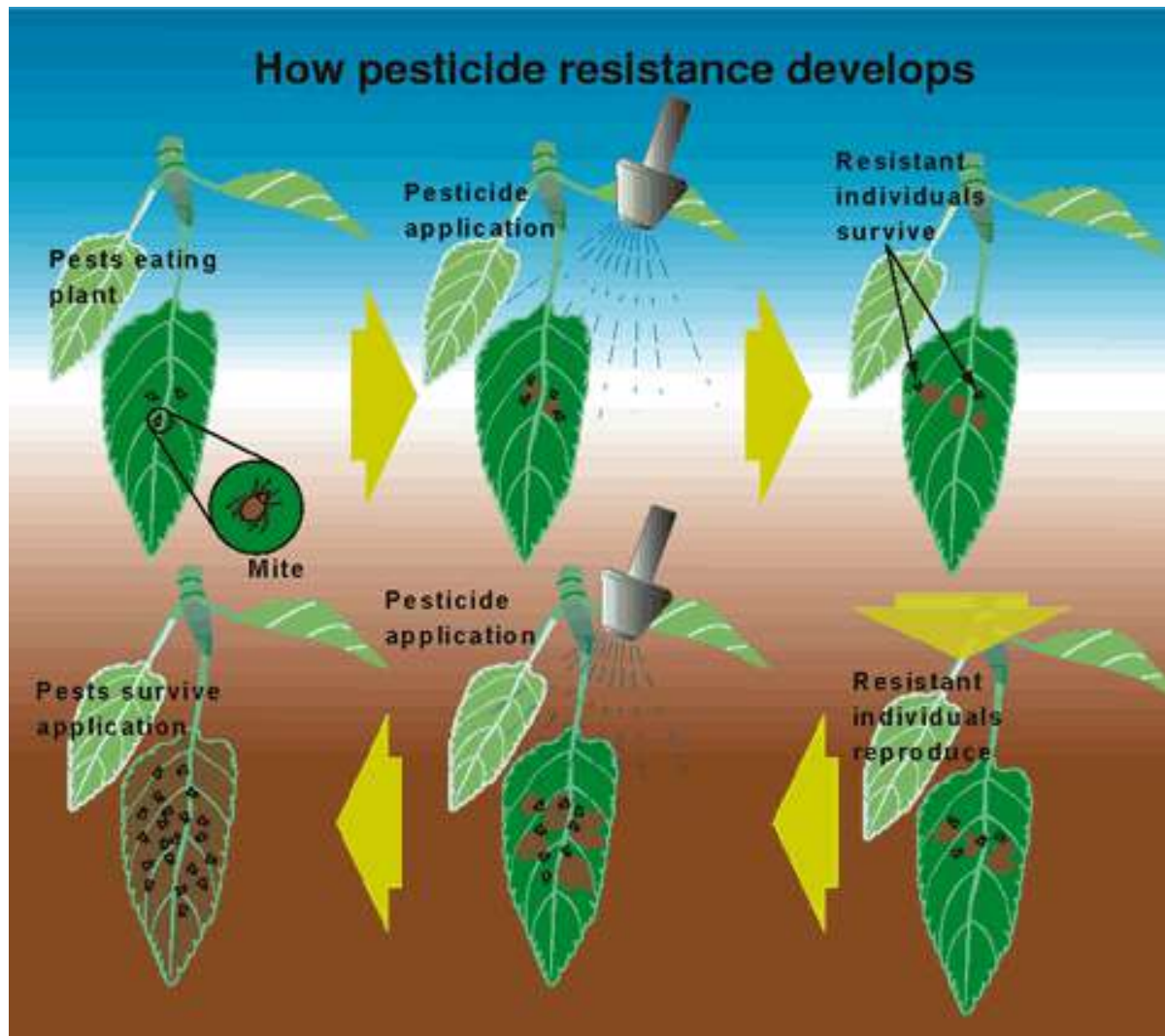


The Role of Evolution in Biological Resistance

SB5e. Recognize the role of evolution
to biological resistance (pesticide and
antibiotic resistance)

How pesticide resistance develops

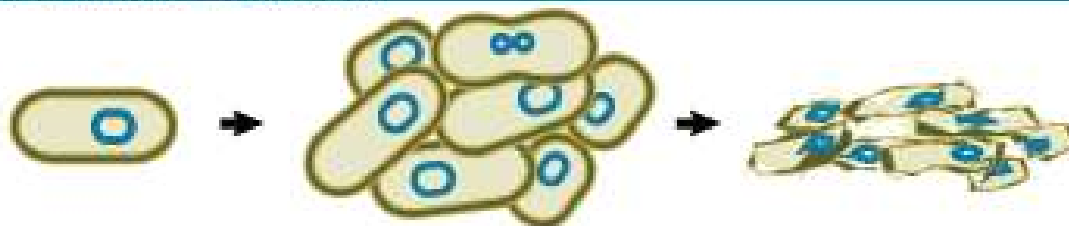


Exposure to bacteria occurs.

Infection occurs and the bacteria spread.

Drug treatment is used.

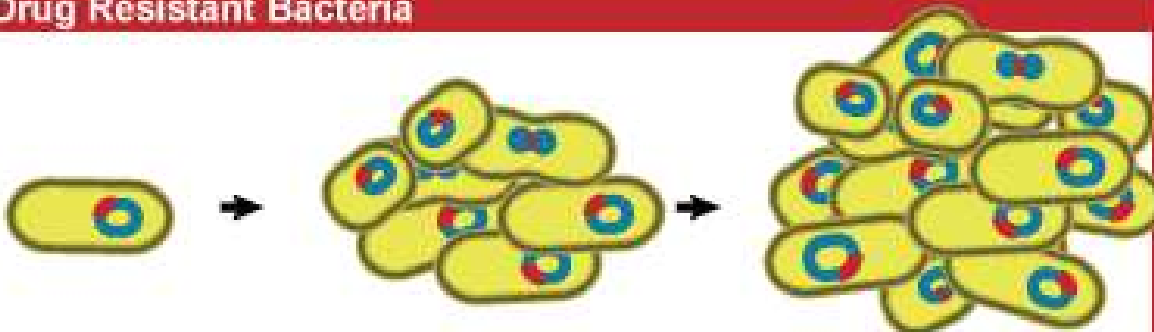
Non-resistant Bacteria



The bacteria multiply.

The bacteria die. The person is healthy again.

Drug Resistant Bacteria



The bacteria multiply.

The bacteria continue to spread. The person remains sick.

Application Question

In 1950, about 97% of Strep throat infections that doctors treated received a prescription of penicillin. By 2000, only about 12% of Strep throat infections were treated with penicillin. From an evolutionary standpoint, why might this be true?

- A. The penicillin made in 1950 was of better quality, due to changes in manufacturing processes.
- B. Over time, the use of penicillin killed off weaker Strep bacteria, and most of what survives is now resistant to penicillin.
- C. Over time, Strep bacteria have gradually learned how to defend themselves against penicillin.
- D. The mold that penicillin is made from has become less common, because Strep bacteria have out competed it.