

10 Minute Lesson Template

Lesson Title: Evolution of Strawberries

Grade Group: 6-8

Topic: Berries

Curriculum Standard: Science – 12B3b

Lesson Background

This is for the teacher's own knowledge, reasoning to topic, how it relates to nutrition and student health

Strawberries have evolved over time. When they were only in the wild, natural selection allowed those with the best adaptations to prosper. This is what changed strawberries from dull green and sour, into succulent, bright red, and juicy.

Lesson Objectives

Only need 1 or 2

Become familiar with how strawberries adapted and evolved over time. Understand the qualities beneficial to survival of today's strawberry.

Classroom Activity

Lesson Description

Brief overview for teacher's own knowledge

Classroom lead discussion on the evaluation of a strawberry

Lesson

This should read like a script with instructions for what teacher should say and do

What sorts of qualities attract you to a food?

Taste, smell, looks, previous experiences

Berries have many of these qualities, which is why they are so popular! They taste delicious, they smell fresh, and their bright colors make them visually appealing.

Who has had a bad experience with a strawberry? What do you remember from that experience? Sour? Hard? Rotten? Accidentally ate part of it you weren't supposed to? These experiences happen to everyone, and they contributed to the evolution of today's strawberry.

Adaptations of strawberries

Strawberries have adapted to attract animals when their seeds are ready to be dispersed and planted. *If* animals were to eat them when conditions were not ideal for their growth, berries could potentially be extinct. When seeds are young, and not yet ready to be planted, the berry is green, sour, and hard.

Who has accidentally eaten a berry that wasn't ripe yet? What did you do?

Spit it out and pick one that's more red next time

Animals do the same thing. Strawberries have adapted so they taste and look bad when the seeds are not

yet mature or ready to be planted. Strawberries turn bright red when they become ripe. This allows them to be seen from far away, or high up, and attracts animals to them. Once consumed, the animal disperses the seeds in a variety of different manners. In addition to the color change, strawberries become tender once when ripe. This is to allow small animals such as birds to easily consume them, dropping seeds as they fly. Prior to ripening, the berries are hard making it virtually impossible for little critters to eat. These adaptations have evolved through natural selection.

Evolution via Natural Selection

As with most other organisms, berries have evolved slowly over time. Those characteristics that allowed them to thrive were passed along to offspring. Berries that turned from green to red to early were eaten before their seeds were ready to be planted. These seeds were unable to grow and did not produce future generations of berries that changed color prematurely. Strawberries that were a dull red color once ripe were not as visible to the eye. These berries risked not being consumed; their seeds were not spread, leaving those with the brighter color to flourish. The same process happened with the tenderness of the strawberry. Those that were still hard when ripe did not have the ability to pass on their traits. As time has passed, natural selection has occurred and only those with the most effective adaptations reproduced. This is why today's strawberries become locally available between May and July, present themselves with a vibrant red color, and are sweet and tender.

Activity

This can be short, just to reinforce concept with students, or it can be the majority of the lesson

Provide each child with one clean, washed, ripe strawberry. Point out how sweet, juicy, and tender it is. Once they have finished their strawberry, have them take a small bite of the unripe part at the top. There are little to no seeds, so animals do not need to eat that part. It will be sour, hard and unappealing.

Closing

Teacher should sum up what was learned for students

The process of how strawberries have adapted to thrive in the ecosystem has been described today. Berries have adapted to be unappealing and taste bad when their seeds are young and not fully developed. When seeds are ready to be planted, the berry turns bright red to attract animals, they become soft, juicy, and sweet. Natural selection has resulted in the survival of those strawberries that stay green during the correct times, and turn the brightest red when ready to be planted, to develop offspring.

Cafeteria Connection

How can what was discussed in the lesson be reinforced in the cafeteria serving line?

Help children determine what other fruits on their lunch menu have adapted into what they are today.

Home Activity

How can the lesson be extended back home – this can be a short activity suggestion or it can offer a suggestion for a follow up lesson to be taught

Share what you learned with your family when you get home tonight. See if your family can determine what adaptation and natural selection process the food on your dinner table went through.