

WeeMan Science Experiments

Science **Where Does Chocolate Come From?**

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FOR THE LOVERS OF DARK CHOCOLATE

Pollinating the Pods

It takes almost 200 years for a cacao tree to grow, however the beans are harvested for the first 20-25 years of their life. The pods surprisingly grow from the trunk of the tree and not on the branches, as one would expect. This type of tree produces around 2,000 pods. Each pod has approximately 50 to 60 seeds.

How many pods do you think it takes to make one chocolate bar?

It can take up to 400 - 500 cacao beans to make just one bar of chocolate. That's a lot of beans and a lot of pods. How many pods would you need to gather that many seeds?

The cacao tree produce flowers that are not fragrant, actually some claim they smell disgusting. Therefore, they do not naturally attract any type of insect to pollinate them.

What pollinates them then? Any guesses?

To make sure there is a good harvest and the pods have the greatest chance of growth, farmers do the pollinating with soft brushes. A Cacao Farmer also harvests the pods because no machinery has been developed to do this. The Cacao Farmer is important in the development of cacao beans and works in very hot and humid conditions.

LET'S PLAY A GAME ~

Ask the students who wants to be the farmer. Hand them a feather duster and hand all the other students a fake, real, or paper flower. Allow the farmer to "pollinate" by shaking the duster over the flowers.

How is this different than the bees and butterflies pollinating the flowers?

Chocolate Sink or Float

Lesson by Knovelle McClain

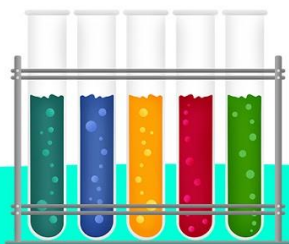
Materials:

- Clear container
- Various unwrapped chocolates and candies, even mini marshmallows
- Sink or float prediction worksheet

Directions:

1. Pour water into container.
2. Distribute the sink or float worksheet.
3. Consider adding some of the following candy pieces: Life Saver, Mini Crunch bar, Twix, marshmallow, Hershey bar, Whoppers, Milky Way, Butterfinger, Kit Kat and more. We used 10 total. As you add each piece of candy ask the students if they think it will sink or float.

youtube Link: https://youtu.be/ZYBa_OC2YZo

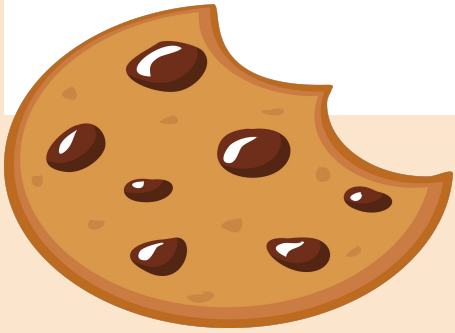


Candy Sink or Float

Chocolate Chip Excavation

Kids love to feel like an archaeologist.

Bake some chocolate chip cookies, but place different types of chocolate pieces into the cookies before they completely cool. Have children use toothpicks, small plastic picks, pickaxe, rakes, and brushes to excavate their cookie and go on a “fossil dig.” Maybe give them an unexcavated cookie to eat afterwards. Help the students record what they found on paper.



Chocolate Race!

Have an adult around to try this experiment.

Carefully push a small piece of chocolate onto an aluminum wire and then carefully push one onto a copper wire. Place these down into a glass of boiling water and see which piece of chocolate slides down the wire. Have students even make a prediction.

Afterwards talk about why and what happened.





Give a piece of each type of chocolate to every student and let them decide which is their favorite!
(tip: try blindfolding the taster!)

	STUDENT NAME	DARK	MILK	WHITE
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
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22				
23				
24				
25				

Of course graphing everyone's favorite type of chocolate is fun.....but also take this list and allow students to predict which type they think will melt first in the sun. You could even try mint chocolate or some other types of chocolates.

Chocolate slime & playdough - edible and non-edible versions:

- 1/2 cup cornstarch
- 1 tablespoon cocoa powder
- 1/3 cup coconut milk

You can add a spoonful of chocolate syrup or powdered sugar. You can even toss in some chocolate chips for texture. Creating your own unique mixture is even more fun! It's just taste-safe, not necessarily to be eaten as a snack.

Chocolate Playdough: 1 cup salt. 2 tablespoons cream of tartar, 1/2 cup cocoa powder, 3 tablespoons cooking oil (any type) 2 cups boiling water.

Non-Edible: Clear Washable School Glue, Sta Flo Liquid Starch, Unsweetened Cocoa Powder, Brown Food Coloring, if you do not have brown food coloring you can mix w colors to make brown: red and green, yellow and purple, blue and orange OR even utilize a little brown watercolor paint.