

Chocolate Unit Study



Created by Jennifer Knick, OrganizedHomeschooler.com

This unit study is all about chocolate! I like unit studies that cover multiple content areas with one general topic. Here you will find chocolate lessons and activities for geography, history, science, language arts, and math.

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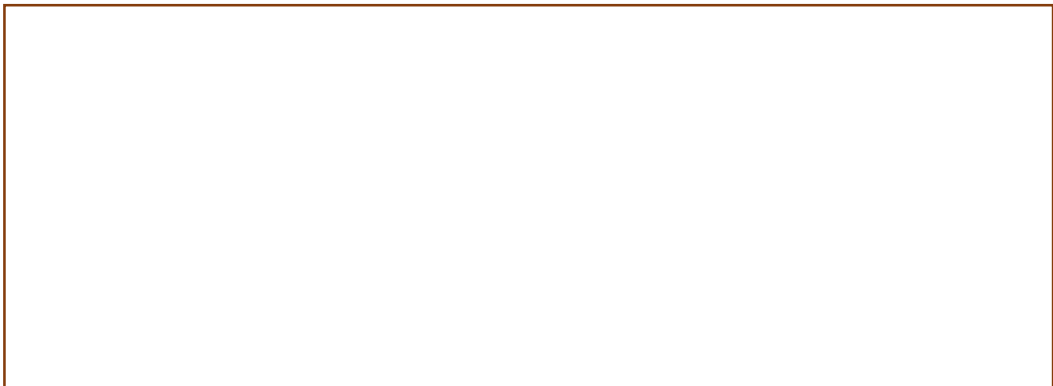
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Directions – Complete the KWL chart as you go through the unit study. K= Knowledge – What do you already know about chocolate? W= What – What do you want to learn about chocolate? L = Learned – What did you learn about chocolate?

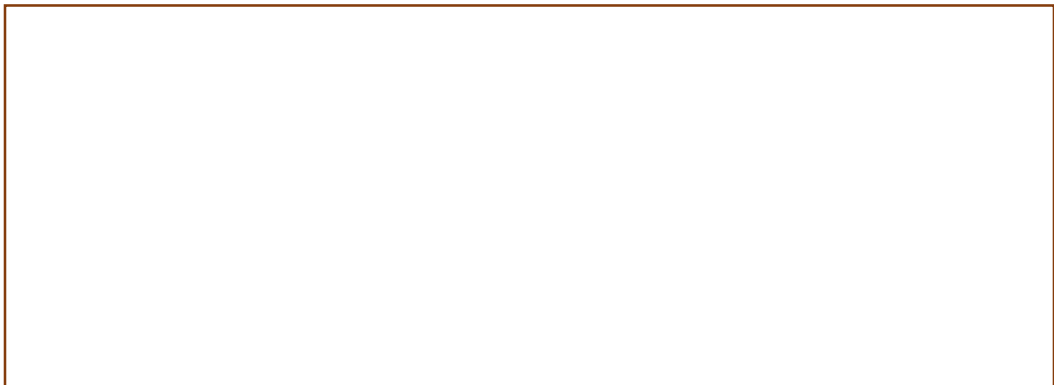
K



W



L



Cacao trees, also called *Theobroma cacao*, grow in the part of the world known as the Chocolate Belt. This is the region 20 degrees north of the equator (the Cancer of Cancer) to 20 degrees south of equator (the Cancer of Capricorn). The rain forest weather patterns are just right to grow this special evergreen tree.

The region of the world where a cacao tree is grown influences the flavor. All of the factors of the environment work together to determine the distinctive flavors. This is most evident in single origin chocolates. Single origin means that the chocolate is composed from cocoa beans from only one country. Many large candy companies mix beans from multiple countries together to create their unique proprietary blend.

There can be minor distinctions among cacao farms, but typically cacao follows this pattern:

Mexico – earthy

Venezuela – nutty

Costa Rica – fruity

Ecuador – floral

Vietnam – fruity but spicy

Ghana - chocolatey

As you can see, there are many subtle flavors to chocolate.

