


Aaron Hoyt : Graphics Design
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Hybridization
"Transmutator"

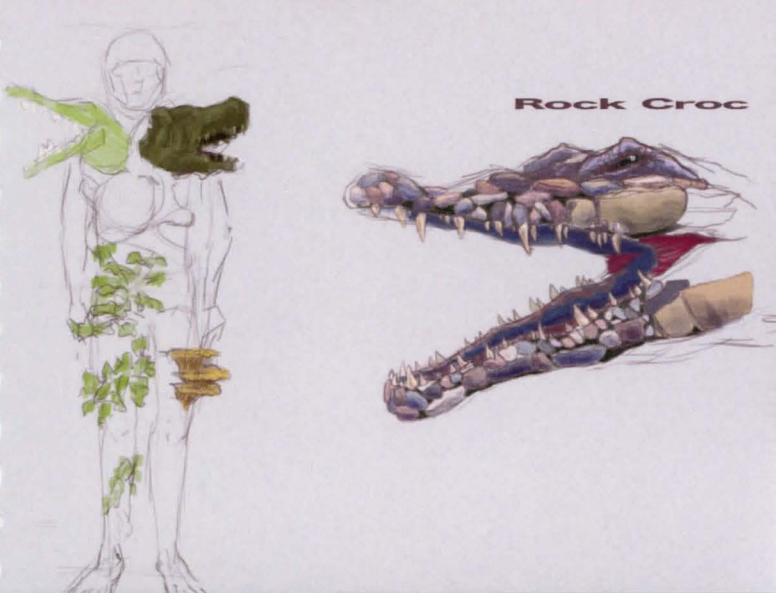
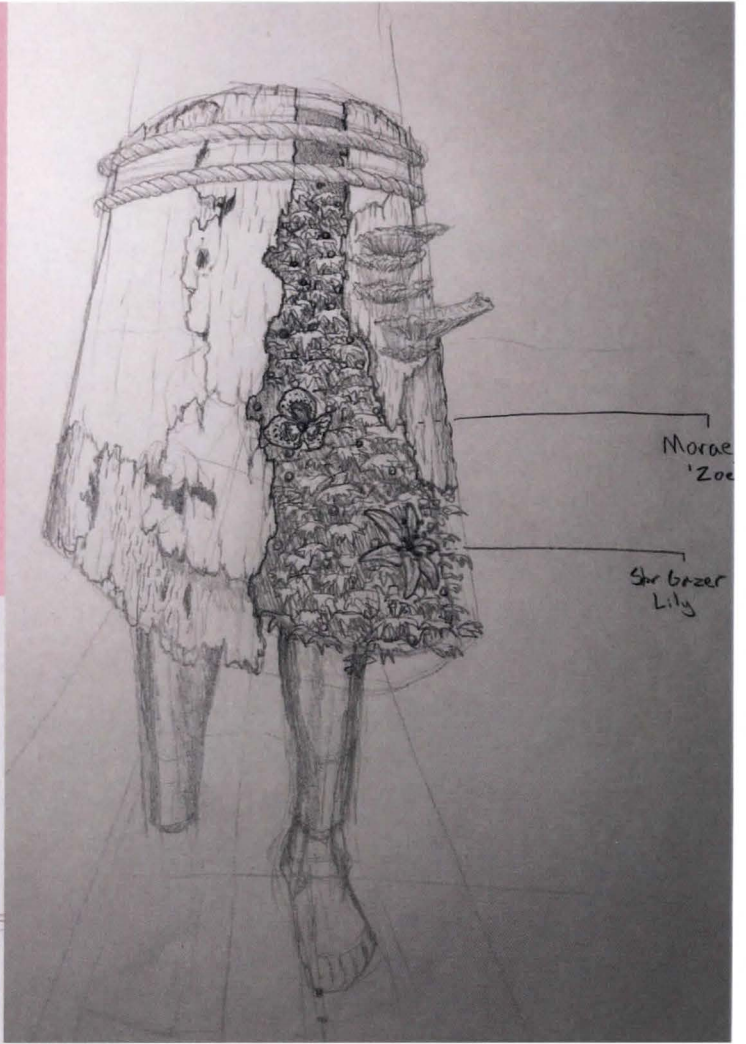


Our Show Script: Hybridization is the process of combining two different organisms to create a new and unique one. It's like the ultimate genetic mixer party, where the genes of two species come together to create a hybrid that has characteristics of both parents.

Now, you might be thinking, "Why would anyone want to do that?" Well, the answer is simple: hybridization can create some truly remarkable and unique plants and creatures.

So next time you're feeling bored with the same old animals and plants, remember that there's a whole world of hybridization out there waiting to be explored. Who knows what crazy combinations you might discover?

Our Concept: The long history of Hybridization started as far back as our settlement as the human species. We selected crops with specific genetics to grow stronger and more nourishing. In the present, Hybridization impacts many facets of our lives. Almost every crop produced now is altered genetically, as well as some animals we domesticate. We were inspired by our prompt's connection to nature and our history, so we decided to theme our piece around Multiple Ancient Cultures that paved the path for modern day agriculture practices, which often included noble headgear in the shape of various animals and hybrids. Our final piece is the "Transmutator", a warrior from the wild with mythical abilities.



Early ideation sketches were crucial to flesh out sporadic ideas, and create a vision of the project moving forward.



Carving of the sculptural pieces took many hours to complete, but were more than satisfactory in the final product.





