

Where Did You Get The Color Of Your Eyes? Hereditary Patterns - Science For Kids

Have you ever wondered why your eyes are a certain color? The color of your eyes is determined by a fascinating process known as hereditary patterns.

The Basics of Eye Color

Eye color is determined by the amount and type of pigment, called melanin, that is present in the front part of the iris, the colored part of the eye. The two main pigments responsible for eye color are eumelanin, which appears brown or black, and pheomelanin, which is red or yellow. The distribution and concentration of these pigments in the iris determine the color of your eyes.

While there are several eye colors such as blue, green, brown, hazel, and grey, the most common eye colors are brown and blue. The genetics behind eye color can be complex, but scientists have made significant advancements in understanding the hereditary patterns that contribute to eye color variation.



Where Did You Get the Color of Your Eyes? - Hereditary Patterns Science Book for Kids I

Children's Biology Books by Baby Professor (Kindle Edition)

★★★★★ 5 out of 5

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Print length : 64 pages



Hereditary Patterns of Eye Color

Eye color is primarily inherited from your biological parents and is determined by specific genes passed down through generations. These genes carry information that influences the production and distribution of melanin in the iris.

One important gene involved in eye color inheritance is called OCA2. This gene plays a crucial role in the production of melanin and the determination of eye color. It is responsible for producing proteins that help create the brown and blue pigments in the iris. Variations in the OCA2 gene can result in different levels of melanin production, leading to variations in eye color.

Another gene that affects eye color is called HERC2. This gene controls the activity of the OCA2 gene and regulates melanin production. Changes in the HERC2 gene can impact the level of melanin present in the iris, influencing eye color.

The combination of genes inherited from both parents determines the final eye color. In general, brown eye color is dominant, meaning it is more likely to be passed down to offspring. Blue eyes, on the other hand, are recessive, and their occurrence depends on the specific combination of genes inherited.

Factors Influencing Eye Color

While genetics play a significant role in determining eye color, other factors can also influence its appearance. These factors include variations in the amount and type of melanin produced, as well as environmental factors such as light exposure and age.

Newborn babies often have a blue or grayish eye color, regardless of their genetic inheritance. This is because the melanin-producing cells in their irises are

not yet fully developed. Over time, as these cells mature and produce more melanin, the baby's eye color may change.

Exposure to ultraviolet (UV) light can also affect eye color. UV light can cause oxidative stress and damage to the cells in the iris, leading to changes in eye color over time. Additionally, certain medical conditions and medications may cause changes in eye color as a side effect.

Eye Color and Ethnicity

Eye color can also be influenced by ethnicity. For example, brown eyes are more common in people with African, Native American, and Asian backgrounds, while blue and green eyes are more prevalent in individuals of European descent.

Scientists believe that variations in eye color have evolved over time as a result of human migration and adaptation to different environments. The specific genes responsible for eye color may have provided certain advantages or disadvantages in specific regions.

Understanding the hereditary patterns and science behind eye color can provide a fascinating glimpse into our genetic makeup. While genetics play a significant role, other factors such as light exposure and ethnicity also contribute to the variation in eye color among individuals.

So next time you look into the mirror and admire the color of your eyes, remember that it is the result of a complex interplay between genes and environmental influences, making you unique.

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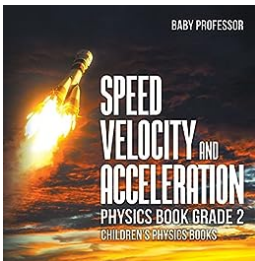
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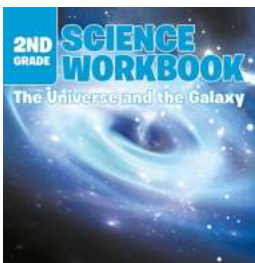


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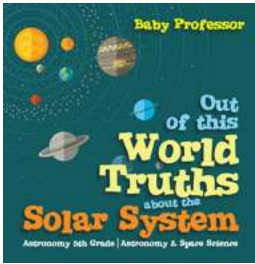
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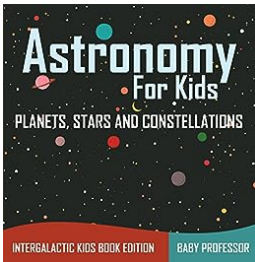
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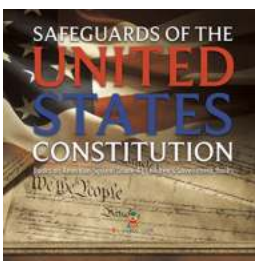
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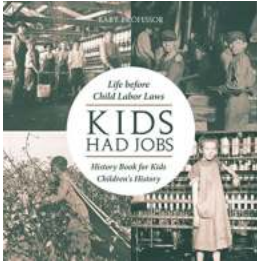
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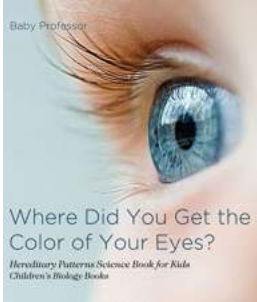
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