

physical setting earth science 2013 answers Manual

Understanding the Significance of Physical Setting Earth Science 2013 Answers

Physical setting earth science 2013 answers serve as a crucial resource for students and educators aiming to deepen their understanding of Earth's physical processes. These answers provide insight into the various concepts covered in the Earth Science curriculum, especially those featured in the 2013 exam. By exploring these solutions, learners can review key topics, clarify doubts, and prepare effectively for assessments. This article offers a comprehensive overview of the importance of these answers, the core topics they address, and strategies for utilizing them for optimal learning.

Overview of Physical Setting Earth Science 2013 Exam

What is the Physical Setting Earth Science Exam?

The Physical Setting Earth Science exam is a standardized assessment designed to evaluate students' understanding of fundamental Earth science concepts. It typically covers topics such as geology, meteorology, oceanography, astronomy, and environmental science. The 2013 version of this exam included multiple-choice questions, short answers, and extended response items that test students' grasp of scientific principles and their ability to apply them.

Purpose of the 2013 Answers

The answers from the 2013 exam serve multiple purposes:

- Study aid: Helping students review and prepare for future exams.
- Teaching resource: Assisting educators in identifying common misconceptions.
- Self-assessment: Allowing learners to gauge their understanding and identify areas for improvement.

Core Topics Covered in the 2013 Earth Science Exam and Answers

The 2013 Earth Science exam spans a broad range of topics. Here, we explore the main areas and the typical questions with their answers.

1. Geology and Earth's Structure

This section assesses knowledge about Earth's layers, plate tectonics, rocks, and geological processes.

- **Earth's layers:** Crust, mantle, outer core, inner core.
- **Plate tectonics:** Types of plate boundaries ? divergent, convergent, transform.
- **Rock cycle:** Processes transforming igneous, sedimentary, and metamorphic rocks.

Sample question:

Describe the process that forms sedimentary rocks.

Answer: Sedimentary rocks form through the deposition and compaction of sediments. Over time, layers of sediments are deposited in water or on land, then compacted and cemented to become solid rock.

2. Earthquakes and Seismic Activity

Questions focus on causes, effects, and measurement of earthquakes.

- Cause: Sudden release of energy along faults.
- Measurement: Richter scale and moment magnitude scale.
- Effects: Ground shaking, surface rupture, tsunamis.

Sample question:

What is the primary cause of most earthquakes?

Answer: The primary cause of most earthquakes is the movement of tectonic plates along faults, releasing accumulated stress.

3. Weather, Climate, and Atmosphere

Topics include atmospheric layers, weather patterns, and climate change.

- Layers: Troposphere, stratosphere, mesosphere, thermosphere, exosphere.
- Weather phenomena: Fronts, storms, precipitation.

- Climate change: Human impact, greenhouse effect.

Sample question:

Explain how the greenhouse effect influences Earth's temperature.

Answer: The greenhouse effect occurs when greenhouse gases trap heat in Earth's atmosphere, preventing it from escaping into space, which leads to an increase in global temperatures.

4. Oceans and Marine Processes

Questions address ocean currents, waves, and marine ecosystems.

- Ocean currents: Surface and deep currents driven by wind, density, and Earth's rotation.
- Wave formation: Wind energy transfer to water surface.
- Marine life: Biodiversity, habitats.

Sample question:

How do surface ocean currents affect climate?

Answer: Surface ocean currents transfer warm or cold water across the globe, influencing regional climates by regulating temperature and weather patterns.

5. Astronomy and Solar System

Includes celestial motions, phases of the moon, and planetary characteristics.

- Earth's rotation and revolution.
- Phases of the moon: New moon, crescent, quarter, gibbous, full moon.
- Planets: Characteristics and orbits.

Sample question:

What causes the phases of the moon?

Answer: The phases of the moon are caused by the changing relative positions of the Earth, Moon, and Sun, which alter the portion of the Moon illuminated and visible from Earth.

Strategies for Using the 2013 Earth Science Answers Effectively

To maximize learning, students should adopt specific strategies when reviewing these answers:

1. Active Engagement

- Try answering questions on your own before reviewing the solutions.
- Identify why certain answers are correct or incorrect.

2. Thematic Review

- Group questions by topic to reinforce understanding.
- Create concept maps linking related topics.

3. Practice and Repetition

- Use the answers to simulate test conditions.
- Revisit challenging questions multiple times.

4. Clarify Misconceptions

- Use answers as a starting point to research deeper explanations.
- Consult textbooks or reputable online resources for clarification.

