

## Pass by Value vs Pass by Reference

```
import java.util.Arrays;
public class ArrayMethodPractice {

    public static void main(String[] args) {
        // What happens when you pass a primitive type as a parameter
        // Vocab: Pass by Value
        int x = 10;
        System.out.println("Pass by value:");
        System.out.println("before: x = " + x);
        change(x);
        System.out.println("after:  x = " + x);

        // what happens when you pass an array as a parameter
        // Vocab: Pass by Reference
        int[] y = {0, 1,2,3};
        System.out.println("\nPass by reference:");
        System.out.println("before: y = " + Arrays.toString(y));
        changeArray(y);
        System.out.println("after:  y = " + Arrays.toString(y));
    }

    public static void change(int b) {
        b = b * 2;
        System.out.println("inside: b = " + b);
    }

    public static void changeArray(int[] a) {
        for (int i = 0; i < a.length; i++) {
            a[i] = 2 * a[i];
        }
        System.out.println("inside: a[] = " + Arrays.toString(a));
    }
}
```

Output:

```
Pass by value:
before: x = 10
inside: b = 20
after:  x = 10
```

Pass by reference:

```
before: y = [0, 1, 2, 3]
inside: a[] = [0, 2, 4, 6]
after:  y = [0, 2, 4, 6]
```

