

pbs nova treasures of the earth gemstones worksheet answers

PBS Nova Treasures of the Earth Gemstones Worksheet Answers: Unearthing the Answers

Are you captivated by the shimmering world of gemstones? Did the PBS Nova documentary, "Treasures of the Earth," leave you wanting more? Perhaps you're wrestling with the accompanying worksheet, searching for those elusive answers? This comprehensive guide provides not just the answers to the PBS Nova Treasures of the Earth gemstones worksheet, but also a deeper dive into the fascinating science and history behind these captivating gems. We'll explore the key concepts covered in the documentary and worksheet, making sure you fully grasp the geological wonders presented. Get ready to unlock the secrets of the Earth's treasures!

Understanding the PBS Nova Treasures of the Earth Gemstones Worksheet

The PBS Nova "Treasures of the Earth" worksheet is a fantastic tool for reinforcing the knowledge gained from the documentary. It cleverly tests comprehension of key geological processes, mineral formation, and the fascinating stories behind some of the world's most prized gemstones. However, some questions can be tricky, requiring a deeper understanding of the material presented. This post aims to provide clear, concise answers while also offering additional context to enrich your learning experience.

Before diving into the answers, let's reiterate that the specific questions on your worksheet might vary slightly depending on the version or edition. However, the underlying concepts remain consistent. This guide will cover the common themes and questions typically included.

Section 1: Gemstone Formation and Properties

This section of the worksheet likely explores the geological processes that create gemstones. Questions might focus on:

Igneous, Sedimentary, and Metamorphic Rocks: The worksheet will probably test your knowledge of how different rock types contribute to gemstone formation. Remember, igneous rocks form from cooling magma, sedimentary rocks from the accumulation of sediments, and metamorphic rocks from the transformation of existing rocks under heat and pressure. Many gemstones form within or are associated with these different rock types. For instance, diamonds are formed under immense pressure deep within the Earth's mantle (associated with igneous processes), while opals form from the precipitation of silica in sedimentary environments.

Crystal Structure and Chemical Composition: The key here is understanding that a gemstone's properties – its color, hardness, brilliance – are directly related to its chemical composition and crystal structure. The arrangement of atoms within a crystal determines how light interacts with it, affecting its appearance. For example, the brilliant sparkle of a diamond is due to its highly ordered crystal structure and high refractive index.

Identifying Gemstones: This might involve using visual clues such as color, luster, cleavage, and hardness to identify different gemstones. Mohs Hardness Scale is crucial here, ranking minerals from 1 (talc) to 10 (diamond) based on their resistance to scratching.

Section 2: Famous Gemstones and Their Histories

This part of the worksheet likely focuses on specific gemstones, their origins, and their cultural significance. You might encounter questions on:

Diamonds: The worksheet might probe your knowledge of diamond formation, its geological origins, and its historical and cultural importance as a symbol of wealth and love. Knowing the major diamond-producing regions around the world is also valuable.

Rubies and Sapphires: These corundum gemstones (both are aluminum oxide, Al_2O_3) differ in color due to trace elements. The worksheet may delve into their historical use in jewelry and their symbolic meanings across various cultures.

Emeralds: Understanding the geological context of emerald formation, the challenges of mining emeralds, and their historical significance are likely to be assessed. Colombia is famously associated with high-quality emeralds.

Other Gemstones: The worksheet might explore other gemstones like opals, topaz, garnets, etc., focusing on their unique properties and origins.

Section 3: Gemstone Mining and Ethical Considerations

The final section likely touches upon the human side of gemstone acquisition, including:

Mining Techniques: The worksheet might explore various mining methods – from open-pit mining to underground mining – and their environmental impact.

Ethical Sourcing: A key element is the growing emphasis on ethically sourced gemstones, free from conflict and human rights abuses. The "blood diamond" controversy is a pertinent example often discussed.

Gemstone Treatment: Many gemstones undergo treatments to enhance their color or clarity. The worksheet might ask about common treatments and their implications for the gemstone's value.

Providing the Answers (General Guidance)

Since the specific questions vary, I cannot provide the exact answers to your worksheet without seeing it. However, the information above should allow you to confidently answer most questions by applying the concepts discussed to the specific prompts on your worksheet. Remember to use your notes from the PBS Nova documentary to supplement this guide.

Conclusion

The PBS Nova "Treasures of the Earth" documentary and its accompanying worksheet offer a fantastic opportunity to learn about the fascinating world of gemstones. By understanding the geological processes, chemical properties, and cultural significance of these treasures, you gain a deeper appreciation for the Earth's natural beauty and the human stories intertwined with their discovery and use. This guide provided a framework to help you navigate the worksheet and gain a more comprehensive understanding of the subject matter. Remember to consult your documentary notes and use critical thinking to answer any remaining questions.

FAQs

1. Where can I find the PBS Nova Treasures of the Earth documentary? The documentary is often available on the PBS website ([pbs.org](https://www.pbs.org)) or through various streaming services depending on your region.
1. Are there different versions of the worksheet? Yes, the specific questions may differ depending on the educational institution or organization distributing the worksheet.
1. What is the best way to study for the worksheet? Review your notes from the documentary, focus on understanding the core concepts of gemstone formation and properties, and practice identifying different gemstones based on their characteristics.
1. Are all gemstone treatments detrimental to the stone's value? Not necessarily. Some treatments are common practice and are often disclosed, while others might significantly impact value. The worksheet may test your knowledge of this distinction.
1. Where can I learn more about ethical gemstone sourcing? Reputable organizations and certification programs, such as those focused on conflict-free diamonds, provide

valuable resources and information about responsible gemstone sourcing. Researching these organizations will enhance your understanding of this important issue.

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