Lesson 05.02

Looping Arrays of Objects

making a video player interface

looping an array of objects

1. Open `05.02-Looping-Arrays-of-Objects.html` and preview it in the browser.

The interface loads a grid of 18 animal images at left and a video player with description underneath, at right. The first animal, 'American bison' appears on page load.

2. Click an animal picture to swap the video and description.

This is the application that we will be building in this lesson. Let's have a look at where all this animal data is located.

3. Open `animals.js` and have a look. The file contains one variable, an array called `animalsArr`.

Each array item is an object of six properties: - `name` ('giraffe', 'ostrich', etc.) - `class` ('mammal', 'bird', 'reptile') - `herbivore` (boolean: true or false) - `continent` ('Asia', 'Africa', etc.) - `youTube` (YouTube video embed code) - `desc` (description of the animal)

4. Switch to the lesson file's JS file, `05.02-Looping-Arrays-of-Objects-START.js`.

To make the application, we will loop through the animals array:

- Each time through the loop, we will concatenate an `img` tag.
- The `img` tag will have an `onclick` event that calls a function called `swapImage(i)`.
- The `i` argument is the index of the current item.
- The argument `i` tells the function which video and description it needs to load.
- The YouTube video is embedded with an `iframe` tag, which is the same for each video, except for an 11-character code specific to that particular video.

5. First, get all the elements that we need for the output:

- `animal-pics` div for the grid of animal pics
- `video-player` div for holding the video
- `h2` for displaying the animal name
- `p` for displaying the description.

```
// get animals pic div to hold images
let animalPicsDiv = document.getElementById('animal-pics');

// get video player div
let videoPlayerDiv = document.getElementById('video-player');

// get h2 for animal name
let h2 = document.querySelector('h2');
h2.textContent = animalsArr[0].name;
```

```
    // get p tag for description
    let p = document.querySelector('p');
    p.textContent = animalsArr[0].desc;
```

6. Output the name and description of the first animal immediately on page load.

- the first array item is `animalsArr[0]`
- each array item is an object, so the name of the first animal is `animalsArr[0].name`

```
    h2.textContent = animalsArr[0].name;
    p.textContent = animalsArr[0].desc;
```

7. Display the video for the first animal.

- the `iframe` for each video is identical, except for an 11-character code
- the code is stored as the object's `youTube` property
- we access the property with `animalsArr[0].youTube` and concatenate that into the `iframe`:

```
    // display video for first animal
    videoPlayerDiv.innerHTML = '<iframe width="560" height="315"
src="https://www.youtube.com/embed/' + animalsArr[0].youTube + '"
title="YouTube video player" frameborder="0" allow="accelerometer;
autoplay clipboard-write; encrypted-media; gyroscope; picture-in-picture"
allowfullscreen></iframe>';
```

8. Make sure the html page is using START.js and reload the page in the browser. We should have the video and description at right, and an empty box at left.

Now, to output the animal images to the `animal-pics` div, the empty box at left. Each image needs to be clickable to call a function to swap the video and description.

9. Set up a loop that iterates `animalsArr`. First thing to do in the loop is to save the current object to a variable:

```
    for (let i = 0; i < animalsArr.length; i++) {
        let animal = animalsArr[i];
    }
```

10. Open the `images` folder. Notice that the two-word file names are hyphenated, whereas the animal names in the data have spaces--not hyphens:

- FILE: american-bison.jpg, andean-bear.jpg
- DATA: 'American bison', 'Andean bear'

We will use object names ('American bison') to concatenate image file paths, so we need to replace the spaces with hyphens.

11. Using backticks, concatenate an entire `img` tag, using `${name}` to add the file name, dynamically:

```
for (let i = 0; i < animalsArr.length; i++) {
    let animal = animalsArr[i];
    let name = animal.name.replace(' ', '-');
    let tag = `<img src="images/${name}.jpg">`;
}
```

12. We need each tag to be clickable to call the `swapAnimal()` function, so add that to the tag as an `onclick` event handler:

```
for (let i = 0; i < animalsArr.length; i++) {
    let animal = animalsArr[i];
    let name = animal.name.replace(' ', '-');
    let tag = `<img src="images/${name}.jpg" onclick="swapAnimal()">`;
}
```

13. The function needs to know which animal was clicked, so pass in the index, `i`, as the argument.

```
for (let i = 0; i < animalsArr.length; i++) {
    let animal = animalsArr[i];
    let name = animal.name.replace(' ', '-');
    let tag = `<img src="images/${name}.jpg"
onclick="swapAnimal(${i})">`;
    animalPicsDiv.innerHTML += tag;
}
```

14. Output the `img` tag. Since this is an html tag, set the `innerHTML` rather than the `textContent`:

```
for (let i = 0; i < animalsArr.length; i++) {
    let animal = animalsArr[i];
    let name = animal.name.replace(' ', '-');
    let tag = `<img src="images/${name}.jpg"
onclick="swapAnimal(${i})">`;
    animalPicsDiv.innerHTML += tag;
}
```

15. Save and reload the page; the images should all be there although clicking them doesn't work since we have yet to write the `swapAnimal()` function. That's next.

16. Define the function. It has a parameter `i` which comes in when the function is called as the index of the clicked animal.

```
function function swapAnimal(i) {
}
```

16. Using the `i` argument, look up the animal in the array and set the heading and description to that animal's `name` and `desc` properties, respectively:

```
function function swapAnimal(i) {
    h2.textContent = animalsArr[i].name;
    p.textContent = animalsArr[i].desc;
}
```

17. Now for the big `iframe` tag for the video. Just slot in the chosen animal's 11-digit YouTube video code, which we access as `animalsArr[i].youTube`:

```
function swapAnimal(i) {
    h2.textContent = animalsArr[i].name;
    p.textContent = animalsArr[i].desc;

    videoPlayerDiv.innerHTML = '<iframe width="560" height="315"
src="https://www.youtube.com/embed/' +
    animalsArr[i].youTube + '" title="YouTube video player"
frameborder="0" allow="accelerometer; autoplay; clipboard-write;
encrypted-media; gyroscope; picture-in-picture" allowfullscreen>
</iframe>';
    }
```

18. Save and reload the page. Click an animal to load its video and description.

END: Lesson 05.02 NEXT: Lesson 05.03