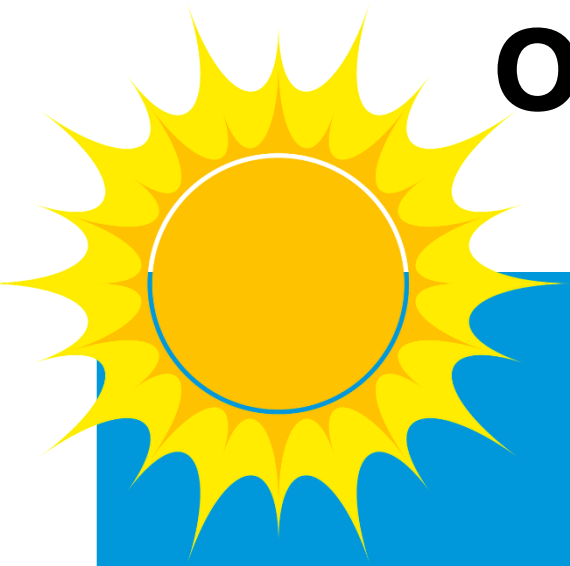


THE ADVENTURES OF LUMBRICUS AND XENYLLA IN THE ORCHARD



On a sunny autumn afternoon, Lumbricus and Xenylla were having fun, among the orchard plants, with a quiz games book entitled “The factory of life”. Lumbricus, who was a very studious earthworm, read out so that his friend Xenylla, a springtail “know-it-all”, could answer.

-“Listen Xenylla, here they ask: Why should we take care of the soil? **Because...** and the options are:

- a.- It is the all living organisms habitat.
- b.- It accumulates water like a ‘sponge’.
- c.- It allows to produce food and fibers.
- d.- For all the reasons mentioned, as well as many others, necessary to perform planet vital functions”.





- “Hmmm...Hmmm... I would choose option ‘d’ because soil has multiple functions. For example, it acts as a filter to protect the quality of water and air from polluting substances and also it serves as engineering medium”.

- “Very good Xenylla! That is the correct choice! This book says that soil also accumulates carbon, which prevents the atmosphere from trapping so much heat from the sun. That’s why soil helps to fight global warming and other threats”.



Suddenly bright lightnings lit up the sky and roared deafening thunders and then great drops of water began to fall from a menacing black cloud.

