Diamonds The Truth Behind The Bling Answer Key

DIAMONDS, THE TRUTH BEHIND THE BLING

9

Science Literacy Warm Up

but the majority are used for less glamorous purposes. Diamond grains are used as abrasive coatings on devices that are supposed to cut into hard or delicate materials. Oil and natural gas drilling rigs use huge drill bits that are coated in diamonds. This makes it easier to cut through kilometers of dense earth and rock. Diamond scalpels have also been made for surgery for use on fragile eye and brain tissue. Super strong diamond window panes have been put on spaces ships to withstand the extremes of space travel. Besides being amazingly hard, diamonds are also the best thermal conductors in the world. Diamonds can easily draw heat away from where it is being generated, making them great heat sinks for removing excess heat from highly heat sensitive microelectronic and telecommunications devices.

(7) What if the Earth's crust was made of diamonds? There would be no need to make synthetic diamonds. This may seem ridiculous to you, but in 2004 a planet was discovered that seems to be made of at least one third diamonds. *55 Cancri e* is a planet that orbits a star in our Milky Way galaxy. Based on analysis of its mass, radius and composition, *55 Cancri e* is estimated to be composed mostly of carbon and much of it is of the diamond variety. Having a planetary surface temperature of more than 5,000°F/1,649°C does a lot to help transform carbon into diamonds.

Article Questions

1) The word diamond comes from the Greek word _____ which means _____. A diamond's sparkle is called its _____. A _____ is equivalent to 200mg of diamond. Diamond coated structures can be synthesized using the _____ (provide full name) method.

2) What makes diamonds so strong and graphite so brittle and breakable?
Carbon atoms in a diamond form strong tetrahedral arrangements, but carbon atoms in graphite form honeycomb structures in a flat plane which are much more fragile.(2)

3) How are natural diamonds formed?
Natural diamonds are formed when carbon deposits are exposed to extreme heat and pressure over hundreds of millions of years.(3)

4) What does HPHT stand for and what does it attempt to do?
HPHT stands for High-Pressure High-Temperature. HPHT is a synthetic diamond manufacturing method that uses high temperature and pressure over a short period of time to mimic what geological conditions does make diamonds over hundreds of million of years.(3)

5) Identify two unique properties of diamonds. Explain how each property makes diamonds useful for a commercial application.
1) Diamonds are very hard. This makes them great for making surgical scalpels to cut into delicate eye and brain tissue. (Various Answers)(3)
2) Diamonds are very thermally conductive. This makes them great heat sinks which can draw excess heat away from electronic devices that are very heat sensitive.(3)

6) Planet *55 Cancri e* has two primary factors that make the formation of diamonds highly likely. What are these two factors?
An abundance of carbon and high planetary surface temperature.(1)

© Teacher Science

Diamonds have long been regarded as symbols of wealth, love, and elegance. They sparkle in jewelry stores, dazzle at engagements, and hold a significant place in popular culture. However, beneath the surface of their allure lies a complex story involving geology, economics, and ethical considerations. This article dives deep into the truth behind diamonds, exploring their origins, the diamond industry, and the ethical implications of their extraction and sale.

The Formation of Diamonds

Diamonds are not just pretty stones; they are formed under extreme conditions deep within the Earth's mantle. Here’s a brief overview of how diamonds are created:

1. Carbon Source: Diamonds are composed of carbon atoms. The carbon must be subjected to high pressure and temperature.
2. Conditions: These conditions typically exist about 160 kilometers (100 miles) beneath the Earth’s surface, where temperatures can reach between 900 to 1,300 degrees Celsius (1,650 to 2,370 degrees Fahrenheit).
3. Timeframe: It can take millions to billions of years for diamonds to form.
4. Volcanic Eruptions: Diamonds are brought closer to the Earth’s surface through volcanic eruptions, encapsulated in a rock called kimberlite.

The Diamond Industry: An Overview

The diamond industry is a multi-billion-dollar global enterprise. Understanding its structure and dynamics is crucial to grasping the broader implications of diamond consumption.

Key Players in the Diamond Market

The diamond market comprises various players that influence supply and pricing:

- Mining Companies: Major mining corporations, such as De Beers, Alrosa, and Rio Tinto, dominate the extraction of rough diamonds.
- Wholesalers: They purchase rough diamonds from mining companies and sell them to retailers.
- Retailers: Jewelry stores and online platforms sell finished diamond jewelry to consumers.

The Economic Impact of Diamonds

Diamonds play a significant role in the economies of several countries, particularly those in Africa. They contribute to national GDP, provide employment, and can drive infrastructural development. However, the wealth generated from diamond mining is often unevenly distributed.