Additional Resources to Complement the 2013 Answers

While the answers provide valuable study aids, supplement your review with other materials:

- Textbooks: Earth science textbooks aligned with curriculum standards.
- Online tutorials: Educational videos explaining complex concepts.
- Practice tests: Simulated exams to build confidence.
- Science labs: Hands-on experiments for experiential learning.

Common Challenges and How to Overcome Them

Many students encounter difficulties understanding certain Earth science concepts. Here are some

common challenges and solutions:

Understanding Plate Tectonics

- Challenge: Visualizing Earth's internal processes.
- Solution: Use models and animations to observe plate movements.

Interpreting Scientific Data

- Challenge: Analyzing graphs and charts.
- Solution: Practice reading and interpreting data from various sources.

Memorizing Scientific Terms

- Challenge: Remembering terminology and definitions.
- Solution: Use flashcards and mnemonic devices.

Conclusion: Leveraging the 2013 Answers for Success in Earth Science

The **physical setting earth science 2013 answers** are more than just solutions to exam questions?they are a gateway to understanding Earth's complex systems and processes. By systematically reviewing these answers, students can build a solid foundation of scientific knowledge, improve critical thinking skills, and enhance their performance on assessments. Remember to combine answer review with active learning strategies, supplementary resources, and hands-on experiences to achieve a comprehensive grasp of Earth science. With dedication and strategic study, mastering the concepts from the 2013 exam becomes an attainable goal, paving the way for academic success and a lifelong appreciation of our planet.

Physical Setting Earth Science 2013 Answers serve as a critical resource for students and educators aiming to understand the fundamental concepts of Earth science. These answers, typically derived from textbooks, review guides, and exam solutions, provide clarity and confidence in mastering complex topics like geology, meteorology, oceanography, and astronomy. The 2013 edition, in particular, has been widely referenced due to its comprehensive coverage and alignment with curriculum standards. In this review, we will explore the features, strengths, potential limitations, and overall value of the "Physical Setting Earth Science 2013 Answers," helping students and teachers decide how best to utilize this resource.

Overview of Physical Setting Earth Science 2013 Answers

The "Physical Setting Earth Science 2013 Answers" is designed to complement the curriculum for Earth science courses, especially those aligned with New York State standards. It offers detailed solutions to textbook questions, practice exams, and review exercises, ensuring learners can verify their understanding and identify areas needing improvement. This resource typically covers core topics such as Earth's structure, plate tectonics, mineralogy, weather patterns, climate, and astronomical phenomena.

Key features include:

- Step-by-step solutions to textbook questions.
- Clarification of complex concepts.
- Practice tests with answer keys.
- Visual aids like diagrams and charts.

Content Coverage and Curriculum Alignment

Comprehensive Topic Coverage

The 2013 edition encompasses a wide array of Earth science topics, which include:

- Earth's layers and composition.
- Plate tectonic theory.
- Mineral and rock identification.
- Earth's processes such as erosion, weathering, and volcanism.
- Meteorology, including weather patterns and climate.
- Oceanography, covering ocean currents and marine resources.
- Astronomy and celestial events.

This breadth ensures students are well-prepared for standardized assessments and classroom discussions.

Alignment with Curriculum Standards

The answers are tailored to meet the expectations of the 2013 curriculum standards, ensuring relevance and applicability. They align with key learning objectives, making them a valuable study companion for classroom and exam preparation.

Pros:

- Ensures curriculum compliance.
- Facilitates targeted studying.

Cons:

- May not include updates or recent scientific discoveries beyond 2013.
- Limited flexibility if curricula evolve.

Strengths of Physical Setting Earth Science 2013 Answers

Clarity and Detail in Explanations

One of the standout features is the clarity with which answers are presented. Solutions often break down complex processes into manageable steps, making it easier for students to follow reasoning and understand underlying concepts.

Visual Aids and Diagrams

The inclusion of diagrams, charts, and illustrations enhances comprehension. Visual representations of plate boundaries, rock cycle, weather patterns, and celestial movements are instrumental in reinforcing learning.

Practice Opportunities

The resource provides multiple practice questions and mock exams, enabling students to test their knowledge under exam-like conditions. The answer keys help in immediate self-assessment.

Ease of Use

Answers are organized logically, often mirroring textbook layouts, making navigation straightforward. Clear labeling and consistent formatting help students quickly locate answers to specific questions.

Features Summary:

- Detailed step-by-step solutions.
- Visual aids supporting textual explanations.

- Practice exams for self-assessment.
- Curriculum-aligned content.

Potential Limitations and Challenges

Limited Scope for Critical Thinking

While the answers excel at providing solutions, they may sometimes emphasize rote memorization over critical thinking. Students seeking to develop analytical skills might find the explanations somewhat directive, lacking open-ended reasoning.

