

## Chocolate from the gods?

### Chocolate Tree, Vanilla Vine

3<sup>rd</sup> – 5<sup>th</sup> grade

ELA, Social Studies

Standards Met:

NGSS: 3-LS4-3, 3-LS3-2, 4-LS1-1, 5-LS1-1

Common Core: [CCSS.ELA-Literacy.RL.3.2](#), [CCSS.ELA-Literacy.RL.3.3](#), [CCSS.ELA-Literacy.RL.3.6](#), [CCSS.ELA-Literacy.RL.3.7](#),

## INTRODUCTION

**Essential Question:** How can mythology be used to explain culturally meaningful phenomena?

### Background Knowledge:

**Chocolate** is processed from the seeds of the cacao pods, which are the fruit of the Cacao tree.

- The white flowers on the tree grow directly out of the bark
- The tree grows best near the equator and is indigenous to Mexico and the Amazon River Basin (it may be helpful to show students a map). The tree grows in very warm climates near the equator.
- The tree has a special pollinator called the midge
  - The pollinator is so small that it is also called a 'no-see-um'
  - This pollinator lives in the soil around the tree
  - When these trees are transplanted without some of the soil underneath, the flowers will not be pollinated and the tree will never produce fruit
- It takes 3-5 years for the tree to produce any fruit
- The tree has to be harvested by hand
- The tree is never climbed as not to destroy the delicate flowers on the trunk
- It takes 5-8 months for the fruit to ripen
- Only 3 out of every 1000 flowers are pollinated, fertilized, and produce fruit. Only 0.3% (less than 1%) of the flowers on each tree will produce fruit that can be processed into chocolate
- The flavor of the chocolate comes from the roasting process
- The beans produce chocolate liquor, which can be separated into cocoa butter and cocoa powder
- The unprocessed seeds are quite bitter tasting

### Vanilla

- Vanilla is indigenous to South Eastern Mexico.
- Vanilla is a member of the orchid family and is the only orchid that produces edible fruit.
- It grows as a clinging vine, reaching lengths of up to 300 feet, from which sprout pale greenish-yellow flowers, about four inches in diameter. Vanilla is currently grown in tropical or sub-tropical regions.
- Mexico is the only place in the world where the Melipona bee pollinates the flowers. In places other than Mexico each flower must be hand pollinated in the early morning in order to produce a vanilla pod "bean". Each flower remains open for just 12 hours, after which, if not pollinated, it wilts, dies, and drops to the ground.
- Once pollinated the pod forms. This pod remains on the vine for 8-12 months and turns brown when ripe. The pod must then be dried for 5-8 months before it can be used.
- Vanilla is the second most expensive spice in the world (after saffron) because its production

## Chocolate from the gods?

### Chocolate Tree, Vanilla Vine

3<sup>rd</sup> – 5<sup>th</sup> grade

ELA, Social Studies

Standards Met:

NGSS: 3-LS4-3, 3-LS3-2, 4-LS1-1, 5-LS1-1

Common Core: [CCSS.ELA-Literacy.RL.3.2](#), [CCSS.ELA-Literacy.RL.3.3](#), [CCSS.ELA-Literacy.RL.3.6](#), [CCSS.ELA-Literacy.RL.3.7](#),

is so labor-intensive. Currently, Madagascar produces most of the world's vanilla.

- Because vanilla is so labor intensive, the majority of vanilla used today is synthetic. Artificial vanilla is synthesized from wood pulp, coal-tar and the spice clove.
- Vanilla is the dried pod of an orchid plant; the name derives from the Spanish word *vainilla*, which means "little pod."
- Vanilla was used by the Aztecs for flavoring their royal drink xocolatl - a mixture of Cocoa (chocolate) beans, Vanilla and honey.

## PRE-VISIT ACTIVITIES

ELA/ Social Studies

Have students read the legend of Vanilla

- <http://storiesfromtheamericas.blogspot.com/2009/02/legend-of-vanilla.html>
- (Another version can be found here: <http://www.vanillaqueen.com/legend-of-vanilla/>)

Have students read the Mayan folktale The Chocolate Tree by Linda Lowery and Richard Keep

Discuss mythology and its role in explaining the unexplained. Discuss the cultural significance of mythology. Discuss how important nature (these trees specifically) is in defining the culture of a people.

- Do you think the crops of Vanilla and Chocolate were important to the indigenous people of Mexico? What clues help you to form this conclusion?
- How might outside cultures have viewed these trees? Or the crops (vanilla and chocolate) produced by these trees?