Scraping the back of the tree bark to facilitate adhesion of the structural fiberglass



The kilt was a very interesting piece to design. The bark was attached with wire stitches, which let them shift and move around. LED lights were taped on to the base, and faux ivy was glued very carefully into the gaps of the bark.



The armor was created using EVA foam, which we heated to create bends in the material, and stitched together to create the plated design. Rivets were created by sawing pencils into pieces and attaching with super glue.



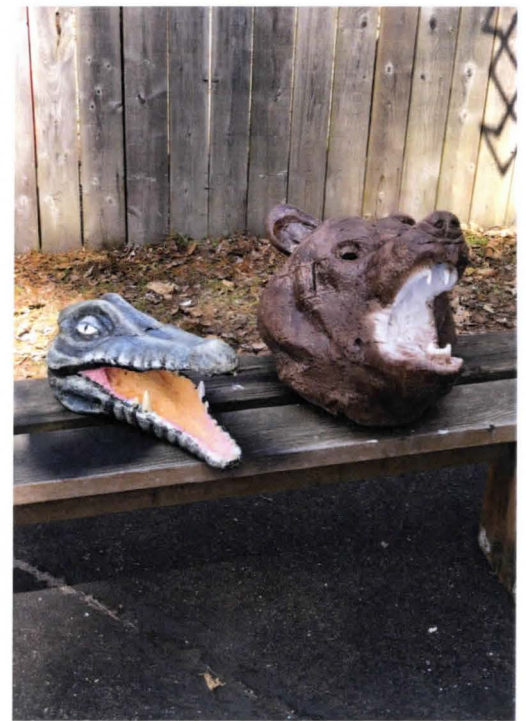
On the right is the custom arduino code, using the FastLED library, using math functions to create a random sparkling effect with a custom color palette. Additions were made to accommodate the glowing eyes of our animal heads.

On the left is our first test of the lighting code.

```

3 #define DATA_PIN 9
4 #define LED_TYPE WS2811
5 #define COLOR_ORDER RGB
6 #define NUM_LEDS 50
7 CRGB leds[NUM_LEDS];
8
9 #define BRIGHTNESS 100
10 #define FRAMES_PER_SECOND 70
11 //Lower number is longer fade out
12 #define fadeTime 3
13
14 CRGBPalette16 currentPalette;
15 TBlendType currentBlend;
16 void setup() {
17   delay(1000); // 3 second delay for recovery
18
19   // tell FastLED about the LED strip configuration
20   FastLED.addLeds<LED_TYPE, DATA_PIN, COLOR_ORDER>(leds, NUM_LEDS).setCorrection(TypicalLEDStrip);
21
22
23
24   // set master brightness control
25   FastLED.setBrightness(BRIGHTNESS);
26   SetupPalette();
27
28   currentPalette = RainbowColors_p;
29   currentBlend = LINEARBLEND;
30 }
31
32 void loop() {
33   SetupPalette();
34   confetti(0, 50);
35
36   FastLED.show();
37   FastLED.delay(1000/FRAMES_PER_SECOND);
38
39 }
40
41 void confetti(int start, uint16_t amount)
42 {
43   // random colored speckles that blink in and fade smoothly
44   fadeToBlackBy(leds + start, amount, fadeTime);
45   //fadeToBlackBy(leds, NUM_LEDS, fadeTime);
46   int pos = (random16(amount)+ start);
47   leds[pos] = currentPalette[(int) (random(16))];
48 }
49 //leds[pos] += CHSV( @hue + random8(64), 200, 255);
50
51 void SetupPalette()
52 {
53   // 'black out' all 16 palette entries...
54   fill_solid( currentPalette, 16, CRGB::Black);
55   // and set every fourth one to white.
56   currentPalette[0] = CRGB::White;
57   currentPalette[1] = CRGB::Goldenrod;
58   currentPalette[2] = CRGB::Goldenrod;
59   currentPalette[3] = CRGB::Goldenrod;
60   currentPalette[4] = CRGB::Gold;
61   currentPalette[5] = CRGB::Gold;
62   currentPalette[6] = CRGB::Gold;
63   currentPalette[7] = CRGB::Gold;
64   currentPalette[8] = CRGB::Orange;
65   currentPalette[9] = CRGB::Orange;
66   currentPalette[10] = CRGB::Orange;
67   currentPalette[11] = CRGB::Orange;
68   currentPalette[12] = CRGB::Yellow;
69   currentPalette[13] = CRGB::Yellow;
70   currentPalette[14] = CRGB::Yellow;
71   currentPalette[15] = CRGB::Yellow;
72   currentPalette[16] = CRGB::DarkRed;
73 }
74

```



Our three-headed headpiece was the most fun of this entire project. The combination of sculpture and fashion is quite fascinating and challenging to contend with. Each sculpture was carefully hand painted and placed together using structural beams, adorned in faux plants to add life and a dynamic element to the piece.



Materials: We used multiple different techniques and materials to build and finish our piece. Our sculptural elements were Primarily carved from blue insulation foam and spray foam, with eyes cut from table tennis balls, which allow the eyes to glow. They were painted with special drybrush techniques using acrylic paint. Many variations of faux plants were used to emphasize the natural elements of this piece. We also used real fallen tree bark, backed with fiberglass to decorate the kilt. Addressable lights and arduino was used to code the light pattern throughout the piece. Finally, our plated armor was stitched together EVA foam coated in metallic paint, and drybrushed to create weathering.