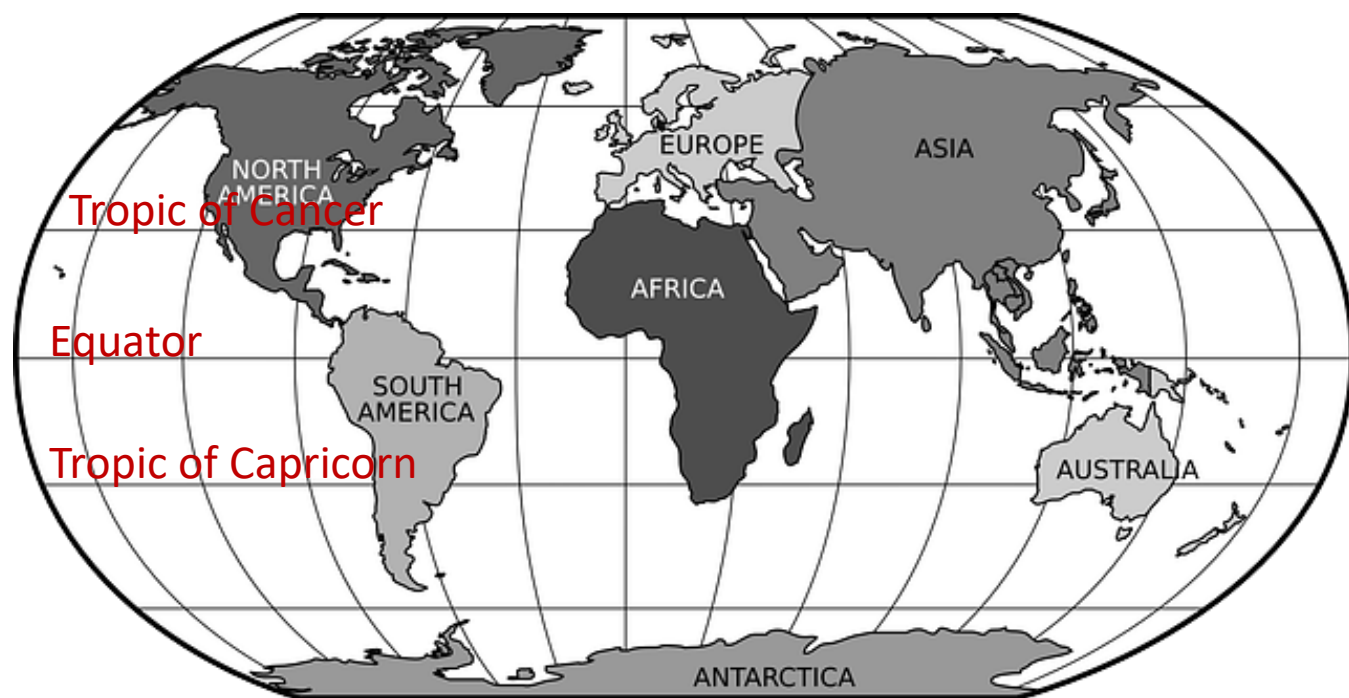
One important vocabulary note:

Cacao – *Theobroma* tree

Cocoa – Pods that grow on the tree

Cocoa beans – Beans that grow inside the cocoa pods

Directions – Lightly color in the chocolate belt. Answer the questions below.



1. What is the only state in the USA that can grow cacao?
2. Name the only two continents where it is impossible for chocolate to grow?
3. Do you think cacao trees will grow well in a cold environment? Why or why not?

History of Chocolate

Historians believe that the first people to use the cocoa pods were the ancient Olmecs. The Olmec civilization lived in Mesoamerica. Mesoamerica made up present day southern Mexico and Central America. The Olmecs are believed to have lived in an area which is now part of Mexico. They lived from about 1200 to 200 B.C.E. Not much is known about the Olmec people because they did not keep written records. However, some of their stone artwork remains today.

The Mayans and Aztecs used cocoa beans next. These civilizations were also located in Mesoamerica. The Mayans farmed the beans, beginning the practice of cocoa farming. The Aztecs used the beans but were unable to grow them so they traded other goods for the Mayan cocoa beans.

The cocoa beans were very important. They were used as currency and as offerings to the gods. The land where cacao trees grew was so valuable that the Aztecs eventually seized this land and included it in their empire.

Montezuma was an Aztec king who ruled for many years. He considered cocoa beans to be very precious and valuable. People even paid their taxes with cocoa beans!

The chocolate we know and love was prepared very differently during the time of the Aztecs. It was called chocolatl and was typically served as a cold frothy drink. Spices such as chili were added instead of any sweetener. The liquid was repeatedly poured from one chalice to another from great heights in order to incorporate air and create a frothy drink. This special drink was not something common people would drink. It was reserved for high ranking officials and the military.