Extension:

Discuss the effect of colonization on these trees that are now primarily grown (for commercial use) outside of Mexico. Discuss the impact on the Mexican economy. How does that effect the cultural connection or importance of these trees? How do you think that effects how Mexican cultures see themselves?

\*\*What happens to people when they have important aspects of their culture taken over (or stolen) by their colonizers?

## Chocolate from the gods?

### Chocolate Tree, Vanilla Vine

3<sup>rd</sup> – 5<sup>th</sup> grade

ELA, Social Studies

Standards Met:

NGSS: 3-LS4-3, 3-LS3-2, 4-LS1-1, 5-LS1-1

Common Core: [CCSS.ELA-Literacy.RL.3.2](#), [CCSS.ELA-Literacy.RL.3.3](#), [CCSS.ELA-Literacy.RL.3.6](#), [CCSS.ELA-Literacy.RL.3.7](#),

## VISIT/ EXPLORATION

### Sugar from the Sun, Children's Garden

#### Chocolate Tree (Cacao Tree):

Visit the Chocolate tree.

- Recall
  - Remind students of the parts of the tree (roots, leaves, flowers, fruit, seeds)
  - Have students identify the parts of the tree that they can see.
  - Ask students about the parts of the tree that they cannot see.

Questions to ask:

- Sensory:
  - What do you observe about this tree?
    - Older students can write down their observations, a teacher can write down the observations of the younger students.
  - Do you see any fruit growing on the tree?
  - What do you think the tree smells like? (Allow students to smell the leaves or flowers of the tree without removing anything from the tree)
  - What does the tree smell like?
  - If the tree and the fruit do not smell like chocolate, do you think it tastes like chocolate? How are smell and taste related?
  - What do you think has to happen to make the chocolate smell like chocolate?
  - Why doesn't the tree smell like chocolate?
  - What are those little white things that you see on the bark of the tree?
  - Do you notice anything special about the flowers and how they grow?
  - Do you notice anything special about the leaves?
  - What about the fruit?
- What do you think happens to make the fruit turn brown?
- How do you think they harvest the fruit from the tree?
- What do you think would happen if people climb this tree to get to the fruit?
- How do you think they keep the tree from getting too tall?
- Other than eating the fruit of the tree, can you think of anything else that we can use this tree for?

Go over the facts about the Cacao tree and processing chocolate.

Answer student questions at the tree.

Walk students to the Vanilla Vine on the south side of the room a few feet from the Chocolate Tree.

Visit the Vanilla Vine.

## Chocolate from the gods?

### Chocolate Tree, Vanilla Vine

3<sup>rd</sup> – 5<sup>th</sup> grade

ELA, Social Studies

Standards Met:

NGSS: 3-LS4-3, 3-LS3-2, 4-LS1-1, 5-LS1-1

Common Core: [CCSS.ELA-Literacy.RL.3.2](#), [CCSS.ELA-Literacy.RL.3.3](#), [CCSS.ELA-Literacy.RL.3.6](#), [CCSS.ELA-Literacy.RL.3.7](#),

- Recall
  - Remind students of the parts of the tree (roots, leaves, flowers, fruit, seeds)
  - Have students identify the parts of the tree that they can see.
  - Ask students about the parts of the tree that they cannot see.

Questions to ask:

- Sensory:
  - What do you observe about this vine/plant?
    - Older students can write down their observations, a teacher can write down the observations of the younger students.
  - Do you see any fruit growing on the tree?
  - What do you think the tree smells like? (If possible, allow students to smell the leaves or flowers of the vine without removing anything from the vine or tearing any leaves)
  - What does the vine smell like?
  - What do you think the fruit smells or tastes like?
  - Where are the flowers? Do they grow the same way as the flowers on the chocolate tree?
  - Do you notice anything special about the leaves?
  - What about the fruit?
- What do you think happens to make the fruit turn brown?
- How do you think they harvest the fruit from the tree?
- Other than eating the fruit of the tree, can you think of anything else that we can use from this tree?

Go over the facts about the **Vanilla Vine**.

Answer student questions at the plant.

Optional:

Compare and Contrast.

Look at the flowers on the Cacao and on the Vanilla Vine. How are they similar? How are they different?

Look at the fruit. How are they similar? How are they different?

