## Random Number Generator

```
int getRandomNumber()
{
    return 4; // chosen by fair dice roll.
    // guaranteed to be random.
}
```

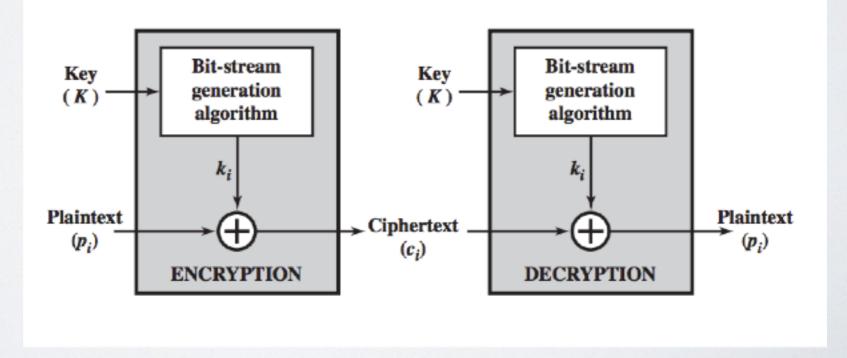
## **True Random Number Generator**

No, because we want to be able to encrypt and decrypt

## **Pseudo-Random Generator**

→ Stretch a a fixed-size <u>seed</u> to obtain an unbounded random

sequence



## Stream cipher

Can we use k as a seed?

$$E_k(m) = m \oplus RNG(k)$$

→ Be careful of key reused attack!