Global Consumption and Trends

The demand for diamonds is largely influenced by cultural practices, marketing, and economic factors. Key trends include:

- Engagement Rings: The tradition of giving diamond engagement rings has significantly increased demand.
- Luxury Market: Diamonds are often seen as status symbols, leading to robust sales in the luxury sector.
- Lab-Grown Diamonds: The rise of lab-grown diamonds is changing consumer perceptions and purchasing behaviors.

Ethical Considerations in the Diamond Trade

While diamonds are celebrated for their beauty, the ethical implications surrounding their extraction and trade cannot be ignored. The term "blood diamonds" or "conflict diamonds" refers to diamonds mined in war zones and

sold to finance armed conflict.

The Kimberley Process Certification Scheme (KPCS)

In response to the issue of conflict diamonds, the international community established the Kimberley Process in 2003. The KPCS aims to prevent the trade of conflict diamonds by:

- Certification: Ensuring that diamonds are sourced from conflict-free zones.
- Traceability: Creating a system that tracks diamonds from mine to market.

However, the effectiveness of the KPCS has been criticized due to loopholes and lack of enforcement. As a result, many consumers are now seeking more comprehensive ethical sourcing guarantees.

Environmental Concerns

Diamond mining can have severe environmental consequences, including:

- Habitat Destruction: Mining operations often lead to deforestation and loss of biodiversity.
- Water Pollution: The use of chemicals in the mining process can contaminate local water sources.
- Carbon Footprint: The overall carbon footprint of diamond mining and transportation contributes to climate change.

Sustainable Alternatives to Natural Diamonds

As awareness of ethical and environmental issues grows, many consumers are turning to sustainable alternatives. These options include:

- Lab-Grown Diamonds: Created in controlled environments, they have the same physical properties as natural diamonds but are often more affordable and ethical.
- Recycled Diamonds: Sourcing diamonds from old jewelry reduces the demand for new mining.
- Synthetic Alternatives: Moissanite and other synthetic stones offer beautiful alternatives to traditional diamonds.

The Future of the Diamond Industry

The future of the diamond industry is likely to be shaped by evolving consumer preferences, technological advancements, and increased focus on

sustainability. Key factors include:

- Transparency: Consumers are demanding more transparency in the sourcing and production of diamonds.
- Innovation: Advances in technology may lead to new methods of diamond creation that are more environmentally friendly.
- Cultural Shifts: Changing attitudes towards marriage and gifting may affect the traditional diamond market.

The Cultural Significance of Diamonds

Diamonds hold profound cultural significance across various societies. They symbolize love, commitment, and status. Here are some of the cultural meanings attributed to diamonds:

- Love and Commitment: In many cultures, diamonds are associated with engagement and marriage, often considered a symbol of eternal love.
- Wealth and Status: Historically, diamonds have been a marker of wealth and power, often worn by royalty and the elite.
- Milestones: Diamonds are often given as gifts to mark significant life events, such as anniversaries and graduations.

Conclusion: The Bling and Beyond

While diamonds undeniably possess an enchanting allure, the truth behind their existence is multifaceted and complex. From their geological formation to the ethical ramifications of their trade, diamonds are not merely objects of beauty but also symbols of significant economic and social implications.

As consumers become more informed and conscientious, the diamond industry will likely undergo significant transformation. Whether through the adoption of sustainable practices, the rise of lab-grown alternatives, or a greater emphasis on ethical sourcing, the future of diamonds will be shaped by a collective desire for transparency, fairness, and responsibility.

In the end, the bling may catch the eye, but it is the truth behind the diamond that captures the heart and mind.

Frequently Asked Questions

What are the main sources of diamonds in today's

market?

The main sources of diamonds today include natural diamond mines in countries like Russia, Botswana, Canada, and Australia, as well as synthetic diamonds produced in laboratories.

How do lab-grown diamonds compare to natural diamonds in terms of quality?

Lab-grown diamonds are chemically and physically identical to natural diamonds, often exhibiting better clarity and fewer imperfections, but they typically cost 20-40% less than their natural counterparts.

What are the ethical concerns surrounding diamond mining?

Ethical concerns include human rights abuses, environmental degradation, and funding of conflict in war-torn regions, leading to the promotion of conflict-free and ethically sourced diamonds.

What is the significance of the 'Four Cs' in diamond valuation?

The 'Four Cs'—Cut, Color, Clarity, and Carat weight—are essential criteria that determine a diamond's quality, value, and overall appearance, guiding consumers in their purchasing decisions.

How has consumer perception of diamonds changed in recent years?