## RESOURCES

### Materials & Websites

-

## Chocolate from the gods?

### Chocolate Tree, Vanilla Vine

3<sup>rd</sup> – 5<sup>th</sup> grade

ELA, Social Studies

Standards Met:

NGSS: 3-LS4-3, 3-LS3-2, 4-LS1-1, 5-LS1-1

Common Core: [CCSS.ELA-Literacy.RL.3.2](#), [CCSS.ELA-Literacy.RL.3.3](#), [CCSS.ELA-Literacy.RL.3.6](#), [CCSS.ELA-Literacy.RL.3.7](#),

## POST-VISIT ACTIVITIES

Research:

How is Vanilla processed? How is chocolate processed? What are the similarities in the process?

Writing:

Have students identify a crop or plant based food that is important to their own culture. Write a myth describing how that crop or plant came into existence and how the early ancestors discovered that crop. Indicate in your story how they feel connected to that food or plant..

- Students could actually do this activity with any culture, but it may be easier for them to discuss how they define their own personal identity or other people that they may know based on something to which they are culturally connected

## ASSESSMENT/ REFLECTION

Student Debate: Divide students into groups of 3 or 4. Have them choose one of the following topics and argue for or against the position stated.

1. Having a "Chocolate Tree" is better than having a Vanilla Vine.
2. The Vanilla Vine was more important to the indigenous cultures of Mexico than the "Chocolate Tree."

<http://storiesfromtheamericas.blogspot.com/2009/02/legend-of-vanilla.html>

The legend tells us that Xanath, the eldest daughter of a family of [Totonac](#) noblemen, was a girl of incredible beauty who lived in a palace close to the ceremonial centre of [Tajin](#). One day, Xanath was going to deposit an offering on the statue of [Chac-Mool](#) (the divine messenger), when she noticed a lovely tune coming from behind an inner courtyard in the ceremonial centre. She peered through the door and saw a young man, whistling to himself. It was a handsome and strong young fellow called Tzarahuin. Xanath loved music, and soon they were exchanging tunes, and songs and laughter. Love at first flourished between them. The young lovers tried to meet as often as possible.

### **... And their love matured and grew.**

Their love grew and matured although Xanath was a noblewoman, and Tzarahuin was not. He was not a warrior, not a prince, not a priest nor a wealthy merchant; he was an only an artist. But, what an artist! He played music, particularly wind conches, the magical instruments with which to summon people to the ceremonies. He was also a painter. He did decorations for the temple. He had been sent as a young lad to the school in the temple, where the teachers soon discovered his ability for the arts and soon he was allowed to be part of a troupe of artist craftsmen who painted and decorated the hundreds of niches in the ceremonial centre. His family were farmers and when he was free from his duties in the temple, he helped them tend their orchard. He was often very busy working in the upkeep of the temple, but always liked to help his family specially during the harvest season. When he met Xanath, he was coming back from helping his family sell their produce at the market.

### **The fat god of Happiness.**

One day, as Xanath was rushing to meet Tzarahuin, the fat god of Happiness cast his eye on the young girl. His eyes followed her as she ran through the ceremonial centre. He admired the fragility of her frame, and the agility of her movements. She combined both frailty and innocence, with strength and determination. The more he saw of her, the more he wanted her. His eyes followed her everywhere, all the time. Twice, he approached her and tried to speak to her, but she ran away, frightened that the god of Happiness would wish to speak to a humble Totonac girl. The god however, was not to be dissuaded easily and tried one third time to approach Xanath. This time, the girl stayed and listened to what the god had to tell her.

Xanath listened carefully and after the god of Happiness confessed his love for her, she sadly told him that she could not marry him, because her heart already belonged to another one. The god of Happiness was angry that a simple Totonac girl would refuse him and he decided to take matters into his own hands. He went to visit the girl's father. He shared with the him secrets that were only known to the gods, and the wealth and prestige of Xanath's father increased greatly. Soon, after this, Xanath was ordered by her father to marry the god of Happiness. However, Xanath, full of inner strength defied both her father and the god of Happiness. She refused to leave Tzarahuin. In total rage, the god of Happiness transformed Xanath into a feeble, delicate plant, with lovely white flowers and an intoxicating smell. When Tzarahuin found out what had happened to Xanath, he took his own life, at the foot of the plant.

The legend tells us however, that he comes back every spring in the form of a humble [melipona bee](#) and spends hours tenderly circling around the petals of the vanilla flower, making love to his Xanath.

Another version can be found here: <http://www.vanillaqueen.com/legend-of-vanilla/>