Over-Reliance Risk

Students might become overly dependent on answer keys, potentially hindering their ability to solve problems independently or develop conceptual understanding.

Static Content and Updates

Since the answers are from 2013, they may not incorporate the latest scientific discoveries, technological advancements, or updated curriculum standards. This could lead to gaps in knowledge relevant to current Earth science understanding.

Language and Accessibility

The explanations are generally clear, but some may find technical jargon challenging without supplementary resources. Additionally, students with diverse learning styles might need more interactive or multimedia content.

How to Effectively Use the 2013 Answers for Learning

Complement with Textbook and Class Notes

Use the answers as a supplement rather than the sole resource. Cross-reference with your textbook and notes to ensure a comprehensive understanding.

Practice Without Looking at Answers

Attempt questions independently before consulting the solutions. This promotes problem-solving skills and retention.

Review Incorrect Responses Thoroughly

Analyze mistakes to identify misconceptions and clarify concepts.

Integrate with Online Resources and Labs

Augment learning by engaging with interactive simulations, videos, and laboratory experiments that reinforce theoretical knowledge.

Comparison with Other Resources

While the "Physical Setting Earth Science 2013 Answers" offers valuable solutions, students may benefit from integrating other resources such as:

- Up-to-date textbooks and scientific journals.
- Online educational platforms (e.g., Khan Academy, National Geographic).
- Classroom instruction and teacher-guided discussions.
- Hands-on laboratory activities.

Advantages of this resource:

- Specific focus on curriculum-aligned answers.
- Quick reference for exam preparation.
- Structured explanations.

Limitations:

- Lack of dynamic content.
- Potentially outdated information.
- Limited scope for exploratory learning.

Conclusion: Is It a Valuable Resource?

The "Physical Setting Earth Science 2013 Answers" is undeniably a valuable resource for students aiming to strengthen their grasp of Earth science concepts within the context of the 2013 curriculum standards. Its strengths lie in detailed solutions, visual aids, and practice opportunities, making it especially useful for exam preparation and self-assessment.

However, users should be mindful of its limitations, particularly the potential for over-reliance and the need for supplementary, current resources. When used judiciously alongside active learning

strategies, classroom instruction, and up-to-date scientific information, this resource can significantly enhance understanding and performance in Earth science.

Final recommendation: Incorporate the "Physical Setting Earth Science 2013 Answers" as part of a diversified study plan, ensuring a well-rounded and current grasp of Earth science principles.

QuestionAnswer What are the key concepts covered in the 'Physical Setting Earth Science 2013' exam? The exam primarily covers topics such as Earth's structure, plate tectonics, minerals and rocks, weather and climate, Earth's surface processes, and astronomical phenomena relevant to Earth science. How can I effectively find the answers to 'Physical Setting Earth Science 2013' practice questions? You can review official New York State Earth Science Regents exam resources, use reputable study guides, and practice with past exams to familiarize yourself with question formats and answers. What are common topics that appear in the '2013 answers' for Earth Science practice tests? Common topics include the rock cycle, Earth's layers, weather patterns, ocean currents, fossils, and the impact of human activity on Earth's systems. Are the 'Physical Setting Earth Science 2013 answers' useful for exam preparation? Yes, reviewing answer keys and explanations from past exams helps students understand question formats, improve their knowledge, and identify areas needing more study. Where can I find reliable resources for 'Physical Setting Earth Science 2013 answers' online? Reliable resources include the New York State Education Department's official website, educational platforms like Regents Prep, and reputable tutoring sites that provide past exam questions and solutions. How should I use the '2013 answers' to improve my understanding of Earth science concepts? Use the answers to check your responses, analyze explanations for each correct answer, and review related concepts to deepen your understanding and prepare effectively for exams.

Related keywords: earth science, physical setting, 2013 answers, geology, earth processes, scientific methods, environmental science, natural resources, rock cycle, scientific investigations

Physical Science Creative Teaching Press Physical Changes

Physical science creative teaching press physical changes is a vital topic in the realm of science education, especially for educators aiming to foster understanding and curiosity about the fundamental nature of matter. Understanding physical changes is essential for students to grasp how substances transform without altering their chemical composition. This article explores the concept of physical changes in physical science, emphasizing creative teaching methods, key principles, real-world examples, and effective strategies to make learning engaging and comprehensive.

Understanding Physical Changes in Physical Science

What Are Physical Changes?

Physical changes refer to alterations in the form, appearance, or state of a substance that do not modify its chemical identity. These changes are often reversible, meaning the original substance can typically be recovered without chemical reactions taking place.