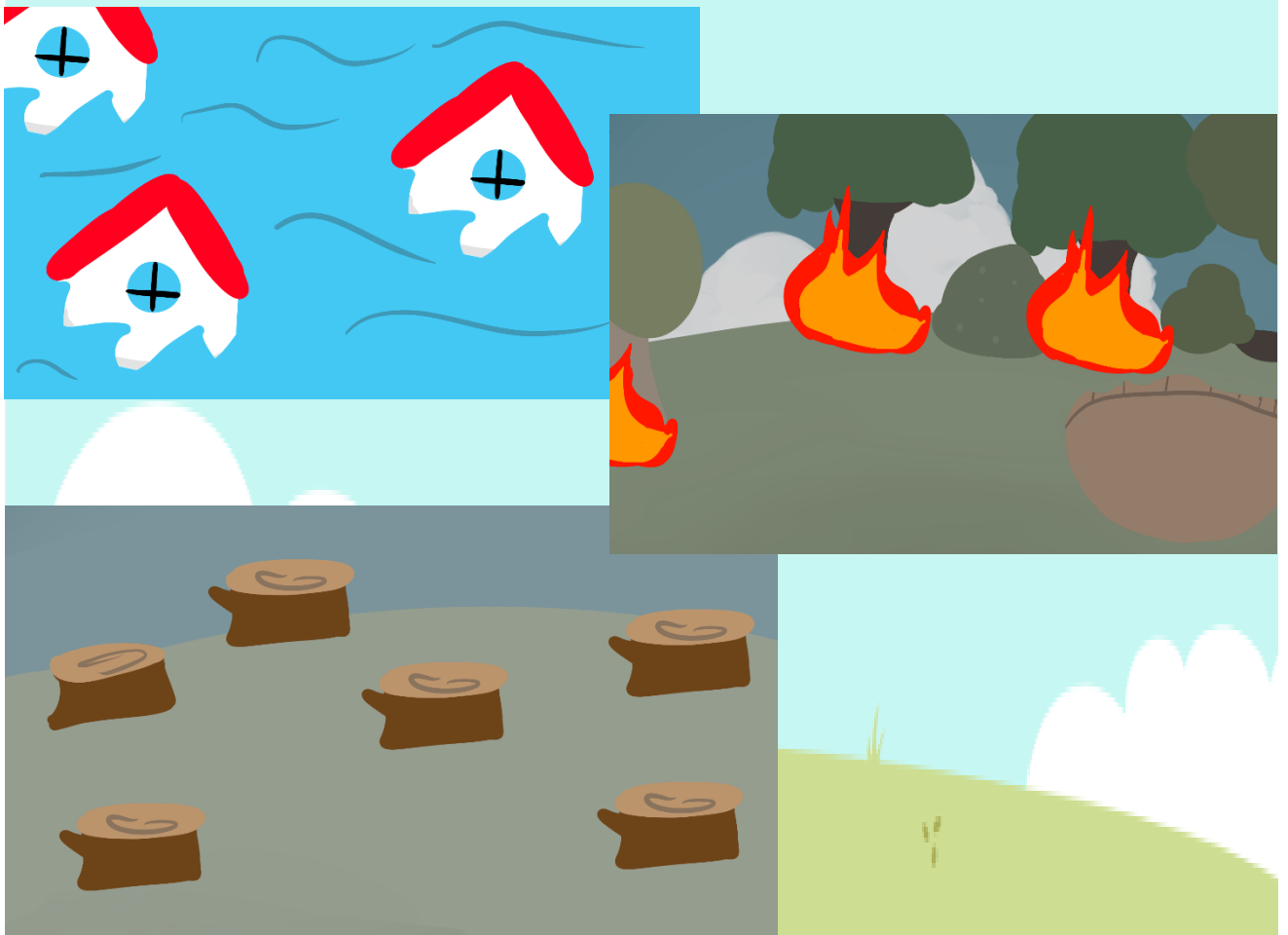


To protect themselves, the little friends ran toward a mountain of organic residues, placed on a side of the orchard, under a tree. There, among those residues, that seemed to be fruits and vegetable debris, they decided to wait until the storm passed.



- “It's not rainy season yet! What's going on?” Lumbricus complained as he hugged his book so it wouldn't get wet.

- “It must be due to the climate change. Lately it is being a lot of talk about this. It is said that it is caused by human beings activities” Xenylla commented.



Then something caught Xenylla's attention...

- “Look Lumbricus, how strange! Chards, lettuces and carrots that grow close to this ‘mountain’ looks vigorous and healthy, while those plants far from this mountain look smaller and yellowish”.



- You're right! Once the rain stops let's go to investigate the surroundings.

Suddenly, from that dark mountain emerged a paunchy pink earthworm.

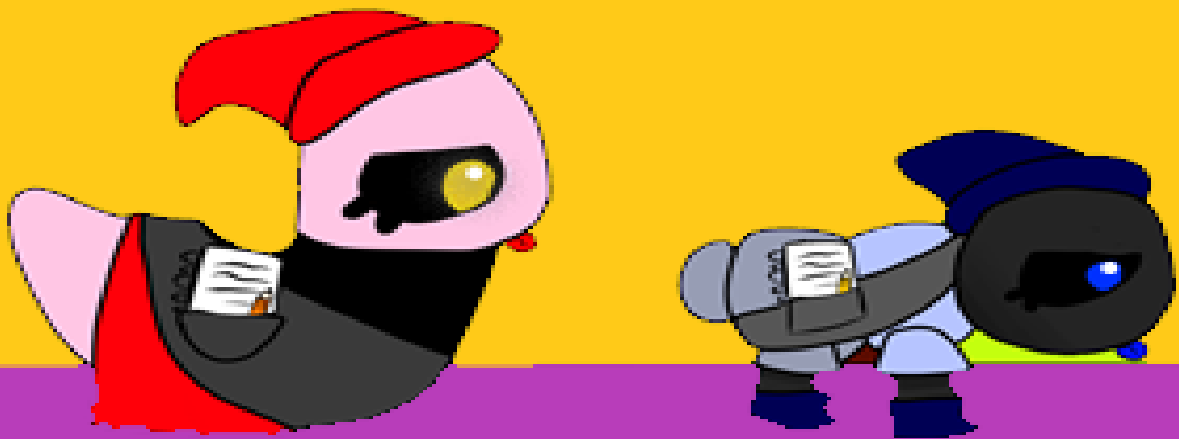
- "Hello, my name is Kurucha! I look dirty and tired because I have been working non-stop since very early. I've never seen you kids around here before! Who are you? What are you doing here?"

