04.01 Lab Solutions

1. Declare an array called gems and give it three items: 'diamond', 'sapphire' and 'ruby'.

```javascript
const gems = ['diamond', 'sapphire', 'ruby'];
```

2. Log the entire array and also the first item.

```javascript
console.log(gems);
// ['diamond', 'sapphire', 'ruby']
console.log(gems[0]); // diamond
```

3. Add 'emerald' to the end of the array, using the index of the new item.

```javascript
gems[3] = 'emerald';
console.log(gems);
// ['diamond', 'sapphire', 'ruby', 'emerald']
```

4. Use an array method to add 'amethyst' to the end of the array.

```javascript
gems.push('amethyst');
console.log(gems);
// ['diamond', 'sapphire', 'ruby', 'emerald', 'amethyst']
```

5. Use an array method to sort the array. gems.sort();

```javascript
console.log(gems);
// ['amethyst', 'diamond', 'emerald', 'ruby', 'sapphire']
```

6. Log the length (number of items of the array). Should be 5.

```javascript
console.log(gems.length); // 5
```

7. Use length-1 to get the last item in the array. Save it to a variable and log it.

```javascript
let lastGem = gems[gems.length-1];
console.log(lastGem); // sapphire
```

8. Use an array method to remove the last item from the array. Save it to a new variable. HINT: the popped item should be 'sapphire'.

```
let poppedGem = gems.pop();
console.log(poppedGem); // sapphire
console.log(gems);
// ['amethyst', 'diamond', 'emerald', 'ruby']
console.log(gems.length); // 4
```

9. Given these 12 months: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec. Make a 2D array called months, containing the 12 items, divided into 4 sub-arrays or 3 items each, so: Jan, Feb, Mar would be the first array. Log the months that start with 'J' and 'M'.

```
const months = [ ['Jan', 'Feb', 'Mar'],
                 ['Apr', 'May', 'Jun'],
                 ['Jul', 'Aug', 'Sep'],
                 ['Oct', 'Nov', 'Dec']
             ];
console.log(months[0][0]); // Jan
console.log(months[0][2]); // Mar
console.log(months[1][1]); // May
console.log(months[1][2]); // Jun
console.log(months[2][0]); // Jun
```

10. Make four arrays called winter, spring, summer and autumn, each of which contains three items, assigned as one item of the months array. Log random month from each array.

```
const winter = months[0];
let randWinterMo = Math.floor(Math.random() * winter.length);
console.log(randWinterMo);

const spring = months[1];
let randSpringMo = Math.floor(Math.random() * spring.length);
console.log(randSpringMo);

const summer = months[2];
let randSummerMo = Math.floor(Math.random() * summer.length);
console.log(randSummerMo);

const autumn = months[3];
let randAutumnMo = Math.floor(Math.random() * autumn.length);
console.log(randAutumnMo);
```

NEXT: Lesson 04.02