

Pbs Nova Life's Greatest Miracle Worksheet Answers

PBS-NOVA: Life's Greatest Miracle Movie Worksheet

Please answer the following questions as you learn about the "miracle of life"

1. How many human babies are born each day?
395,000
2. What is DNA "very good" at?
Making copies of itself
3. What risk is there for a species that only reproduces by cloning?
If humans were all clones, they would all have the exact same immune system, and could be wiped out by one successful parasite
4. How does the DNA of sexually produced offspring compare to the DNA of the parents?
Each individual provides some DNA and will create variety to the DNA making an individual unlike any other
5. How many sperm are produced by the average human male?
1000/per second or over 100 million everyday
6. What process is used to make sperm cells and egg cells?
Meiosis
7. What happens to the genes when two chromosomes "embrace"?
Genes are exchanged between partners > the cell divides twice each pair pulled apart > the final result is a sperm or egg cell holding 23 chromosomes
8. What is the advantage of diversity within a species?
Better odds of survival
9. When does a human female produce her eggs?
When they are a fetus in the womb
10. What danger confronts sperm in the vagina?
The vagina is acidic so they must escape or die. Cervical mucus blocks the passageway top the uterus
11. What does the sperm need in order to be allowed through the egg's zona?
Protein of the sperm must align with the proteins in the eggs surface precisely. Once this happens the egg sheds its outer coating allowing enzymes to dissolve a hole for the sperm to enter the egg cell.
12. How much time passes between fertilization and the first division of the zygote?
3 weeks
13. After fertilization, how long does it take for the blastocyst to arrive in the uterus?
6 days
14. What risk does the blastocyst face after it attaches to the uterus?
Mothers immune system: white blood cells would swarm in to destroy the blastocyst
15. True or False: All cells have the same genes.
False
16. What does a gene do when it has been turned on?
It tells the cell to construct a particular protein
17. Where specifically does the baby get its nutrients from?
Placenta
18. Does the blood of the mother and the baby ever mix?
No
19. How old is the fetus when it gains the ability to hear sound?
5 Months
20. What is the main job of the fetus during the last trimester?
To Grow

pbs nova life's greatest miracle worksheet answers are essential for students and educators who seek to understand the intricate processes of human reproduction and development. The PBS NOVA documentary "Life's Greatest Miracle" explores these complex biological phenomena, making it an invaluable resource for biology classes and related studies. In this article, we will delve into the key themes presented in the documentary, provide insights into the accompanying worksheet, and offer answers to common questions associated with it. This comprehensive guide aims to enrich understanding and encourage further exploration of human life sciences.

Overview of PBS NOVA: Life's Greatest Miracle

PBS NOVA's "Life's Greatest Miracle" is a compelling documentary that captures the miraculous process of human development from conception to birth. The film employs stunning visuals and expert commentary to illustrate how a single sperm and egg can unite to create a complex organism.

Key Themes in the Documentary

The documentary covers several critical themes, including:

- **The Journey of Sperm:** The film illustrates the arduous journey of sperm through the female reproductive system, emphasizing the challenges they face to reach the egg.
- **Fertilization:** This section details the moment of conception, showcasing how the sperm penetrates the egg and the genetic material combines.
- **Development Stages:** Viewers learn about the various stages of embryonic development, from the zygote to the formation of basic organs and systems.
- **Birth Process:** The documentary also touches on the miraculous process of birth and the transition from inside the womb to the outside world.

Understanding the Worksheet

The accompanying worksheet for "Life's Greatest Miracle" is designed to reinforce learning and comprehension of the documentary's content. It typically includes questions that prompt critical thinking and application of the concepts discussed in the film.

Common Sections of the Worksheet

The worksheet is usually divided into several sections, including:

1. **Pre-Fertilization:** Questions about the anatomy of the reproductive systems and the roles of various

cells.

