



Seeing is Believing - Teacher's Notes

It is important that students know *never* to stare into the Sun.

Their eyesight can become damaged. Damage is instant. It may take months or years for the eye to recover. Prolonged exposure will result in permanent damage. . Even the best sunglasses are not strong enough to protect their eyes from direct sunlight or from light from laser pointers. You can demonstrate a very mild example of the effect of staring into strong light.

Materials

- A torch/flashlight or weak point source of light
- White paper or a white/pale coloured wall
- A clock/watch to measure time.



Standing at your desk or at the front while holding the torch, ask students seated at their desks to close one eye. They then focus on the light from your torch for 10 seconds. Ask them then to look at a white wall or white piece of paper. A black spot will appear on the white surface. The spot will disappear over the next minute as their eyesight recovers. (A similar effect can come from staring at a ceiling light for 10 seconds).

At the back of their eyes lies a chemical called visual purple. Light energy bleaches this momentarily causing an electrical signal to be sent to the brain and "light" is registered. If it is over-stimulated it takes longer and longer to recover. The unstimulated nerve registers the zone as "no light" or black. Students with eye problems should be excused from this.

Q Did the light cause a change? **YES**

Q What was that change? **Staring at the light produced a temporary blind spot in our vision**