Examples of physical changes include:

- Melting ice into water
- Boiling water into vapor
- Cutting paper
- Dissolving sugar in tea
- Crushing a can

Key characteristics of physical changes:

- No new substances formed
- Usually reversible
- Involve changes in physical properties like shape, size, or phase

Difference Between Physical and Chemical Changes

While physical changes involve no change in chemical composition, chemical changes result in the formation of new substances with different properties.

Aspect	Physical Change	Chemical Change
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Definition	Change in physical form or state	Formation of new substances
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Reversibility	Usually reversible	Usually irreversible
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Example	Melting ice	Burning wood
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Creative Teaching Strategies for Physical Changes

Engaging students in understanding physical changes requires innovative and creative teaching methods. Here are some effective strategies:

Hands-On Experiments and Demonstrations

Practical activities help students visualize and understand physical changes concretely.

Examples include:

- Melting ice cubes and observing the change
- Evaporating saltwater
- Crumpling aluminum foil
- Freezing water to form ice
- Dissolving sugar and salt

Tips for effective experiments:

- Use clear, simple materials
- Encourage students to record observations
- Discuss reversible vs. irreversible changes

Interactive Visual Aids and Simulations

Utilize multimedia tools like animations and virtual labs to demonstrate physical changes that are difficult to observe directly.

Benefits include:

- Enhancing visualization skills
- Providing safe environments for experimentation
- Catering to diverse learning styles

Storytelling and Real-Life Contexts

Integrate stories or real-world examples to make the concept relatable.

Examples:

- How ice melts outside on a sunny day
- How a puddle evaporates after rain
- The process of freezing water into ice cubes at home

Creative Classroom Activities

Engage students through activities that promote exploration and discussion.

Ideas include:

- "Change Detective" game where students identify physical changes around them
- Group projects on different physical changes observed in nature
- Art projects like sculpting or paper folding to demonstrate physical transformations

Key Concepts and Principles of Physical Changes

States of Matter and Phase Changes

Understanding how matter transitions between solid, liquid, and gas states is central to physical science.

Common phase changes:

- Melting (solid to liquid)
- Freezing (liquid to solid)
- Vaporization or boiling (liquid to gas)
- Condensation (gas to liquid)
- Sublimation (solid to gas)

Teaching tip: Use diagrams and models to illustrate these transitions dynamically.

Properties of Materials During Physical Changes

Monitor how physical properties such as shape, volume, density, and color change during physical transformations.

Examples:

- Volume expansion of metal when heated
- Changes in shape during molding or crushing
- Color changes due to temperature effects

Reversibility and Conservation of Mass

Most physical changes are reversible and adhere to the law of conservation of mass, meaning the total mass remains constant during the change.

Discussion points:

- How physical changes do not alter the chemical identity
- Examples demonstrating conservation of mass in physical changes

Real-World Applications of Physical Changes

Understanding physical changes has numerous applications across industries and daily life.

In Manufacturing and Industry

- Metal forging and shaping
- Plastic molding
- Food processing (freezing, boiling, drying)

In Nature and Environment

- Water cycle processes like evaporation and condensation
- Glacial melting
- Weathering of rocks

In Daily Life

- Cooking (boiling, freezing)
- Cleaning (dissolving detergents)
- Recycling materials like aluminum cans

Assessment and Evaluation Strategies

To gauge understanding, educators can implement various assessment tools:

- Quizzes and Worksheets: Focused on identifying physical changes
- Observation and Lab Reports: Documenting experiments
- Group Discussions: Explaining processes and concepts
- Creative Projects: Designing models or presentations illustrating physical changes

Challenges and Solutions in Teaching Physical Changes

Common challenges include:

- Abstract concepts difficult for students to grasp
- Confusing physical changes with chemical changes
- Limited access to laboratory resources

Solutions:

- Use visual aids and models extensively
- Reinforce concepts with real-life examples
- Incorporate virtual labs and simulations
- Encourage critical thinking and questioning

Conclusion

Teaching physical science with a focus on physical changes demands creativity, engagement, and clarity. By employing hands-on experiments, visual tools, storytelling, and real-world contexts, educators can foster a deep understanding of physical changes among students. Recognizing the importance of these concepts not only enhances scientific literacy but also prepares learners to appreciate the dynamic nature of matter in everyday life and various industries. As educators continue to innovate in their teaching approaches, the topic of physical changes remains a fundamental and exciting area of physical science education.