There was one way a commoner could drink this bitter cold beverage – offer him or herself up as a human sacrifice. In this case, blood was mixed in with the chocolate and water. This was said to have a calming effect on the people awaiting sacrifice.

In 1502 Christopher Columbus sailed to the Americas and encountered a Mayan boat full of cocoa pods. Columbus and his men seized the boat and the cargo, but they were not sure what they had collected. They had never seen a cocoa pod and thought they might be almonds. He took some of the pods back to Spain, but did not do anything with them. This was not the sort of treasure he wanted.

In 1519 Hernando Cortes landed in Mexico. Montezuma served this Spanish explorer chocolatl. He wasn't there in search of special drinks though. He eventually conquered the Aztec civilization. The explorers did not care for chocolatl prepared the traditional Aztec way, so they began to sweeten it with sugar.

The Spanish explorers brought the cocoa beans back to Spain. This was the first time anyone in Europe had ever tasted chocolate. The drink was now served sweetened and hot. It quickly became popular with the wealthy. Cocoa and sugar had to be imported which made chocolate extremely expensive.

100 years later the drink spread throughout Europe. It was still very expensive and a drink typically reserved for the noble class.

In the early 1700s settlers brought chocolate to the North American colonies. The first American chocolate factory, Walter Baker and Co's Mills, opened in Massachusetts in 1765. That same year a machine was created to quickly grind cocoa nibs. This machine lowered the cost of chocolate because it reduced the labor involved.

The chocolate press was invented in 1828. It removed more of the cocoa butter from the cocoa beans. This helped the final product mix easily with water. At this time all chocolate was still served in beverage form.

15-20 years later a chocolate company in England created the first ever chocolate bar. This was the beginning of chocolate candy as we know it today.

From Cacao Tree to Chocolate Bar

Cacao trees grow in the rain forests near the equator. The cocoa pods are roughly the size and shape of footballs. They grow from the tree trunk as well as the branches.

The cocoa pods are harvested by hand. The farmers are careful not to damage the pods or the tree trunk.

Next, the pods are cracked open and the beans and white sticky pulp are removed.

The cocoa beans and pulp are covered and ferment for about one week. This fermentation step helps the flavors develop.

Then the beans are dried for shipping.

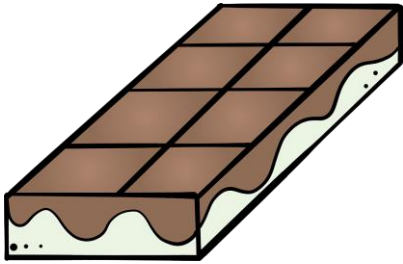
The beans are now at a chocolate factory where they are cleaned and roasted. A machine will separate the cocoa bean shell from the nib.

A special machine will grind the nibs into a thick chocolatey paste. The paste will then be pressed to remove the cocoa butter.

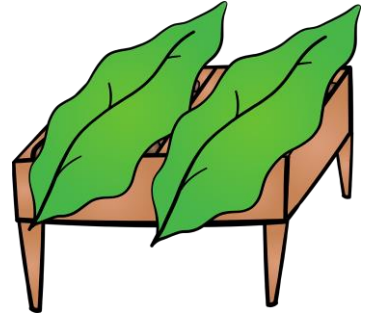
The liquid chocolate is mixed with any special flavorings and poured into molds. The shape of the mold determines the final shape of the candy.

After the chocolate has hardened, it is removed from the mold and ready for wrapping.

Directions: Cut out the following pictures and assemble them in the correct order.



