Facts About Light

Light is amazing. Without it, we wouldn't be able to navigate the world around us. Humans have developed to depend almost entirely on sight to explore and understand what is going on in our world. However, light isn't as simple as it might seem - in fact, there are some pretty amazing facts that might just "light up" your understanding!

You can't really see objects

When you look at something in front of you, you don't technically see the object. What your eyes detect is light bouncing back off the object and hitting the retina at the back of your eye. If scientists ever develop a material that doesn't reflect a single speck of light, then that object would effectively be invisible!

We rely on the sun

Even though humans have flooded the Earth with man-made light, our main source of light is still the sun. It takes the light from the sun around 8 minutes to reach us, over a distance of around 93 million miles. The light from the sun appears white to our eyes but is made up of the seven colours of the rainbow. This is why we see them when sunlight hits raindrops in the air. It is reflected into the separate colours, and forms a rainbow.

Light is quick, but not instant

Light has to travel, which means it takes time to get somewhere. Light travels at 300,000 kilometres per second, which makes it the fastest thing in the universe. On Earth, things are so close that light seems to appear instantaneously, but over greater distances, it takes its time. One of the closest stars to Earth is Sirius, and light takes four years to travel to us. From more distant stars, it takes even longer. So, when you look up at a night sky and see the stars, you are actually seeing the light of stars as they were hundreds of years ago. Some of the stars may not even be there anymore, but we won't see them blink out until their last rays of light reach us. You are literally looking backwards in time!

Atmospheric interference

Earth is surrounded by an atmosphere. It is what allows us to breath and what stops the rays from the sun burning us instantly. It is also the reason that the sky appears to be blue when the sun's light refracts through it. If we didn't have an atmosphere, the sky would be as black as on the darkest night, and we'd be able to see the stars all day. You can get a good idea of this by watching footage from the International Space Station where there is no atmosphere at all.

Without light, there would be no colour

When you see different colours, what you are really seeing is light being reflected back in certain ways. If something is coloured red, it will reflect far more of the red spectrum of light than the other colours, so your eyes will register that signal. This is why everything looks blue if you hold a piece of blue plastic up: it only allows the blue parts of the light through it. If something doesn't reflect very much blue light, it will be very hard to see through the plastic.

SUMMARY FOCUS

1. Why is light so important to humans?
2. How could scientists make something invisible?
3. How is a rainbow formed?
4. Why is looking at a star like looking backwards in time?
5. Why is there no blue sky in space?

VIPERS QUESTIONS

R How fast does light travel?

I How does the author feel about the facts? How do you know?

R How many colours are there in the white light from the sun?

V Find and copy a word that means something happens, or appears to happen, straight away.

E How are all of the facts in the text related to each other?

Answers:

1. We have developed to rely on it, and without it we wouldn't be able to explore the world around us.
2. If they can create a material that doesn't reflect any light, it would be invisible.
3. Sunlight hits rain and is reflected into the different colours.
4. The light you are seeing from the star has taken many years to travel to Earth, so it shows what it was like when it left the star, not what it is like now.
5. The blue in the sky is created by the atmosphere, and there is no atmosphere in space

R: 300,000 km per second

I: The author thinks the facts are interesting and will engage the reader. They say that the facts are pretty amazing.

R: 7

V: Instantaneously

E: They are all about light and how it works.