



YOUIMAGINE

Darth 2: a 3D Printed Animated Darth Vader Helmet.

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Located at: <http://www.youmagine.com/designs/darth-2-a-3d-printed-animated-darth-vader-helmet>

Short description:

An animated Darth Vader Helmet with a twist.

Description:

<https://youtu.be/8P2rBysBHL8> I designed and 3D printed "Darth 2: A 3D Printed Animated Darth Vader Helmet", with a twist, for our grandkids who are Star Wars fans! This animated twisting Darth Vader Helmet is constructed from eighteen helmet slices similar to my "A 3D Printed Animated Valentine Heart for My Valentine!" model. This model animates just the head section from my first Darth design. With extra room in each slice head, I was able to simplify this model by adding 3D printed pins as opposed to the metal pins used in the heart design thus saving the metal pin machining and insertion steps during construction. As in the heart design, the motor and gear system in this model is designed to rotate the top slice 180 degrees while holding the bottom slice stationary, then hold the top slice stationary while rotating the bottom slice 180 degrees. And again as in the heart design, to rotate the inner slices (between the top and bottom) the bottom and inner slices contain 3D printed pins and the inner and top slices contain slots. Each pin fits into the slot in the slice above it, and each slot is designed to allow a 10 degree rotation before contacting the pin below. Thus when the top slice turns 10 degrees, its slot comes in contact with the pin in the slice below and that slice begins to rotate, and when the slice below rotates 10 degrees, the pin in the slice below it begins to rotate. This process continues down the slices until the top rotates 180 degrees at which point the bottom begins to rotate to put the helmet back together. The only contact between each slice must be the pins in the slots, thus careful 3D printing (no warping) and assembly (bearings completely flush with the top and bottom of each slice) are required to successfully 3D print and assemble this model. As usual I probably forgot a file or two or who knows what else, so if you have any questions, please do not hesitate to comment as I do make plenty of mistakes. Designed using Autodesk Fusion 360, sliced using Ultimaker Cura 4.8.0, and 3D printed in PLA on Ultimaker S5s.

If you can, please use the online documentation found at <http://www.youmagine.com/designs/darth-2-a-3d-printed-animated-darth-vader-helmet> because those may have been updated. Also, there you can interact and provide praise and/or feedback.