

## Module 3: Web Pages with JavaScript

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In this module, we create interactive web pages that use JavaScript. The pages include games, forms, popup windows, and the use of random numbers. Design elements include ease of use and responsive design.

### 1. Tic Tac Toe

- This web page has a grid of tiles in which to display the letters X and O.
- The script keeps track of game play and indicates which player has the next move.
- The script determines when a user won the game and displays an appropriate message.
- A "new game" buttons clears the board and starts a new game.

### 2. Chinese Zodiac

- This page displays the animals of the Chinese zodiac in a table.
- The table also includes a list of the birth years that correspond to each animal.
- The page includes a form where users can look up a birth year.

### 3. Multiplication table with user interface

- The page displays a 12x12 multiplication table.
- A form allows users to change the table dimensions.

### 4. Random Color Schemes

- This page displays five color wells.
- The page has a form where the user can enter five colors.
- The page has captions indicating the color names or hex codes.
- The page will generate random colors to fill the color wells.

### 5. Calculator

- This page has a basic form where users can enter two operands and an operator.
- Use the select (menu) widget to prevent user errors and make the form easier to use.

### 6. BMI Calculator

- The page has a form where the user can enter height and weight.
- The script calculates the BMI and displays whether the weight is in the normal range.

### 7. MPG Calculator

- Students work independently to reproduce a calculator based on a mockup and make it work.

### 8. Fortune Cookies

- This page displays a random fortune from an array of sayings.
- The page has a "new fortune" button that refreshes the page with a new fortune.

### 9. Resistor Color Code

- Students will determine a simple interface for entering resistor color bands.
- The script will calculate the resistance based on the colors.

## 10. Array sort

- This page will have a text area where users can enter a list of songs.
- The script will sort the songs or disarrange them randomly.

## 11. Popup window with responsive design

- Display a series of about six images in a grid.
- Each image will have associated information encoded in a data structure.
- When the user clicks on the image, the associated information will appear in a popup.

## 12. Game of Life

- Programmatically construct a grid of 20 x 20 DIVs
- Allow users to toggle the state and color of each DIV in the grid
- Use a timer to draw succeeding generations of life in the grid