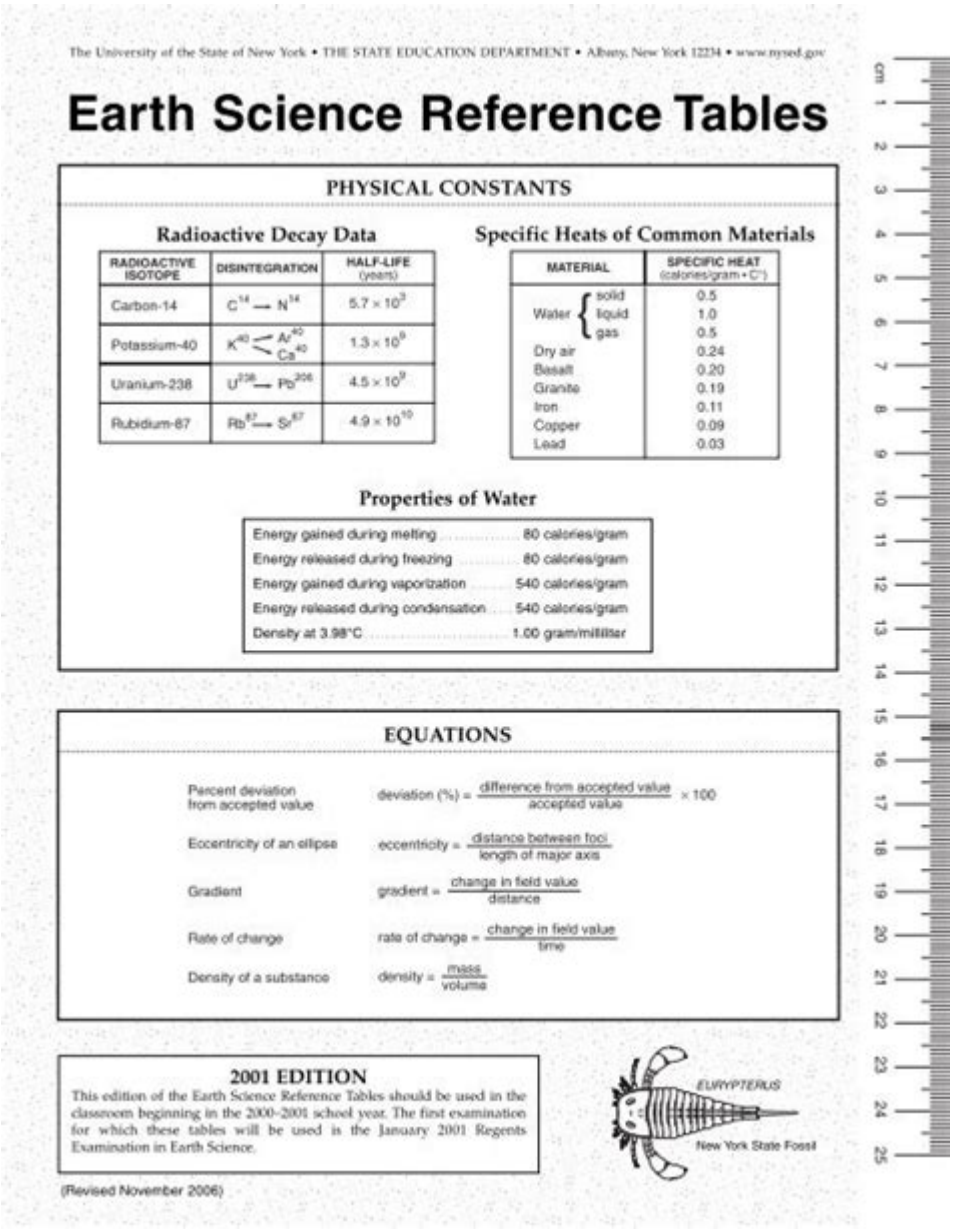
Nys Earth Science Reference Tables



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Earth Science Reference Tables

PHYSICAL CONSTANTS

Radioactive Decay Data

RADIOACTIVE ISOTOPE	DISINTEGRATION	HALF-LIFE (years)
Carbon-14	$C^{14} \rightarrow N^{14}$	5.7×10^3
Potassium-40	$K^{40} \rightarrow Ar^{40}$, 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}

Specific Heats of Common Materials

MATERIAL	SPECIFIC HEAT (calories/gram • °C)
Water (solid)	0.5
Water (liquid)	1.0
Water (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.

(Revised November 2006)

Understanding NYS Earth Science Reference Tables

NYS Earth Science Reference Tables serve as an essential resource for students and educators in New York State, particularly for those preparing for the Earth Science Regents examination. These tables compile a vast array of scientific data and information that are crucial for understanding various earth science concepts. They not only aid in the study process but also serve as a reference during examinations, enabling students to apply their knowledge effectively. In this article, we will explore the significance of these reference tables, their components, and how they can be utilized

effectively.

The Importance of NYS Earth Science Reference Tables

The NYS Earth Science Reference Tables are a compilation of charts, graphs, and data that provide students with valuable information. These tables are designed to assist learners in grasping complex earth science concepts more easily. Here are some reasons why these reference tables are vital:

- **Standardized Information:** The tables offer standardized data that align with the New York State curriculum, ensuring that students are learning relevant and accurate information.
- **Visual Learning:** Many students find visual aids such as graphs and charts easier to understand compared to text-heavy materials. The reference tables cater to this learning style.
- **Quick Reference:** During exams, students can quickly refer to the tables to find necessary data, saving time and reducing stress.
- **Comprehensive Resource:** The tables cover a wide range of topics, making them a one-stop resource for many different aspects of earth science.