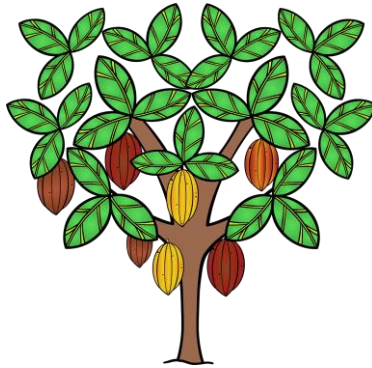
Chocolate mold



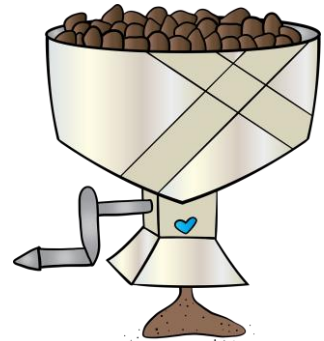
Fermentation



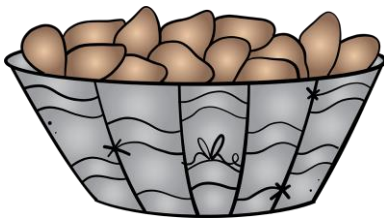
Cocoa pod is opened



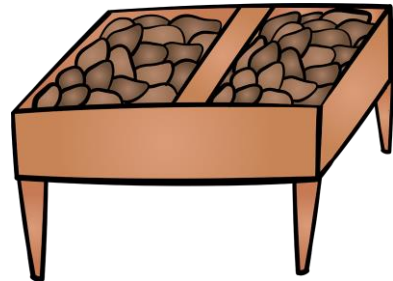
Growing on cacao tree



Grinding



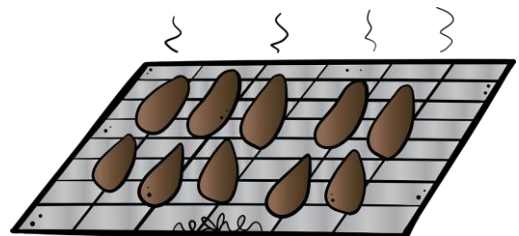
Harvesting



Drying



Finished chocolate bar



Roasting

Chocolate Taste Test Notes

Directions: Buy several varieties of chocolate to taste. Take notes about the appearance, smell, flavor, mouthfeel, and overall impression of each type of chocolate. Start with the lowest percentage of cocoa and work your way up to rich bold flavors.

Type of Chocolate	Appearance	Smell	Flavor	Mouthfeel	Overall

Acrostic Poem

Directions – Write a word, word phrase, or sentence about chocolate that begins with the letter on the left.

C

H

O

C

O

L

A

T

E

Acrostic Poem

Directions – Write a word, word phrase, or sentence about chocolate that begins with the letter on the left.

T

H

E

O

B

R

O

M

A

Chocolate Book List

- *The Story of Chocolate* by C.J. Polin
- *Bean to Bar Chocolate: America's Craft Chocolate Revolution* by Megan Giller
- *Milton Hershey: More Than Chocolate* by Janet and Geoff Benge
- *The Chocolate Touch* by Patrick Skene Catling
- *Charlie and the Chocolate Factory* by Roald Dahl
- *Lilly's Chocolate Heart* by Kevin Henkes
- *Curious George Goes to a Chocolate Factory* by Margret & H. A. Rey
- *The Sweet Story of Hot Chocolate!* By Stephen Krensky & Rob McClurkan
- *Smart About Chocolate: A Smart History* by Sandra Markle

Chocolate Candy Graph

Directions: Graph the colors of M&Ms in your bag.

Teachers – Give each student either a fun size M&M bag or a container with 15-20 M&Ms.

Red	Orange	Yellow	Green	Blue	Brown

I have the most _____ M&Ms.

I have the least _____ M&Ms.

I have an average of _____ of each color.

Create Your Own Chocolate Bar

Step 1: Design your bar

Brainstorm chocolate and ingredient combinations. Specialty ingredients added to candy are called inclusions. Choose from white, milk, or dark chocolate. The inclusion ingredients are limitless – nuts, sprinkles, dried fruit, potato chips, cookies, candy, and more. Look at the artisan chocolate bars in the grocery store for ideas if you are stuck.

