



Minds in Motion

DIY VR Headset

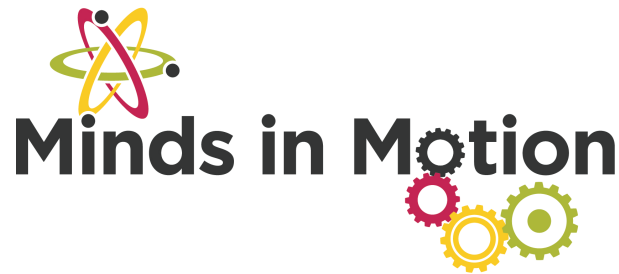


Activity Rundown:

It's time to make your reality a little more virtual. Have you been looking for a chance to immerse yourself in different landscapes, explore wonders of the world or go to countries you have never seen before? By building your own Virtual Reality headset, you will be able to do just that! Follow the instructions closely and an adventure around the world is closer than you think.

You will need:

- Cardboard
- Paper
- Pencil
- Glue
- Art knife/ scissors
- Velcro
- 2 convex lenses or two circular plastic cut outs from a clear 2 litre bottle (two convex lenses may be hard to find but perhaps check to see if you have old toy binoculars laying around)
- Google expedition app
- Computer
- Printer



Let's do it!

1. Follow this link:
<https://archive.org/details/google-cardboard-template/page/n1/mode/2up>
2. This link will lead you to the print outs required to create your google cardboard VR Headset
3. Print out the drawings and lay them on top of your cardboard.
4. This step by step instructables will show you exactly how to assemble and cut your VR headset at home!
<https://www.instructables.com/id/How-to-make-Google-Cardboard/>
5. Glue the outline of the headset on to the cardboard. Once this is completed you may begin cutting out your VR Headset pieces.
6. Follow along with this video for additional information and help:
<https://www.youtube.com/watch?v=EHkOnsvpHiA>

Background:

Virtual Reality can bring you anywhere, helping you learn about different places and ideas by experiencing them as if you were actually there.

- Virtual Reality (VR) is the use of computer technology to create a simulated environment.
- Virtual Reality's most immediately recognizable component is the head-mounted display (HMD). Human beings are visual creatures, and display technology is often the single biggest difference between immersive Virtual Reality systems and traditional user interfaces.
- Major players in Virtual Reality include HTC Vive, Oculus Rift and PlayStation VR (PSVR)

What is Virtual Reality?

Virtual Reality (VR) is the use of computer technology to create a simulated environment. Unlike traditional user interfaces, VR places the user inside an experience. Instead of viewing a screen in front of them, users are immersed and able to interact with 3D worlds. By simulating as many senses as possible, such as vision, hearing, touch, even smell, the computer is transformed into a gatekeeper to this artificial world. The only limits to near-real VR experiences are the availability of content and cheap computing power.

Virtual Reality technology

Virtual Reality's most immediately recognizable component is the head-mounted display (HMD). Human beings are visual creatures, and display technology is often the single biggest difference between immersive Virtual Reality systems and traditional user interfaces. For



instance, CAVE automatic virtual environments actively display virtual content onto room-sized screens. While they are fun for people in universities and big labs, consumer and industrial wearables are the wild west.

With a multiplicity of emerging hardware and software options, the future of wearables is unfolding but yet unknown. Concepts such as the HTC Vive Pro Eye, Oculus Quest and Playstation VR are leading the way, but there are also players like Google, Apple, Samsung, Lenovo and others who may surprise the industry with new levels of immersion and usability. Whomever comes out ahead, the simplicity of buying a helmet-sized device that can work in a living-room, office, or factory floor has made HMDs centre stage when it comes to Virtual Reality technologies.

NOTES: You may notice in the instructions that they ask for a neodymium magnet. This is not required for the simple at home DIY build we are looking for. Also, in substitution for the lenses you can use a clear 2L pop bottle and simply cut out convex lenses. Yes, it may not be quite as effective as real lenses, but much easier to find around the house!

Reach out!

We would love to hear from you about all the amazing STEM projects you are doing at home! Show us your finished products on any of the following social media platforms by tagging us or by using the following hashtags. We hope these projects have brought some excitement to your day during these difficult times.

Let us know how we did! Please click below to fill out a short survey on how well we did and what you would like to see more of in the future. Thank you!

<https://bit.ly/MindsSurvey2020>

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