



How is Bimla's Cake So Spongy?

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It was five o'clock in the morning. The sun was still asleep.
Chinni yawned as she rode on Abba's cycle.
She helped him in his bakery before going to school.





Creak... went the old bakery shutter as Abba pulled it up.

"I'm so sleepy," said Chinni.

Abba smiled. "Today is a special day."

"Oh yes, Bimla's birthday!" said Chinni.
She was jumping up and down.
Bimla was Chinni's best friend.



"Would you like to bake her a cake?" asked Abba.

"Yes, yes, yes!" said Chinni happily.

Abba and Chinni brought the things they needed from the storeroom.

Flour

Butter

Sugar

Baking powder

Eggs

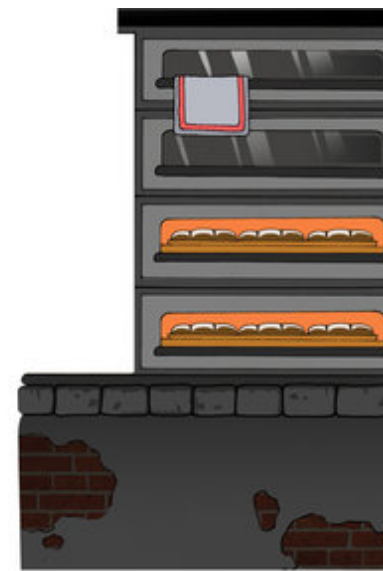
Milk



"How about some chocolate?" asked Chinni. "Bimla loves chocolate." It was Chinni's favourite too.

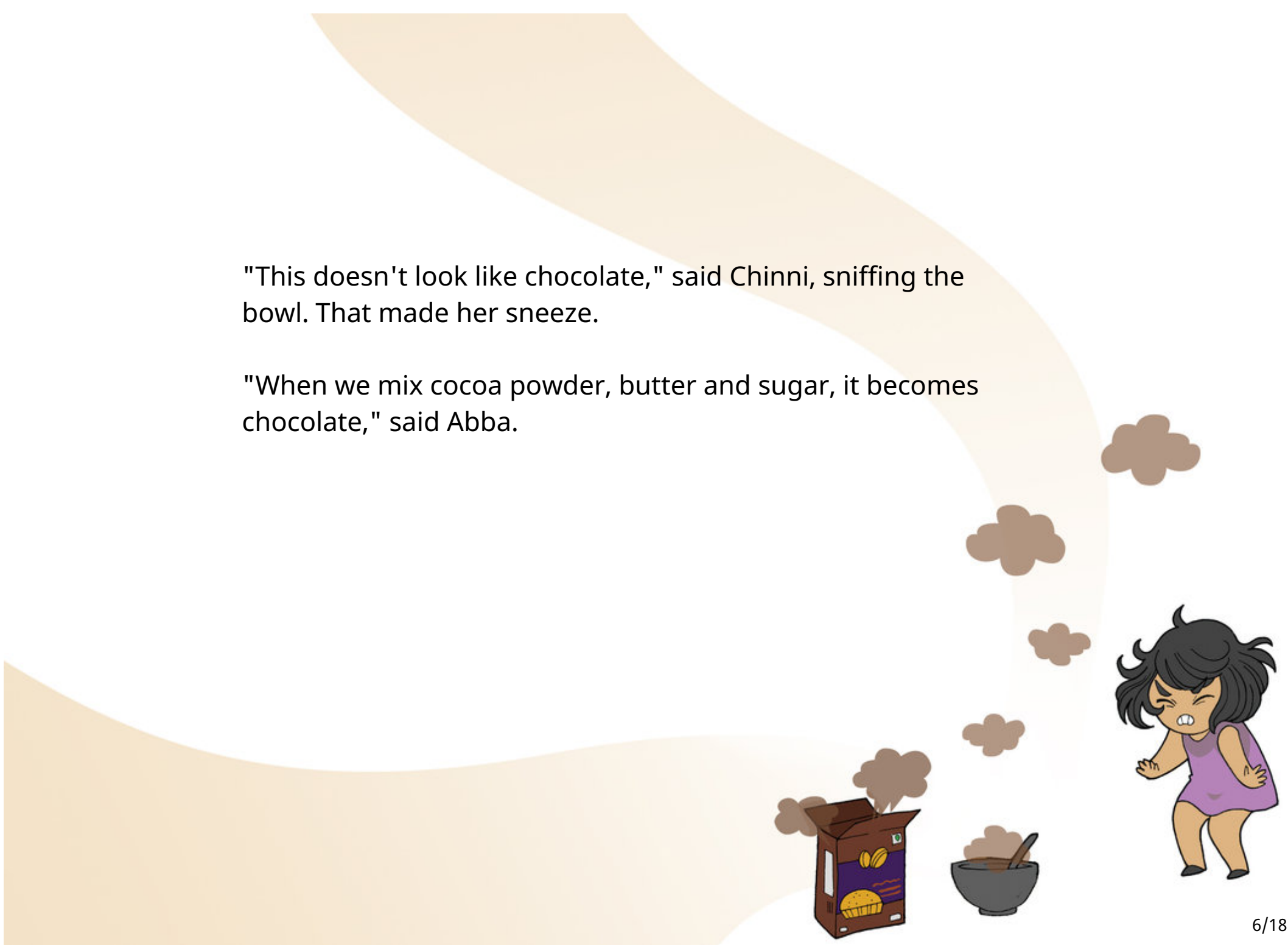
"Good idea," said Abba.