Step 2: Shop for ingredients

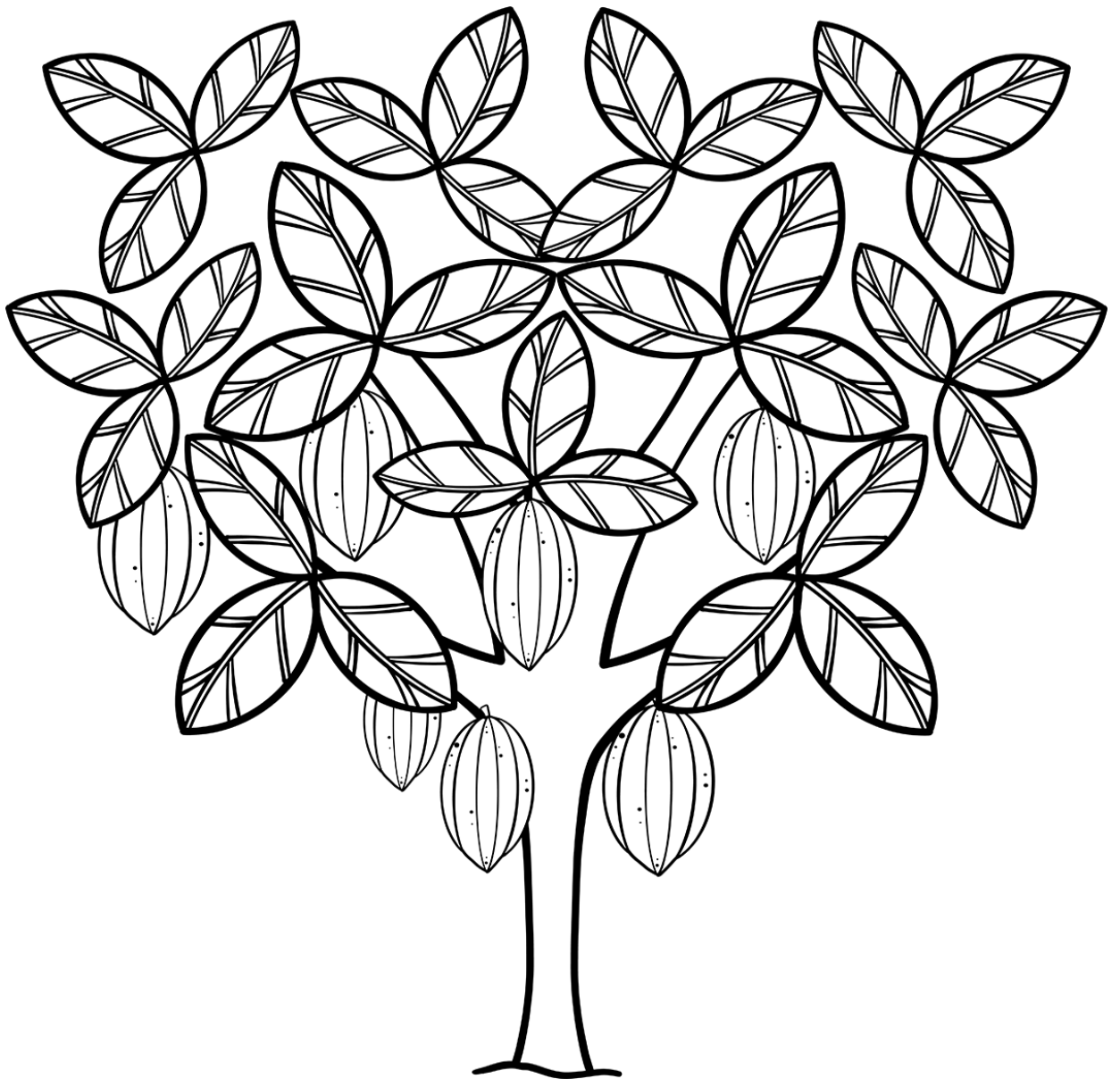
You will need the chocolate base (available in the baking aisle) and inclusions as well as a chocolate mold. Candy molds are available in a variety of shapes – traditional chocolate bars as well as novelty shapes. They are available at some craft stores, specialty baking stores, and on Amazon.

Step 3: Create the chocolate bars (or chosen shape)