- Nice to meet you Kurucha! We came here to protect ourselves from the rain, but we don't want to disturb you. As soon as it stops raining we'll leave.



- “No problem, said Kurucha. Suits me well to rest a little bit and have a chat with someone like both of you, who seem so friendly”.

- “My name is Lumbricus and I'm also an earthworm, but since I'm still a little one I don't work. Nevertheless , I'm always busy because I study a lot”.



- “I am Xenylla, a know-it-all springtail, according to what my friends say... replied with a smile. It's the first time we come here. What is this place?”

- “This great ‘mountain’, which is humid, brown and have such a special aroma, is a compost bin where all the vegetable residues, that people accumulate here, are transformed into humus by special and beneficial soil organisms. I collaborate with them since we work as a team” said Kurucha very proudly.



- “Humus? What's that?” asked the children.

- “It is nothing less than transformed organic matter. Humus is a dark, soft, porous and nutrient-rich product. When it is incorporated into the soil, makes it more fertile and capable to nourish plants and animals”.

While caressing her pink paunchy, Kurucha added:

“Fortunately, while we work, at the same time we feed very well on residues”

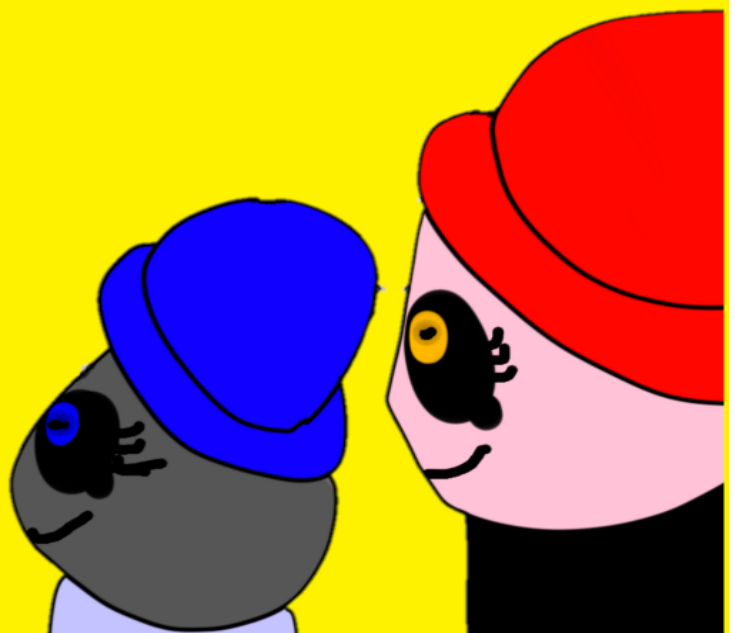
HUMUS



- “That is why so many vegetables and fruits, such as chards, lettuces and carrots, growing near the compost bin, have good appearance and color” thought Lumbricus.

Then, looking to the right and to the left, asked:

- “Who are those special organisms that work as a team with you? Where are they? Neither Xenylla nor I see anyone else here”.



- “Because they are working hard inside this mountain and because most of them are very but very small. So small, that they cannot be seen with the eye alone” Kurucha said.

- “Yes! For that it is required an special device called a Microscope...Right?” asked Xenylla showing off being a know-it-all springtail.



- “That's right! The most important soil organisms involved in organic matter transformation are bacteria, fungi and actinomycetes. This group of microorganisms are called "decomposers" and they are responsible for soil feeding.

Since the little friends were very interested on the soil organic matter, they tried to make more question but she told them:

- “Kids, I must keep working, decomposing and eating... Bye bye”. Having said that, Kurucha got lost inside the compost bin.



