苹果为什么会变色

周六下午，乐乐想给妈妈一个惊喜。他搬来小板凳站在上面，从果盘里挑了一个最大的苹果，拿起水果刀，咔嚓切成两半。他打算切好了端给妈妈，自己去写作业。可是作业写到一半，他想起苹果还放在桌上，跑去看，咦，苹果怎么变色了。

刚才还是奶白色的果肉，现在蒙了一层淡淡的褐色，像谁在上面哈了一口气。乐乐吓坏了，心想苹果是不是坏了，是不是中了毒。他用手指戳戳，褐色的地方软软的，还渗出一点点汁。他站在桌边，端着苹果不敢动，也不知道该扔还是该留。

妈妈从厨房出来，看见乐乐紧张的样子，笑了。她接过苹果看了看，说别怕，苹果没坏，它只是变色了。乐乐问，好好的苹果为什么会变色。妈妈说，苹果果肉里有一种小东西，叫氧化酶，苹果被切开，果肉碰到了空气，氧化酶跟空气里的氧气抱在一起，果肉就慢慢变成褐色了。乐乐问，那为什么没切开的苹果不变色。妈妈把苹果转了个面，指着没切开的皮说，因为皮把果肉护在里面，空气进不去呀。

乐乐还是有点担心，变色了还能吃吗。妈妈说，能吃，就是不太好看。要不我们做个实验。她拿来三个小碟子，切了三片新苹果。第一片什么都不放，第二片抹了一点盐水，第三片挤了几滴柠檬汁。三片排成一排，等了一个小时，第一片褐了，第二片只褐了一点点，第三片还是白白的。乐乐拍起手来，说柠檬汁把氧气挡在外面了。妈妈说，对，柠檬汁里的东西让氧化酶干不了活。

那天晚上，乐乐把三片苹果的事讲给爸爸听，讲得比妈妈还详细，最后宣布自己发现了苹果的秘密。爸爸故意问，那明天苹果还变色吗。乐乐说变，但他不怕了，他还知道办法，盐水、柠檬汁，或者把切好的苹果扣上小盘子，不让空气进去。

后来乐乐在自然课上举手，讲了苹果变色的道理，老师夸他讲得清楚。放学路上他跟妈妈说，原来厨房里也藏着科学。妈妈笑着点头。从那天起，乐乐家切开的苹果再也没褐过，因为每次都是他负责挤柠檬汁。他觉得自己是家里的小小科学家。

Why Did the Apple Turn Brown

On Saturday afternoon Lele wanted to surprise his mother. He dragged over a small stool, stood on it, chose the biggest apple from the fruit plate, took up the fruit knife, and sliced it cleanly in half. He planned to carry it to his mother and then go do his homework. Halfway through his homework, he remembered the apple still on the table, ran to look, and hey, the apple had changed color.

The flesh had been milky white just now; now it wore a thin layer of brown, as if someone had breathed on it. Lele was frightened. Was the apple spoiled? Was it poisoned? He poked it with his finger; the brown part was soft and gave out a little juice. He stood at the table holding the apple, not daring to move, not knowing whether to throw it away or keep it.

His mother came out of the kitchen, saw how tense he was, and laughed. She took the apple, looked it over, and said, do not be afraid, the apple is fine, it has only changed color. Lele asked why a perfectly good apple changes color. His mother said that inside the flesh lives a tiny thing called an oxidizing enzyme. When the apple is cut and the flesh meets the air, the enzyme hugs the oxygen in the air, and the flesh slowly turns brown. Lele asked why an uncut apple does not change. His mother turned the apple over and pointed at the unbroken skin, because the skin guards the flesh inside, so the air cannot get in.

Lele was still a little worried. If it changed color, could it still be eaten. His mother said yes, it just does not look pretty. How about we run an experiment. She brought three small dishes and cut three fresh apple slices. The first she left alone, the second she brushed with salt water, the third she squeezed a few drops of lemon juice on. The three slices lined up, and after an hour the first had gone brown, the second only slightly, and the third was still white. Lele clapped, saying the lemon juice kept the oxygen outside. His mother said right, the stuff in lemon juice stops the enzyme from doing its work.

That evening Lele told his father the story of the three slices, even more detailed than his mother, and announced that he had discovered the secret of apples. His father asked on purpose, so will apples still change color tomorrow. Lele said they will, but he is not afraid now, and he knows the tricks: salt water, lemon juice, or simply covering the cut apple with a small plate to keep the air out.

Later Lele raised his hand in science class and explained why apples turn brown, and the teacher praised him for explaining it clearly. On the way home he told his mother that science hides in the kitchen too. His mother nodded, smiling. From that day on, no cut apple in the house of Lele ever went brown, because every time it was his job to squeeze the lemon juice. He felt like the little family scientist.