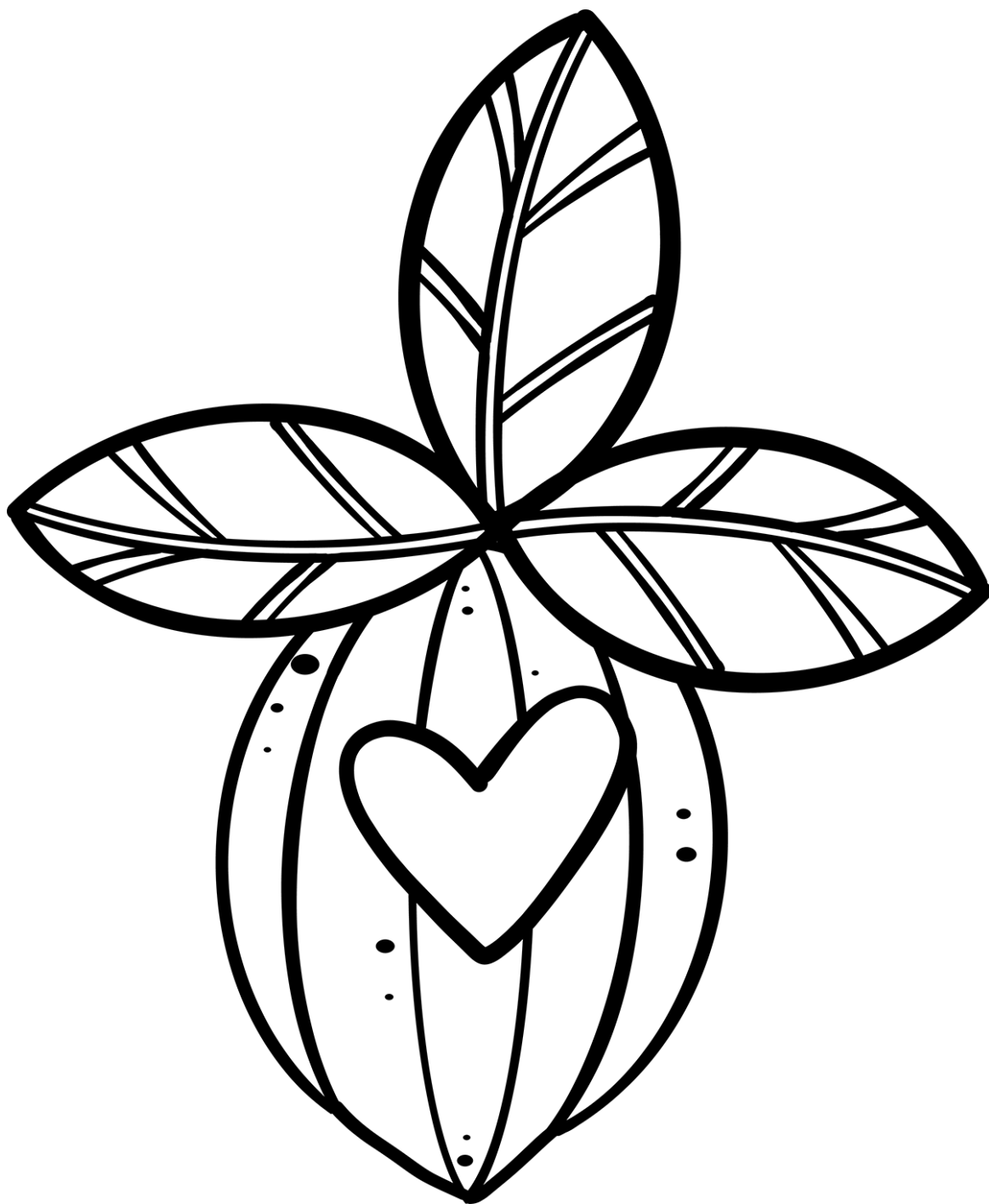
1. Prepare the inclusion ingredients – chop nuts, crush cookies, etc.
2. Melt the chocolate base.
3. Pour the melted chocolate into the molds.
4. Add the special inclusion ingredients.
5. Top with more melted chocolate if there is room in the mold.
6. Gently tap the mold on a counter to remove air bubbles.
7. Put the mold on a baking tray and place it in the refrigerator.
8. Once the chocolate is firm, gently remove it from the mold.
9. Taste or wrap for later.

Art project extension – Create a label for your chocolate creation. Include a company name, logo, and name of your candy.

Coloring Page



Coloring Page



Chocolate Word Search

Find:

Theobroma

Money

Aztec

Equator

Ferment

Spain

Cacao

Pod

Chocolatl

Bean

T	A	L	R	P	A	E	M	W	A	G
O	H	J	S	F	O	O	R	P	B	H
M	P	E	U	Y	N	M	L	O	V	O
B	Y	Q	O	E	Z	W	G	D	O	C
E	I	U	Y	B	J	P	Q	I	M	P
A	K	A	F	E	R	M	E	N	T	E
N	D	T	X	N	W	O	U	S	L	A
L	H	O	N	M	V	A	M	P	A	Z
W	S	R	B	K	C	S	R	A	L	T
C	C	A	C	A	O	H	N	I	J	E
F	A	S	Q	E	I	W	T	N	E	C
C	H	O	C	O	L	A	T	L	F	Q