As soon as the last drop of rain water fell, the friends went to explore the orchard. Suddenly fear paralyzed them, when they noticed an old centipede walking slowly towards them.

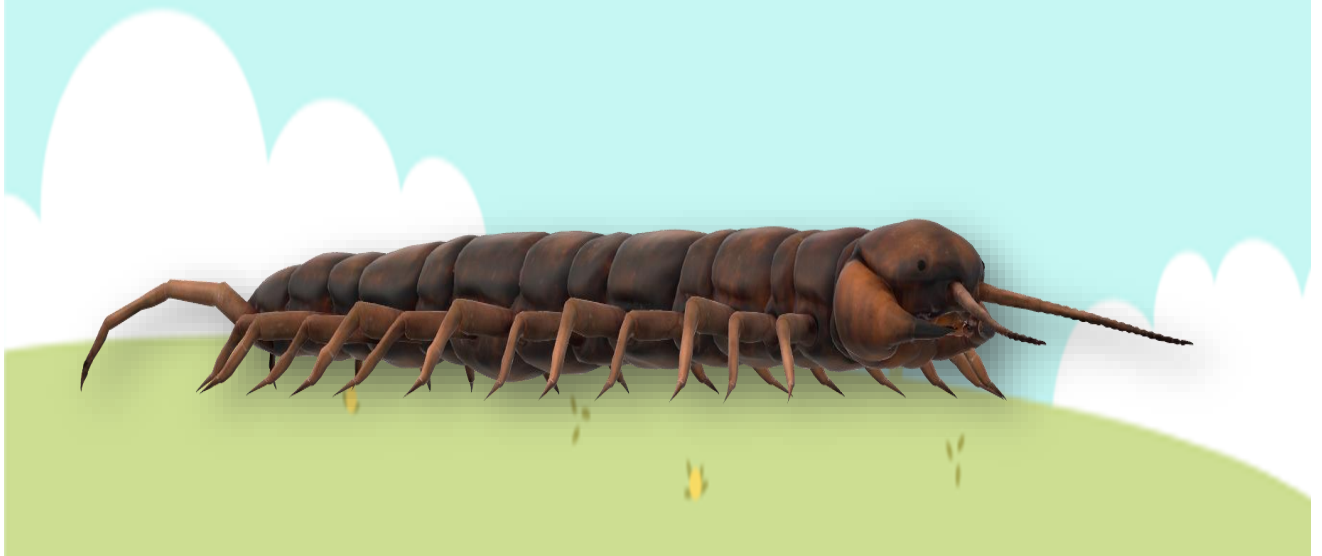
Although the centipede looked a little bit serious, he introduced himself in a kindly way:

- “Good afternoon, my name is Chilopodo. What are you doing here? Are you lost?”



- “My name is Lumbricus and he is my friend Xenylla. We are going through the orchard to find out why there are big differences between fruits and vegetables that grow near the compost bin and those growing on the opposite site of the orchard. What do you think about this?”

Chilopodo answered: “This must be due the nutrient-rich leachate, which is generated during the organic transformation process in the compost bin, and nourishes the vegetables that grow nearby”.



The little friends thought on what Kurucha told them. But Xenylla, who still had doubts, asked the centipede:

- “What are soil nutrients?”

- “Nutrients are essential minerals that when dissolved in soil water, plants can take up thanks to their roots. This way all vegetables grow, develop and look healthy”.

- “So if all plants take nutrients from the soil, why do some of them look small, fragile and yellowish?” questioned Xenylla.

NUTRIENTS



- “Smart question!” exclaimed Chilopodo... “It happens that soils from producing so much, gradually become depleted. This leads to slowly and unhealthy plants growing”.

