

Written Plan(Problems and Solution)

The Drag and Drop Puzzle setup has 4 functionalities. The puzzle board with pieces attached, dropzone where pieces are to be dropped, reset button and a thumbnail images selection to switch into any four puzzle images to solve.

Problems found:

- Thumbnail images can be dragged to the dropzone when a piece from the board is already placed.
- The initial puzzle piece will remain even when changing the thumbnail icon. If the piece is already dragged into the dropzone then the piece would stay in the same position.
- Pieces in the one dropzone can be overlapped up to 4 puzzle pieces.
- Reset button is not functional.

Fixing the bug:

1. You can drag and drop more than one puzzle piece into a drop zone - this shouldn't happen. There should only be one piece in one drop zone at a time.

1.1 Bugfix: In Index.html, Added a syntax to disable drag function in thumbnail(#buttonHolder img).

```
ondragstart="return false"
```

1.2 Bugfix: In main.js, Added an if statement(true value) in handleDrop(); to check if the puzzle image is already occupied in dropzone using query selector. Else statement(false value) to place a puzzle piece when the dropzone is empty.

```
if (this.querySelector('.puzzle-image')) {  
  console.log('Zone is already occupied');  
}else {  
  this.appendChild(draggedPiece);  
  console.log('Piece '${draggedPiece.alt}' placed in '${this.className}');  
}
```

2. The second bug is the problem with pieces appearing in the drop zones on reset / choosing a new puzzle. Those should be removed / reparented back to the drag zone as well, so that the player has a fresh board to drop onto.

2.1 Bugfix: In resetPuzzle function, Used for each method to check if the zone contains an element. Inside the if statement is the syntax to remove the piece in the

dropzone(removeChild). Additionally, added a puzzlePiecesHolder to keep the 4 puzzle pieces intact in each thumbnail click. resetPuzzle(); is then placed inside another function called changeBGImage();

```
function resetPuzzle() {  
  dropZones.forEach(zone => {  
    if (zone.firstChild) {  
      let piece;  
      piece = zone.removeChild(zone.firstChild);  
      puzzlePiecesHolder.forEach(holder => {holder.appendChild(piece);});});}
```

2.2 Bugfix: Inside changeBGImage(); Set a target id to backgroundID and added a syntax to change the images in the puzzle board and puzzle pieces each time a thumbnail is triggered.

Breaking down the code for switching puzzle pieces:

- Started with For each method, set piece value to src and add a get attribute to retrieve the src which returns images/topLeft0.jpg(As an example, Applies for other puzzle pieces like topRight, bottomLeft and bottomRight).

- Using split method, images/topLeft0.jpg for instance would remove digits 0-4 and split its format.

- Using join method and clicking bg1 for instance, backgroundID would then assign an array of 1 connecting the value back to puzzle pieces src. For instance, 'images/topLeft' + (1) + jpg format would result in:

```
../images/topleft1.jpg  
../images/topright1.jpg.  
../images/bottomLeft1.jpg  
../images/bottomRight1.jpg
```

```
function changeBGImage(e){  
  backgroundID = e.target.id;  
  console.log(`changeBGImage called (${this.className})`);  
  console.log(this.id);  
  puzzleBoard.style.backgroundImage = `url(images/backGround${e.target.id}.jpg)`;  
  puzzlePieces.forEach(piece => piece.setAttribute('src',  
    piece.getAttribute('src').split(/[0-4]+/).join(e.target.id)));  
  resetPuzzle();  
}
```

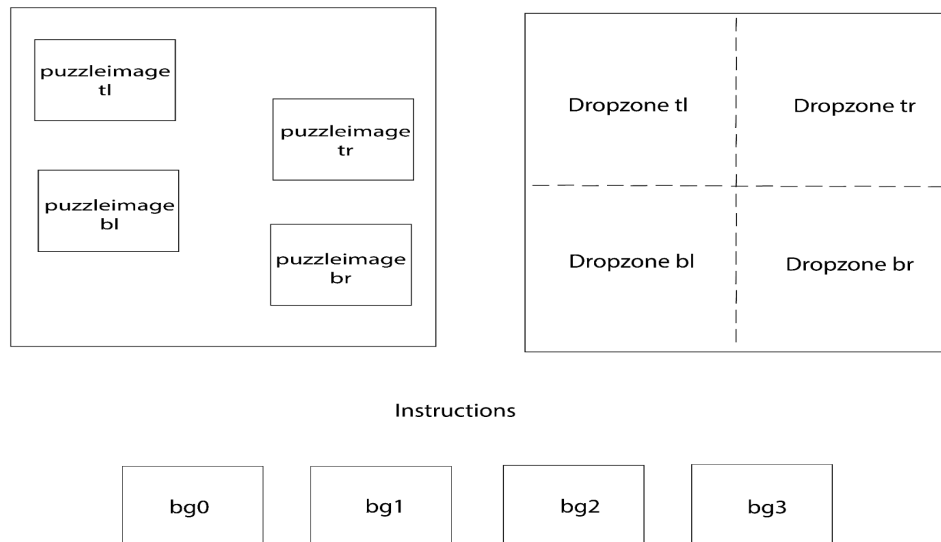
3. Reset Button not working

3.1 Bugfix: Added a syntax history.go to reload the page.

```
resetButton.addEventListener("click", function() {history.go(0);});
```

UI Design:

Title Subtitle



References:

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