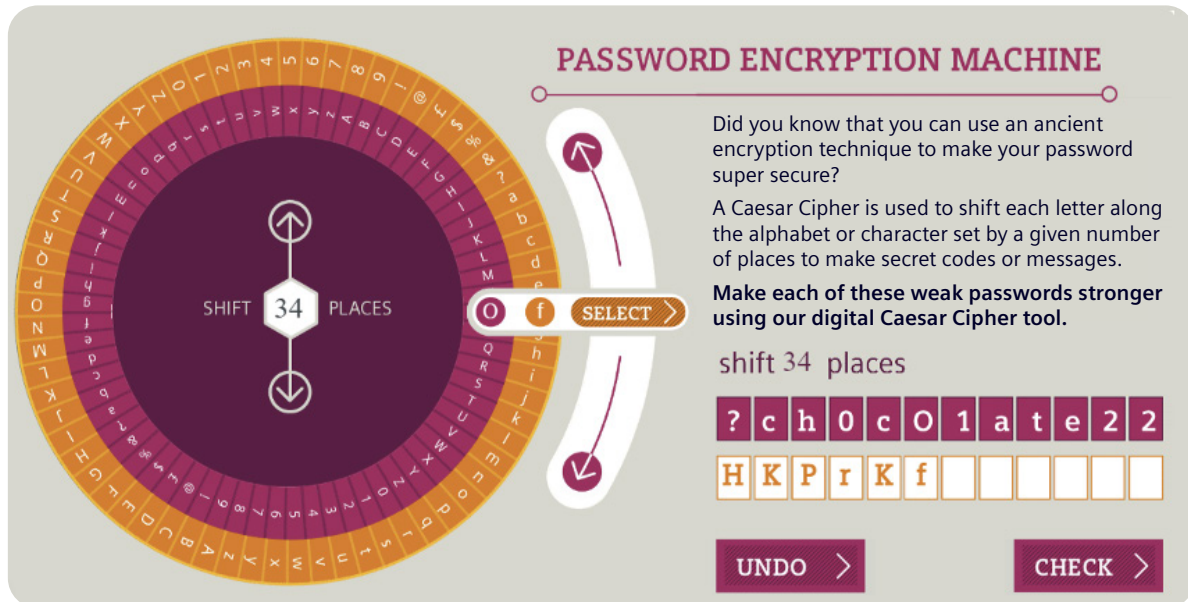


Cybersecurity



This is a simple example of a password encryption machine. It can turn weak passwords into ones that are much stronger.

If you look, you will see that there are two circles of characters. A character can be a letter, a number or a punctuation mark. The inner circle are the characters that you are going to convert. They are, if you like, the input. The outer circle consists of the same characters in the same order. These represent the output.

This type of code is called a cipher and this particular one is called the Caesar Cipher. You can choose what the shift number is when you use this cipher though in the on screen simulation you are told. The shift number shows how many places the outer ring is moved around the inner ring.

If you look at this example, you can see that the shift number is set at 34 places (the instructions tell you what the number is and it changes everytime the game is played). You then use the curved arrows so that the next character you are encrypting is selected. You can see that O has been set and the replacement character is f. The existing password is fairly strong but the replacement one being produced is even better.



1

Why would it not be a good idea to have a shift number of 0?

2

Why is it important that the person receiving the message knows what the shift number is?

3

If someone was trying to break an encoded message and had a copy of the Caesar Cipher but didn't know what the shift number was, could they still break into the message?

4

O and 0 are different characters and therefore need to be coded in different ways. Confusing them would corrupt the message.

5

1 could be confused with l and S with 5.



Why this technology is important:

Many people benefit in a wide range of ways from today's digitised and interconnected world but it comes at a price. Cyberattacks pose a genuine threat, potentially impacting every aspect of our lives, not just our data. Cybersecurity has become essential and is a vital component in enabling us to fully embrace the digital world.