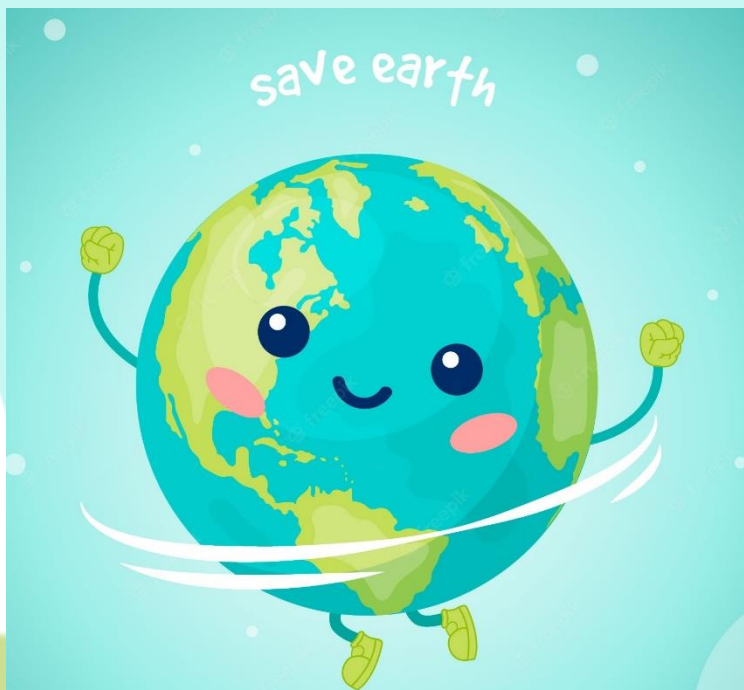
- “Recently were told that the soil must be fed. What does it mean?” Xenylla asked.

- “It means that in order to maintain soil’s fertility, it’s necessary to incorporate humus and thus replaced nutrients that were removed by fruits and vegetables. Otherwise, there would be negative consequences for everyone's life and wellness”.



-“Consequences?”...asked Lumbricus.

- “Yes, such as soil degradation and thus it could not fulfill with functions to sustain planet life. It is necessary to regenerate their nutrients lost by adding humus, manure and also crop residues. We also have to be careful not polluting or throwing garbage anywhere. We must always keep in mind to take care of the planet, which is our home”.

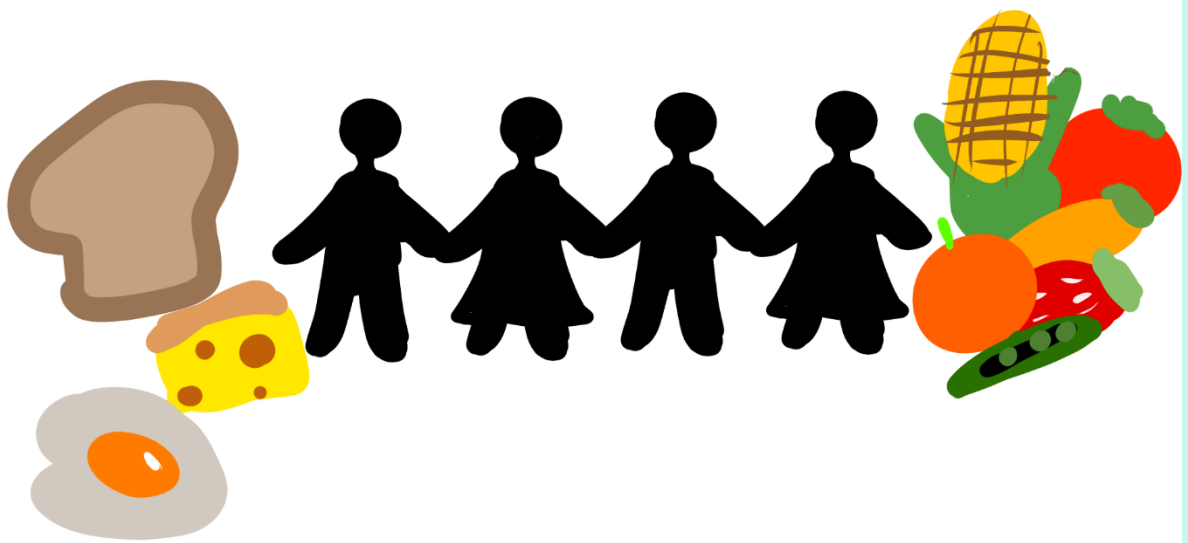


As the sky was getting reddish and night was coming soon, the centipede realized that was time to go for catching insects, since he was a predator organism. So he said goodbye and go away moving all his short legs in the same direction.

