

JavaScript Arrays Cheat Sheet

1 . Accessing Array Elements

- Syntax: `array[index]`
- Example:

```
var student = ["Zoha", "Rubina", "Huma", "Bisma"];  
console.log(student[2]); // Output: Huma
```

- Indexing starts from 0 .
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2 . Modifying Array Elements

- Modify using index:

```
student[2] = "Momina"; // Changes 3rd element
```

- Modify last elements using length:

```
student[student.length - 2] = "Ayesha"; // Changes 2nd last element
```

- Index or length can only modify, cannot add/remove elements.
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3 . Adding and Removing Elements at the End

- **Push:** Adds element(s) at the end.

```
var returnValue = student.push("Hajra", "Kashmala");  
console.log(student); // New Array with added elements  
console.log(returnValue); // Returns new length
```

- **Pop:** Removes the last element.

```
var returnValue = student.pop();  
console.log(student); // Array after removal  
console.log(returnValue); // Returns removed element
```

4 . Adding and Removing Elements at the Start

- **Unshift:** Adds element(s) at the start.

```
var returnValue = student.unshift("Hajra", "Kashmala");
console.log(student); // Array after addition
console.log(returnValue); // Returns new length
```

- **Shift:** Removes first element.

```
var returnValue = student.shift();
console.log(student); // Array after removal
console.log(returnValue); // Returns removed element
```

5 . Inserting and Deleting Anywhere (Splice)

- Syntax: `array.splice(startIndex, deleteCount, item1, item2, ...)`
- **Insert & Replace:**

```
var returnValue = student.splice(2, 1, "Alisha");
console.log(student); // Array after splice
console.log(returnValue); // Returns removed elements
```

- **Delete only:**

```
student.splice(2, 1);
```

- **Insert only:**

```
student.splice(2, 0, "Alisha", "Hajra");
```

- `startIndex` is compulsory, others optional.

6 . Copying Elements (Slice)

- Syntax: `array.slice(startIndex, endIndex)`
- Copies elements from `startIndex` to `endIndex-1`.
- Returns a new array, original array remains unchanged.

```
const copyStudent = student.slice(1, 3);
console.log(copyStudent); // ['Rubina', 'Huma']
console.log(student); // Original array unchanged
```

- `startIndex` compulsory, `endIndex` optional.

Quick Rules

- **Index / Length:** Modify only.
- **Push / Pop:** Add/Remove at end.
- **Unshift / Shift:** Add/Remove at start.
- **Splice:** Insert/Delete anywhere.
- **Slice:** Copy elements only.