



National Cyber
Security Centre

a part of GCHQ

CYBER SPRINTERS

Nano's Patterns

This puzzle is for children aged 7–8 or with special educational needs or disabilities. If your child would like a more advanced puzzle, try 'Glitch's Patterns'. This puzzle helps children to spot patterns and explains why passwords should not be easy to guess. For more advice, see our Cyber Aware guide: [Use a strong and separate password for your email and Turn on 2SV \(also known as 2FA\).](#)





Word patterns

Can you work out Nano's patterns? Nano thinks you will have fun trying.

What comes next?

1. North – South – East – ?
2. Up – Down – Left – ?
3. Puppy – Dog – Lamb – Sheep – Kitten – ?

Shape patterns

Now try these patterns. What shape comes next?

1.      ?
2.      ?
3.      ?

Letter patterns

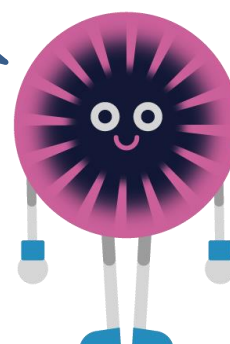
Which letter comes next?

1. A B A B A B A ?
2. 1 2 3 1 2 3 1 2 ?
3. q w e r t ?

For question 3, look
at the keyboard on
your device!

Would any of these patterns make a strong password?

Why?





Answers

Word patterns

1. North – South – East – **West**
2. Up – Down – Left – **Right**
3. Puppy – Dog – Lamb – Sheep – Kitten – **Cat**

A puppy is a young dog. A lamb is a young sheep. A kitten is a young cat.

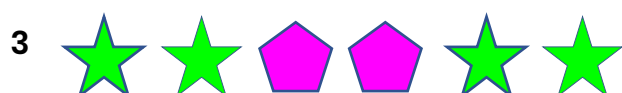
Shape patterns



The repeated pattern is  



The repeated pattern is   



The repeated pattern is    

Letter patterns

1. A B A B A B A **B**

The answer is B. The pattern is AB, repeated.

2. 1 2 3 1 2 3 1 2 **3**

The answer is 3. The pattern is 123, repeated.

3. qwerty**y**

The answer is y. These are letters on the top row of a keyboard.

These would not make strong passwords. This is because they follow a pattern. Hackers are good at spotting patterns. Make sure your passwords are random.

Hackers hope you will use the same password on all your accounts. So if they crack your password on one account, they can also get into the others. Use a strong and separate password for your email account.

2 Step Verification (2SV) can protect your account even if your password is hacked. 2SV is using 2 ways to prove who you are. Such as entering a password, and then a code that has been sent to your phone. Always use 2SV if you can.