2. **Fertilization Process:** Queries that focus on the events leading up to and including fertilization.
3. **Embryonic Development:** Questions regarding the stages of development and the significance of each stage.
4. **Birth:** Questions that explore the mechanics and significance of the birthing process.

Worksheet Answers: A Guide for Educators and Students

While it is important for students to engage deeply with the material, educators often find it useful to have a set of reference answers. Below, we provide a simplified outline of answers to common questions found on the worksheet.

1. Pre-Fertilization Questions

- What are the primary male and female reproductive organs?
- Male: Testes
- Female: Ovaries

- What role do hormones play in reproduction?
- Hormones regulate reproductive processes, including the menstrual cycle in females and sperm production in males.

2. Fertilization Questions

- Describe the process of fertilization.
- Fertilization occurs when a sperm cell penetrates an egg cell. This leads to the formation of a zygote, which contains genetic material from both parents.

- What are the barriers sperm must overcome to fertilize an egg?
- Sperm must navigate the vaginal canal, cervix, uterus, and fallopian tubes, overcoming various physical and chemical barriers along the way.

3. Embryonic Development Questions

- What are the key stages of embryonic development?
- The key stages include cleavage, blastocyst formation, and gastrulation, leading to organogenesis.
- What is the significance of the placenta?
- The placenta provides oxygen and nutrients to the developing fetus and removes waste products from the fetus's blood.

4. Birth Questions

- What are the stages of labor?
- The stages of labor include:
 1. Early labor
 2. Active labor
 3. Transition
 4. Delivery of the baby
 5. Delivery of the placenta
- How does the body prepare for birth?
- Hormonal changes initiate contractions, and the cervix softens and dilates in preparation for delivery.

Additional Resources for Learning

To further enhance understanding, students and educators are encouraged to explore additional resources related to human development and reproduction. Some valuable resources include:

- **Books:** "The Developing Human: Clinically Oriented Embryology" by Keith L. Moore.
- **Online Courses:** Websites like Coursera and Khan Academy offer courses on human biology and development.
- **Scientific Journals:** Reading peer-reviewed articles can provide deeper insights into current research in reproductive biology.

Conclusion

In conclusion, the PBS NOVA documentary "Life's Greatest Miracle" offers a profound exploration of human reproduction and development. The accompanying worksheet serves as a valuable educational tool, enabling students to reflect on and comprehend the complexities of the subject. By utilizing the answers provided and exploring additional resources, learners can cultivate a richer understanding of the miraculous journey of life. Whether in a classroom setting or for individual study, this documentary and its related materials stand as a testament to the wonder of human existence.

Frequently Asked Questions

What is the main focus of the PBS NOVA episode 'Life's Greatest Miracle'?

The main focus of the PBS NOVA episode 'Life's Greatest Miracle' is to explore the biological processes of human reproduction, including fertilization, embryonic development, and the intricate journey of sperm and egg.

How does the NOVA episode explain the process of fertilization?

The NOVA episode explains fertilization as a complex interaction where a sperm penetrates an egg, leading to the fusion of genetic material and the beginning of new life.

What key concepts are highlighted in the worksheet that accompanies 'Life's Greatest Miracle'?

The worksheet highlights key concepts such as the stages of prenatal development, the role of genetics, and the importance of environmental factors in shaping the developing fetus.

What educational purposes does the 'Life's Greatest Miracle' worksheet serve?

The worksheet serves educational purposes by reinforcing the content of the episode, facilitating discussions on reproduction and development, and providing students with guided questions to enhance their understanding.

What are some common misconceptions about human reproduction addressed in the PBS NOVA episode?

The episode addresses misconceptions such as the oversimplification of fertilization, the assumption that

pregnancy is solely determined by genetics, and the lack of awareness about the complexities of prenatal development.

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Unlock the secrets of PBS Nova's "Life's Greatest Miracle" with our comprehensive worksheet answers. Discover how to enhance your learning experience today!

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