

### Challenge: Create with no limits!

For the final challenge of Learn to Code 2, you can create whatever you want! A blank canvas may feel intimidating, so feel free to copy and paste code from other pages if you want to use it here!

Here are a few ideas you can try:

- Use arrays to construct a tall building, and put Byte on top of it.
- Construct a world where portals are everywhere. Then place an array of characters into the world and have them teleport through the portals.
- Create a play and have your characters communicate through their actions.
- Build a puzzle and have someone try to solve it.

Have other ideas? Of course you do! Coding is highly creative, so let your imagination run wild, and code to your heart's content!

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```
// pyramid!
```

```
let allCoordinates = world.allPossibleCoordinates
```

```
func adjustHeight(height: Int, spot: Coordinate) {
  if height <= -1 {
    world.removeAllBlocks(at: spot)
    world.place(Water(), at: spot)
  } else if height > 0 {
    for i in 1 ... height {
      world.place(Block(), at: spot)
    }

    if height == 1 {
      world.place(Gem(), at: spot)
    }

    if height == 2 {
      world.place(Expert(), at: spot)
    }

    if height == 3 {
      world.place(Character(name: .blu), at: spot)
    }

    if height == 4 {
      world.place(Character(name: .byte), at: spot)
    }

    if height == 5 {
      world.place(Character(name: .hopper), at: spot)
    }

  } else {
    world.place(Switch(), at: spot)
  }
}
```

```

}

// create water ring
func createRing(ringHeight: Int, length: Int, start: Int, end: Int) {
    var localCounter = end

    for i in start ... (start + length) {
        var localCoord = Coordinate(column: start, row: i)
        adjustHeight(height: ringHeight, spot: localCoord)
    }

    for i in start + 1 ... (start + length) {
        var localCoord = Coordinate(column: i, row: end)
        adjustHeight(height: ringHeight, spot: localCoord)
    }

    for i in start ... (start + length - 1) {
        localCounter -= 1
        var localCoord = Coordinate(column: end, row: localCounter)
        adjustHeight(height: ringHeight, spot: localCoord)
    }

    localCounter = end
    if length - 2 >= 0 {
        for i in start ... (start + length - 2) {
            localCounter -= 1
            var localCoord = Coordinate(column: localCounter, row: start)
            adjustHeight(height: ringHeight, spot: localCoord)
        }
    } else {
        var localCoord = Coordinate(column: localCounter, row: start)
        adjustHeight(height: ringHeight, spot: localCoord)
    }
}

var Begin = 0
var Finish = 12
var ringTall = -1
var Length = 12

for i in 1 ... 6 {
    createRing(ringHeight: ringTall, length: Length, start: Begin, end: Finish)
    Begin += 1
    Finish -= 1
    ringTall += 1
    Length -= 2
}

var localCoord = Coordinate(column: 6, row: 6)
adjustHeight(height: 5, spot: localCoord)

```