Components of the NYS Earth Science Reference Tables

The NYS Earth Science Reference Tables consist of various sections, each focusing on a different area of earth science. Understanding these components is crucial for effective study and application. The main sections include:

1. Maps and Topography

This section provides students with topographic maps and features of New York State. Key elements include:

- Topographic Maps: These maps illustrate elevation changes and landforms using contour lines, which are essential for understanding physical geography.
- Geological Maps: Students can learn about the different rock types and geological features present in New York State.

2. Weather and Climate

Weather and climate data are essential for understanding atmospheric processes. This section includes:

- Weather Maps: These contain information about fronts, air pressure systems, and precipitation patterns.
- Climate Data Tables: Students can access average temperature and precipitation data for various locations.

3. Astronomy

The astronomy section covers essential concepts related to celestial bodies. Key components include:

- Planetary Data: Information on the planets in our solar system, including size, distance from the sun, and atmospheric composition.
- Lunar Phases: Diagrams illustrating the different phases of the moon and their occurrence.

4. Earth Processes

This section focuses on geological processes and includes:

- Rock Cycle Diagrams: Visual representations of how different rock types are formed and transformed.
- Plate Tectonics: Information on the movement of tectonic plates, including diagrams showing boundaries and associated phenomena.

5. Ecology and Human Impact

Understanding the relationship between humans and the environment is crucial in earth science. This section includes:

- Ecosystem Diagrams: These illustrate various ecosystems and their components, such as producers, consumers, and decomposers.
- Human Impact Charts: Information on how human activities affect natural systems, including pollution and resource depletion.

How to Use NYS Earth Science Reference Tables

Effectively

To maximize the benefits of the NYS Earth Science Reference Tables, students should employ strategic study techniques. Here are some effective methods:

1. **Familiarization:** Before diving into specific topics, students should spend time familiarizing themselves with the layout of the reference tables. Understanding where to find information quickly will be beneficial during both study sessions and exams.

2. **Active Learning:** Engage with the material by summarizing key points from each section. This can be done through note-taking, discussing with peers, or teaching concepts to others.

3. **Practice Questions:** Use the reference tables to answer practice questions. This will help reinforce understanding and build confidence in using the tables during exams.

4. **Visual Aids:** Create flashcards or visual aids based on the reference tables to help memorize key concepts and data. This can be particularly helpful for visual learners.

5. **Group Study:** Form study groups to encourage discussion and collaboration. Sharing insights about the reference tables can enhance understanding and retention.

Integrating NYS Earth Science Reference Tables into Study Plans

Incorporating the NYS Earth Science Reference Tables into a comprehensive study plan can significantly enhance a student’s learning experience. Here are some tips for effective integration:

1. Set Specific Goals

Establish clear objectives for each study session that outline what you aim to achieve with the reference tables. For example, focus on mastering the rock cycle one week and weather patterns the next.

2. Schedule Regular Review Sessions

Regularly revisiting the reference tables helps reinforce learning. Schedule short review sessions throughout the week to keep the information fresh in your mind.

3. Utilize Real-World Examples

Connect the data from the reference tables with real-world situations. For instance, consider how weather patterns affect local ecosystems or how geological processes shape the landscape.

4. Practice with Past Exams

Use past Earth Science Regents exams to practice applying the information found in the reference tables. This will help you become more comfortable with the format and types of questions you may encounter.

5. Seek Help When Needed

If you encounter difficulties understanding certain sections of the reference tables, do not hesitate to seek help from teachers or peers. Collaborative learning can provide new insights and clarify complex topics.

Conclusion

The NYS Earth Science Reference Tables are invaluable tools for students and educators alike. They provide a wealth of information that supports learning and comprehension in the field of earth science. By understanding the components of these tables and incorporating them into study practices, students can enhance their chances of success in their earth science studies and exams. Embracing these resources not only aids in academic achievement but also fosters a deeper appreciation of the natural world and our place within it.

Frequently Asked Questions

What are the New York State Earth Science Reference

Tables?

The New York State Earth Science Reference Tables are a set of resources provided by the New York State Education Department to assist students in understanding key concepts in Earth Science, including topics such as geology, meteorology, astronomy, and environmental science.

How can students effectively use the Earth Science Reference Tables for exam preparation?

Students can effectively use the Earth Science Reference Tables by familiarizing themselves with the layout, practicing with sample questions, and using the tables to reference important data, such as mineral properties and rock classifications, during their studies.

What types of information can be found in the Earth Science Reference Tables?

The Earth Science Reference Tables contain information on various topics, including maps, charts, graphs, physical properties of minerals and rocks, climate data, and the characteristics of celestial bodies, which are essential for Earth Science assessments.

Are the New York State Earth Science Reference Tables available online?

Yes, the New York State Earth Science Reference Tables are available online on the New York State Education Department's website, allowing students and educators to access them easily and incorporate them into their learning resources.

How often are the NYS Earth Science Reference Tables updated?

The NYS Earth Science Reference Tables are typically updated every few years to reflect new scientific information and educational standards; it is important for students and teachers to check for the latest versions to ensure they are using the most current data.

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