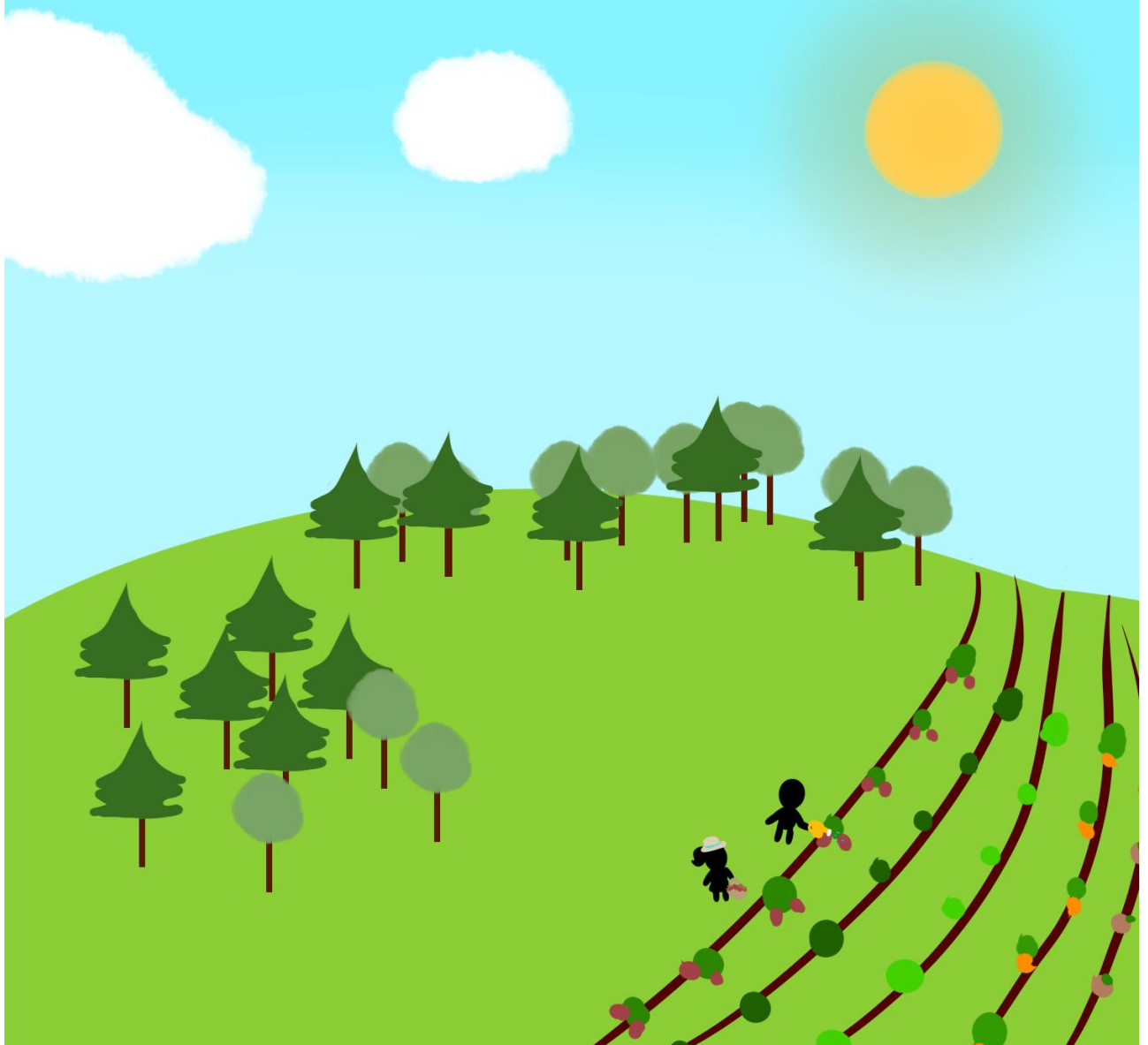


Lumbricus and Xenylla moved among orchard looking at the beautiful chard, while both said aloud:

“We must take great care of SOIL IS WHERE FOOD BEGINS”



**TRUE TALE, UNTRUE
TALE...TELL YOURS
THAT THIS IS
ALREADY
FINISHED...**





THE END

