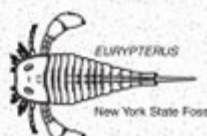


Ny Earth Science Reference Table

The University of the State of New York • THE STATE EDUCATION DEPARTMENT • Albany, New York 12234 • www.nysed.gov

Earth Science Reference Tables

PHYSICAL CONSTANTS		
Radioactive Decay Data		Specific Heats of Common Materials
RADIOACTIVE ISOTOPE	DISINTEGRATION	HALF-LIFE (years)
Carbon-14	$C^{14} \rightarrow N^{14}$	5.7×10^3
Potassium-40	$K^{40} \rightarrow Ar^{40}$ $K^{40} \rightarrow Ca^{40}$	1.3×10^9
Uranium-238	$U^{238} \rightarrow Pb^{206}$	4.5×10^9
Rubidium-87	$Rb^{87} \rightarrow Sr^{87}$	4.9×10^{10}
MATERIAL	SPECIFIC HEAT (calories/gram • °C)	
Water { solid	0.5	
liquid	1.0	
gas	0.5	
Dry air	0.24	
Basalt	0.20	
Granite	0.19	
Iron	0.11	
Copper	0.09	
Lead	0.03	
Properties of Water		
Energy gained during melting 80 calories/gram		
Energy released during freezing 80 calories/gram		
Energy gained during vaporization 540 calories/gram		
Energy released during condensation 540 calories/gram		
Density at 3.98°C 1.00 gram/milliliter		
EQUATIONS		
Percent deviation from accepted value	$\text{deviation (\%)} = \frac{\text{difference from accepted value}}{\text{accepted value}} \times 100$	
Eccentricity of an ellipse	$\text{eccentricity} = \frac{\text{distance between foci}}{\text{length of major axis}}$	
Gradient	$\text{gradient} = \frac{\text{change in field value}}{\text{distance}}$	
Rate of change	$\text{rate of change} = \frac{\text{change in field value}}{\text{time}}$	
Density of a substance	$\text{density} = \frac{\text{mass}}{\text{volume}}$	
2001 EDITION This edition of the Earth Science Reference Tables should be used in the classroom beginning in the 2000-2001 school year. The first examination for which these tables will be used is the January 2001 Regents Examination in Earth Science.		
 ELMYRPTERUS New York State Fossil		

(Revised November 2006)

NY Earth Science Reference Table is an essential tool used by students and educators in New York State to facilitate the study of earth science concepts. This table serves as a comprehensive resource that compiles critical information, data, and formulas relevant to the subject. It is designed to aid in understanding geological processes, meteorological phenomena, and the dynamics of Earth's systems. In this article, we will explore the structure, components, and significance of the NY Earth Science Reference Table, as well as how it can be effectively utilized for educational purposes.

Understanding the NY Earth Science Reference Table

The NY Earth Science Reference Table is part of the New York State Education Department's (NYSED) curriculum materials and is specifically tailored for students preparing for the Earth Science Regents Examination. This table organizes complex concepts into an easy-to-reference

format, making it an invaluable resource for both classroom learning and exam preparation.

Components of the NY Earth Science Reference Table

The NY Earth Science Reference Table consists of various sections, each focusing on different aspects of earth science. Key components include:

- **Maps and Models:** This section includes topographic maps and model representations of various geological structures.
- **Physical Properties of Minerals:** A detailed list of minerals with their physical properties such as hardness, luster, and color.
- **Rock Cycle:** Diagrams and descriptions that outline the processes of igneous, sedimentary, and metamorphic rock formation.
- **Earth's Layers:** Information about the composition and characteristics of Earth's crust, mantle, outer core, and inner core.
- **Weather and Climate:** Charts that explain atmospheric conditions, including temperature, pressure, and humidity.
- **Plate Tectonics:** A summary of tectonic plate movements and their effects, such as earthquakes and volcanic activity.
- **Hydrology:** Data on the water cycle, including precipitation, evaporation, and the distribution of freshwater resources.
- **Fossils and Geological Time:** Information on the fossil record and techniques for dating geological formations.

Structure and Layout

The NY Earth Science Reference Table is typically formatted for ease of use. It is often presented in a large, laminated format or as a digital resource that can be accessed online. The layout is designed to facilitate quick reference, with sections clearly labeled and organized logically. This allows students to quickly find the information they need without sifting through extensive text.

Significance of the NY Earth Science Reference Table

The NY Earth Science Reference Table plays a vital role in the educational framework for earth science in New York. Its significance can be understood through several key points:

1. Enhances Learning

By providing a centralized source of information, the reference table helps students grasp complex scientific concepts. It allows them to visualize and comprehend relationships between different earth science topics, making it easier to integrate knowledge across various subjects.

