

- 2 Read the article and complete the sentences with one or two words in each space.

- 1 Spencer Silver accidentally made a glue that was easy to take off and didn't the paper or pages it was stuck to.
- 2 Art Fry found that the glue didn't make the pages of his books dirty and so was very good for
- 3 Constantine Fahlberg left a chemical on his hands by mistake, and while eating his lunch he found that his bread tasted unusually
- 4 Saccharine is used instead of to make soft drinks.
- 5 Alexander Fleming noticed that weren't growing around the mould.
- 6 He realised that the substance could be used to cure
- 7 Ruth Wakefield didn't have the right kind of
- 8 The chocolate and dough didn't together.

- 3 Match the **highlighted** words in the text to their meanings.

- 1 a mixture made of flour and water used to make bread, biscuits and cakes
- 2 a substance used to stick things together
- 3 something that grows on old food
- 4 an artificial substance that has a similar taste to sugar
- 5 a room for doing scientific tests

- 4 Complete the sentences with the correct form of the words from Exercise 3.

- 1 Don't eat that! It's got on it.
- 2 Diet cola is the same as normal cola, but it contains a instead of sugar.
- 3 You have to wear special glasses to protect your eyes when working in the
- 4 After you've made the, put it in the oven.
- 5 It hasn't stuck properly. This isn't very strong!

Inventions that changed the world but were made by mistake



When you think of people who have invented something that has changed the world, you immediately think of the achievements of some very intelligent scientists. But their success often comes in an unexpected way. Did you know that the medicine penicillin was discovered because of a mistake? It's amazing to think that something that was an accident then became something that the whole world now uses to stop serious illness.

Here are a few examples of inventions that were made by mistake:

Sticky notes

In 1968, scientist Spencer Silver created a type of **glue** that would stick to things but could be **removed** easily from any surface. He was really trying to create a super-strong glue but failed. Art Fry, another scientist, was tired of his bookmarks falling out of his books. He remembered Silver's special glue and wondered if this might be the answer to his problem. When he tried the glue on his bookmarks, they stuck and didn't damage the pages. It **worked**. It was then that he thought of the idea of using the glue on notes.



Saccharine

Saccharine was discovered in 1879 by the chemist Constantine Fahlberg while he was working in his university **laboratory**. The discovery came because he forgot to wash his hands after spilling a chemical on them, and when he was eating his bread at lunch it tasted unusually sweet. It was later produced in huge quantities as an artificial **sweetener** and is now used in soft drinks to reduce the sugar and calories.



Penicillin

Scientist Alexander Fleming invented penicillin, which helps stop infections by killing bacteria. He was on holiday and he had left a petri dish (a special dish used by scientists to grow bacteria) in his laboratory. When he returned, the dish had an unusual **mould** on it, but there were no bacteria growing. He realised that something in the mould was killing the bacteria. He also realised that if you use this substance on the human body, it stops serious illness. This became the first antibiotic, penicillin, which has saved millions of people's lives over the years.



Chocolate-chip cookies

In the 1930s, Ruth Wakefield owned a very popular restaurant called the Toll House Inn in the United States. While making some chocolate cookies, she discovered she had no special baker's chocolate left and decided to use some normal chocolate instead. She poured it into the **dough**, but the chocolate did not mix with the dough and this was how the chocolate-chip cookie was born.



As Mark Twain said: 'Name the greatest of all inventors. Accident.' Many great inventions are the result of the creative use of a mistake.