He got some cocoa powder and put it in a bowl.



"This doesn't look like chocolate," said Chinni, sniffing the bowl. That made her sneeze.

"When we mix cocoa powder, butter and sugar, it becomes chocolate," said Abba.



"Ooh, magic!" Chinni's eyes became round.

"No, chemistry!" said Abba with a smile.

"What is keh-miss-tree, Abba?" asked Chinni.

"When different things come together and change into new things, it is chemistry."

"Is baking a cake keh-miss-tree too?"

"Yes, it is!"





Abba mixed the butter and sugar
till they were creamy.
Then he showed Chinni how to break the eggs.
Oops, one fell to the floor.

"Oh no!" said Chinni.

"It's okay," said Abba. "We can clean it up."

Chinni beat the eggs with a whisk.
"My arms are aching," she complained.

"You are doing a great job. Beating the eggs makes the cake
light and spongy," said Abba.

He mixed the flour, baking powder and
cocoa powder together with a pinch of...
"Salt?"



Chinni was surprised. "Bimla won't like a salty cake."

"A little salt makes the cake taste sweeter," said Abba.
"It also helps to hold up the cake."





"Is that chemistry too?"
asked Chinni.

"That's right!" said Abba.
Chinni looked at the dough.

"This is all wet and mushy,"
she said. "It doesn't look like
cake at all."

Abba turned on the oven.
"That's why we heat it," he
said.



"Heat changes the egg and helps the cake become firm. When water is mixed with baking powder, gases are formed, giving rise to bubbles. This makes the cake rise and become light. And butter and milk keep it soft."

"What about the chocolate?"
This was very important to Chinni!

"The cocoa powder will mix with the sugar and the butter, and become chocolate in the cake," said Abba.



Soon a delicious aroma filled the bakery.
Chinni and Abba wore thick gloves.
Then, they took the hot cake out of the oven carefully.

Abba would have to wait for the cake to cool.
Then, he would add some icing and decorate the cake.





After school, Bimla and Chinni walked to the bakery.
Abba was waiting at the door.

"Surprise!" said father and daughter in chorus and led Bimla in.
"Happy Birthday, Bimla!"

Chinni stuffed a piece of cake into her friend's mouth.

"Mmmm ... oh how is this cake so spongy?"

We know how. Don't you?





Chemistry - the science of change

Chemistry (pronounced keh-miss-tree): The study of matter and how it changes.

Matter: Just another word for 'things'. Everything in this world is made of matter. And matter is made of little bits called molecules.

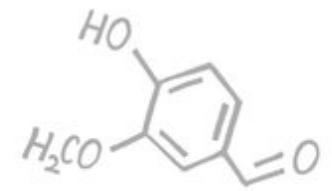
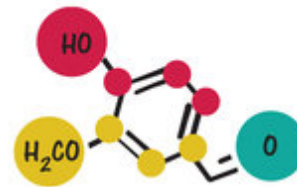
And molecules are made of even tinier bits called atoms.





Chemical reaction: When the atoms of one molecule combine with other atoms, new molecules are formed. This is called a chemical reaction.

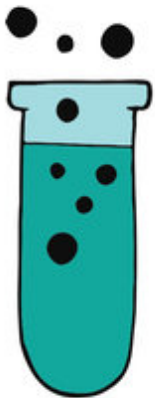
Chemistry all around us: Chemistry is everywhere. It is in the air we breathe, the soap we use for bathing, and the medicines we take when we fall sick. And, of course, in the food we eat.

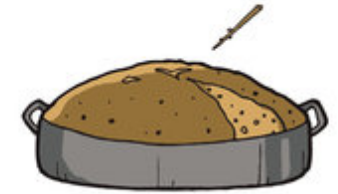


Chemical reactions in baking

1. Water and wheat flour: Wheat has a protein called gluten. When water is mixed with wheat flour, the gluten becomes sticky, like glue. This makes the dough elastic and helps the cake to rise. It gives the cake body when it is heated in the oven.

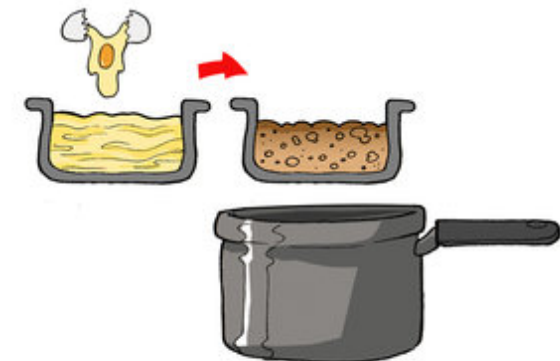
2. Baking powder: When baking powder is mixed with water, carbon dioxide gas is released. This forms bubbles and helps the cake rise and become spongy.





3. Eggs: When eggs cook in the heat of the oven, they make the cake firm while still keeping it moist. Beaten eggs also trap air bubbles, making the cake light.

4. Chocolate: Cocoa powder is bitter. But when we mix it with the right amount of butter and sugar, and heat the mixture, it becomes yummy chocolate.



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How is Bimla's Cake So Spongy?

(English)

Chinni and her father bake a cake for her friend in their bakery. Why are cakes so spongy? What makes them rise? Come, let's find out.

This is a Level 3 book for children who are ready to read on their own.



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