Consumer perception of diamonds has shifted towards valuing ethical sourcing, sustainability, and personal expression over traditional symbols of wealth, influencing trends in jewelry design and purchasing behavior.

Diamonds The Truth Behind The Bling Answer Key

Rihanna□□Diamonds□ □□_□□□□
Aug 22, 2013 · Rihanna□□Diamonds□ □□□□□:Diamonds□□:Rihanna□□:UnapologeticShine bright like a diamondShine bright like a ...

□□□diamonds□□ - □□□□

蕾哈娜diamonds歌词Shine bright like a diamondShine bright like a diamondFind light in the beautiful sea, I choose to be happyYou and I, you and I , we're like ...

diamonds中文歌词_百度知道
Dec 24, 2024 · diamonds中文歌词1. Shine bright like a diamond 如此璀璨的钻漾年华 Shine bright like a diamond 如此璀璨的钻漾年华2. Find light in the beautiful sea ...

diamonds歌词 - 百度知道
diamonds歌词Shine bright like a diamond Shine bright like a diamond Find light in the beautiful sea I choose to be happy You and I, you and I We’re like diamonds in the ...

diamonds 中文歌词_百度知道
《Diamonds》呈现出了钻石独特的闪耀魅力。此曲由RiRi的长期合作伙伴Stargate和Benny Blanco担纲制作，明显区别于此前《Only Girl》和《We Found Love》快节 ...

Rihanna的《**Diamonds**》歌词_百度知道
Aug 22, 2013 · Rihanna的《Diamonds》歌词歌曲名:Diamonds歌手:Rihanna专辑:UnapologeticShine bright like a diamondShine bright like a diamondFind light in the beautiful seaI choose to be happyYou and I, you and IWe□

蕾哈娜**diamonds**歌词 - 百度知道
蕾哈娜diamonds歌词Shine bright like a diamondShine bright like a diamondFind light in the beautiful sea, I choose to be happyYou and I, you and I , we're like diamonds in the skyYou're a shoot

diamonds中文歌词_百度知道
Dec 24, 2024 · diamonds中文歌词1. Shine bright like a diamond 如此璀璨的钻漾年华 Shine bright like a diamond 如此璀璨的钻漾年华2. Find light in the beautiful sea 寻遍了这苍茫洋流里的微光 Find light in the

diamonds歌词 - 百度知道
diamonds歌词Shine bright like a diamond Shine bright like a diamond Find light in the beautiful sea I choose to be happy You and I, you and I We’re like diamonds in the sky You’re a shooting star I

diamonds 中文歌词_百度知道
《Diamonds》呈现出了钻石独特的闪耀魅力。此曲由RiRi的长期合作伙伴Stargate和Benny Blanco担纲制作，明显区别于此前《Only Girl》和《We Found Love》快节奏的电子舞曲风格，这次俩人将Rihanna带回了内容更丰富的中板节奏，配合她本人充满力量的嗓音，从开头就紧紧抓住了听众的耳朵。在美国公告牌排行榜 ...

求**Rihanna** 新曲 **Diamonds** 的歌词和中文翻译 - 百度知道
求Rihanna 新曲 Diamonds 的歌词和中文翻译 ～《Diamonds（In The Sky）》歌曲原唱: 蕾哈娜Shine bright like a diamond如此璀璨的钻漾年华Shine bright like a diamond如此璀璨的钻漾年华Find light in the beautifu

*diamonds*歌词中文谐音 - 百度知道
diamonds歌词中文谐音Shine bright like a diamond 是爱嗯来课额带额们的Shine bright like a diamond 是爱嗯来课额带额们的Find light in the beautiful sea 服爱嗯的来特音则比有特

The thieves wanted to ()the diamonds - 百度知道
May 13, 2021 · The thieves wanted to ()the diamondsThe thieves wanted to ___the diamonds.want to do sth . 想要做某事，根据句子内容，横线上填写: rob / stealThe thieves wanted to rob (steal) thediamonds.汉语:

蕾哈娜**diamonds**歌词 - 百度知道
Dec 1, 2023 · 蕾哈娜diamonds歌词《Diamonds》的歌词由蕾哈娜演唱，歌词大意为:“我们在夜空中闪亮，像钻石一样。当我与你共舞，我感觉自己像是全世界最

幸运的女孩。

探索性数据分析(一)||以diamonds为例 - 知乎

探索diamonds 数据包 好吧电脑有点带不动了，所以在这里我就不用完整的包含53940个观测的原数据作图了，我们从中取1000个观测来进行探索性的 数据分析。

Uncover the secrets of diamonds with "Diamonds: The Truth Behind the Bling Answer Key." Learn more about their value

Back to Home