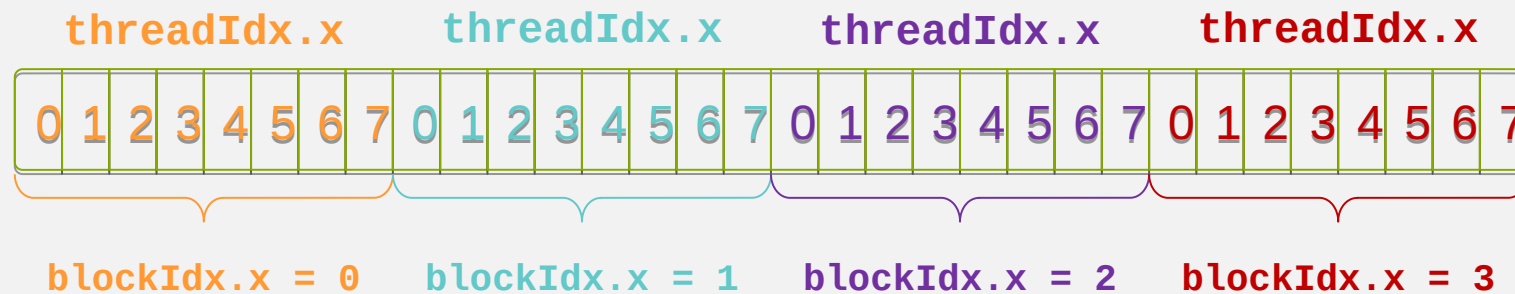# Indexing Arrays with Blocks and Threads

- No longer as simple as using **blockIdx.x** and **threadIdx.x**
  - Consider indexing an array with one element per thread (8 threads/block)

```
 threadIdx.x      threadIdx.x      threadIdx.x      threadIdx.x

0 1 2 3 4 5 6 7  0 1 2 3 4 5 6 7  0 1 2 3 4 5 6 7  0 1 2 3 4 5 6 7

 blockIdx.x = 0   blockIdx.x = 1   blockIdx.x = 2   blockIdx.x = 3
```

- With M threads/block a unique index for each thread is given by:

```
int index = threadIdx.x + blockIdx.x * M;
```

Identifica
a thread dentro
do bloco

identifica
o bloco

Tamanho
do bloco
(quantas threads)