2. Prepares for Examinations

The Earth Science Regents Examination requires students to apply knowledge from multiple disciplines, including geology, meteorology, and oceanography. The reference table equips students with the necessary tools to perform calculations, interpret data, and analyze graphs, all of which are crucial for success on the exam.

3. Supports Diverse Learning Styles

The table caters to different learning preferences. Visual learners benefit from diagrams and charts, while analytical learners can engage with numerical data and formulas. This diversity in presentation helps ensure that all students can access and understand the material.

4. Encourages Independent Study

With the NY Earth Science Reference Table, students can take charge of their learning. They can use the table for self-study, homework, and group projects, fostering a sense of autonomy and confidence in their scientific abilities.

Utilizing the NY Earth Science Reference Table Effectively

To maximize the benefits of the NY Earth Science Reference Table, students and educators should adopt effective strategies for its use:

1. Familiarization

Students should spend time familiarizing themselves with the layout and contents of the table. Understanding where information is located can save time during study sessions and while taking exams.

2. Active Engagement

Rather than passively reading the information, students should engage with the content through activities such as:

- Creating flashcards for key terms and concepts found in the table.
- Practicing with sample problems and data interpretation exercises based on the reference table.
- Forming study groups to discuss and review the information collaboratively.

3. Integration with Curriculum

Teachers can enhance their curriculum by incorporating the reference table into lessons. For instance, when teaching about the rock cycle, a demonstration using the corresponding diagrams from the table can help reinforce students' understanding.

4. Regular Review

Frequent review of the table's contents can help reinforce knowledge retention. Teachers may schedule periodic assessments that require students to apply concepts from the table, ensuring that students remain engaged with the material throughout the course.

Challenges and Limitations

While the NY Earth Science Reference Table is an invaluable resource, there are some challenges and limitations to consider:

1. Over-Reliance

Students may become overly reliant on the reference table, leading to a lack of deeper understanding of the concepts. It is essential for students to complement their study with additional resources, such as textbooks and scientific literature.

2. Updates and Changes

The field of earth science is constantly evolving, and the reference table may not always reflect the

latest discoveries and advancements. Educators should be aware of current research and developments in earth science to provide students with a well-rounded education.

3. Accessibility Issues

In some cases, students may have difficulty accessing physical copies of the reference table, especially in remote or underserved areas. Schools and districts should work to ensure that all students have access to this critical educational resource.

Conclusion

In summary, the NY Earth Science Reference Table is an essential educational tool that aids students in understanding complex earth science concepts and prepares them for success on the Earth Science Regents Examination. By familiarizing themselves with the table's components, actively engaging with the material, and integrating it into their studies, students can enhance their learning experience. While there are challenges to consider, the benefits of the NY Earth Science Reference Table far outweigh the drawbacks, making it a cornerstone resource for earth science education in New York State.

Frequently Asked Questions

What is the NY Earth Science Reference Table used for?

The NY Earth Science Reference Table is used as a resource for students and teachers in New York State to assist in understanding key concepts in Earth science, including geology, meteorology, and astronomy.

Where can I find the NY Earth Science Reference Table?

The NY Earth Science Reference Table can be found on the New York State Education Department's website, as well as in Earth science classrooms and textbooks.

How often is the NY Earth Science Reference Table updated?

The NY Earth Science Reference Table is typically updated every few years to reflect changes in curriculum standards and scientific advancements.

What are some key sections included in the NY Earth Science Reference Table?

Key sections of the NY Earth Science Reference Table include rock and mineral identification, topographic maps, weather data, and planetary information.

Is the NY Earth Science Reference Table useful for standardized testing?

Yes, the NY Earth Science Reference Table is a critical resource for students preparing for standardized tests, as it provides essential data and reference material needed for answering exam questions.

How can teachers effectively incorporate the NY Earth Science Reference Table into their lessons?

Teachers can incorporate the NY Earth Science Reference Table by using it as a reference during labs, guiding students through its sections during lectures, and assigning exercises that require its use.

Are there any online resources that complement the NY Earth Science Reference Table?

Yes, there are various online resources, including educational websites and interactive simulations, that complement the NY Earth Science Reference Table and enhance learning in Earth science.

What skills can students develop by using the NY Earth Science Reference Table?

Students can develop skills such as critical thinking, data analysis, problem-solving, and practical application of scientific concepts by using the NY Earth Science Reference Table.

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