

# Design principles (reminder)

## 1. **Kerkoff Principle**

The security of a cryptosystem must not rely on keeping the algorithm secret

## 2. **Diffusion**

Mixing-up symbols

## 3. **Confusion**

Replacing a symbol with another

## 4. **Randomization**

Repeated encryptions of the same text are different

# The attacker's model

- **Exhaustive Search**

Try all possible  $n$  keys (in average it takes  $n/2$  tries)

- **Ciphertext only**

You know one or several random ciphertexts

- **Known plaintext**

You know one or several pairs of random plaintext and their corresponding ciphertexts

- **Chosen plaintext**

You know one or several pairs of chosen plaintext and their corresponding ciphertexts

- **Chosen ciphertext**

You know one or several pairs of plaintext and their corresponding chosen ciphertexts

➔ **A good crypto system resists all attacks**