

Hoop Bucket Nightmares

To do and notice:

Stand on the tapeline and shoot the basketball into the bucket. Easy?

Still on the tapeline, put the goggles on and try again. How did you do? Easy?

If you keep practicing with the goggles on, your brain will begin to adjust and it will become easier.

After shooting hoops with the goggles on take them off and try to shoot in the hoop. Your brain may need to adjust again.

Try walking along the tapeline without falling.

What's going on?

When wearing the goggles (a right angle prism) the visual field is shifted, making it difficult to shoot on target. Light travels from the bucket to your eye as it passes through the prism it is bent twice –once when it enters the prism and again when it leaves, this is refraction. Your eye-brain system tries to follow this light back to its origin to locate the bucket, but it doesn't know the light was bent. The bucket appears to be somewhere else from the light that enters your eyes.

LIGO connection:

LIGO uses LASER light in the interferometer. The properties of light, reflection, refraction, transmission, focal point and many more are considered when aligning the LASER on the mirrors.