**How Invisibility Cloaks Work**

Article of the Week #6

Due Monday 10/13

Name:

Period:

**** by [William Harris](http://science.howstuffworks.com/about-author.htm#william harris) and [Robert Lamb](http://science.howstuffworks.com/robert-lamb-author.htm) Date Viewed: Oct. 3rd, 2014

On this side, write a summary for each paragraph.

While you read, circle unfamiliar words and look them up in a dictionary. Then, highlight the most important details.

On this side, write a question or comment for each paragraph.

Admit it. You'd love to own an invisibility cloak. Utter an embarrassing faux pas at a party? Just throw on your magical garment and vanish from the snooty gaze of your fellow partygoers. Want to hear what your boss is really saying about you? Stroll right into his or her office and get the goods.

Such fantastic fashion accessories have become ridiculously standard in the world of [science fiction](http://entertainment.howstuffworks.com/sci-fi.htm) and fantasy. Everyone, from boy wizards to intergalactic safari hunters, has at least one invisible blouse in their wardrobe, but what about us poor saps in the real world?

Well, Muggles, science has some good news for you: Invisibility cloaks are a reality. The technology is far from perfect, but if you'll step into our high-tech boutique of vanishing apparel, we'll guide you through your invisibility cloak options.

First up, we'll look at some wonderful [carbon nanotube](http://www.howstuffworks.com/carbon-nanotube.htm) fashions -- fresh from the UTD NanoTech Institute fall 2011 collection. This new technology is inspired by the same natural phenomena responsible for [desert mirages](http://science.howstuffworks.com/mirage.htm). Heated via electrical stimulation, the sharp temperature gradient between the cloak and the surrounding area causes a steep temperature gradient that bends light away from the wearer. The catch: Wearers must love water and be able to fit inside a petri dish.

Or perhaps you'd prefer something made from metamaterials. These tiny structures are smaller than the wavelength of light. If properly constructed, they guide rays of light around an object -- much like a rock diverting water in a stream. For now, however, the technology only works in two dimensions and only comes in the ultrapetite size of 10 micrometers across.

If you're more into retro fashion, there's also the optical camouflage technology developed by scientists at the University of Tokyo. This approach works on the same principles of the blue screen used by TV weather forecasters and Hollywood filmmakers. If you want people to see through you, then why not just film what's behind you and project it onto your body? If you travel with an entourage of videographers, this may be the cloak for you.

Ready to try some of these fashions on for size?

Your Response: Answer the following questions in the space provided. If you need more room, you may attach a sheet of lined paper.

1. If you could create a new scientific invention, what would it be? What would it be called? Describe what it would look like. How would people use it? And what will it be used for?
2. Why do you think your idea hasn’t been invented yet?
3. How would your invention, change the world?

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