Keywords for SEO Optimization:

- Physical science
- Creative teaching methods
- Physical changes

- Science education
- Phase changes
- Reversible changes
- Hands-on science experiments
- Teaching physical science effectively
- Real-world science applications

Physical Science Creative Teaching Press Physical Changes: A Comprehensive Guide to Engaging Science Education

In the realm of physical science education, understanding the concept of physical changes is fundamental. When educators utilize resources from the Creative Teaching Press, particularly their materials on physical science, they open doors to innovative, hands-on learning experiences. This guide delves into the essence of physical changes, exploring how teachers can effectively introduce, demonstrate, and assess this critical scientific concept using creative teaching strategies and resources.

Understanding Physical Changes in Science

Physical changes refer to alterations in the state or appearance of a substance without changing its chemical composition. These changes are often reversible and are fundamental to students' grasp of material properties, states of matter, and the nature of physical phenomena.

Key Characteristics of Physical Changes:

- No new substance forms
- Usually reversible
- Changes involve physical properties like shape, size, phase, or texture
- Do not affect the chemical identity of the substance

Examples include melting, freezing, boiling, condensation, breaking, and dissolving.

Why Focus on Physical Changes?

Teaching about physical changes lays the groundwork for understanding more complex topics like chemical reactions and molecular structure. It also encourages observational skills, critical thinking, and science process skills such as hypothesizing, experimenting, and analyzing.

Using creative teaching methods, including hands-on activities, visual aids, and real-world applications, enhances student engagement and comprehension.

Effective Strategies for Teaching Physical Changes

- Hands-On Experiments and Demonstrations

Experiments are the cornerstone of science teaching. Engaging students with tangible experiences helps solidify abstract concepts.

Sample Activities:

- Melting Ice: Show how ice melts into water when heated, emphasizing phase change from solid to liquid.
- Dissolving Salt or Sugar: Demonstrate solubility and how substances can undergo physical changes without chemical reactions.
- Crushing or Breaking: Break chalk or plastic to illustrate physical alteration, emphasizing that the material remains the same.

Tips:

- Use clear, simple materials.
- Encourage students to record observations and hypothesize outcomes.
- Discuss reversibility after each activity.

- Visual Aids and Graphic Organizers

Visual tools help students visualize the concept and organize their understanding.

Examples:

- Charts comparing physical and chemical changes
- Diagrams illustrating phase changes
- Flowcharts depicting the steps in various physical processes

- Incorporate Creative Media and Resources

Creative Teaching Press offers a suite of resources, including posters, activity books, and digital

content, designed to make learning about physical changes interactive and memorable.

Utilize:

- Illustrated posters showing different physical changes
- Interactive worksheets that challenge students to classify changes
- Story-based scenarios that involve physical change concepts

- Real-Life Applications and Contextual Learning

Connecting science to students' everyday experiences makes lessons relevant and meaningful.

Examples:

- Melting ice in a beverage
- Freezing water to make ice cubes
- Dissolving sugar in coffee or tea
- Physical alterations in manufacturing or cooking

Classroom Activities and Lesson Plans

Here's a sample outline for a comprehensive lesson:

Lesson Title: Exploring Physical Changes

Objectives:

- Define physical change
- Identify different types of physical changes
- Conduct simple experiments to observe physical changes

Materials Needed:

- Ice cubes
- Water
- Salt

- Sugar
- Plastic or glass containers
- Crayons or chalk
- Safety goggles

Procedure:

- Introduction (10 minutes): Discuss what physical changes are, using visuals.
- Demonstration (15 minutes): Melting ice and dissolving salt/sugar.
- Student Activity (30 minutes): Students perform experiments:
 - Observe ice melting
 - Dissolve sugar in water
 - Break chalk into pieces
 - Freeze water and observe ice formation
- Discussion (15 minutes): Students share observations, compare results, and classify each change.
- Assessment (10 minutes): Quiz or worksheet to reinforce understanding.

Assessment Tips:

- Use questioning strategies to assess understanding.
- Have students draw diagrams of their experiments and label physical changes.

Assessing Understanding of Physical Changes

Assessment should gauge both conceptual understanding and practical skills.

Methods:

- Observation during activities
- Student reflections and explanations
- Quizzes with multiple-choice and short-answer questions
- Concept maps illustrating types of changes

Common Misconceptions and How to Address Them

- Misconception: Physical changes always involve a change in the substance's chemical identity.

Correction: Emphasize that physical changes do not alter the chemical structure, using examples like melting ice or tearing paper.

- Misconception: All physical changes are reversible.

Correction: Clarify that some physical changes, like breaking or cutting, are reversible, but others, like tearing or dissolving, may not be easily reversible.

Integrating Creative Teaching Press Resources

Creative Teaching Press provides various materials tailored for physical science instruction, which can elevate your teaching approach:

- Activity Books: Ready-made experiments and activities that align with standards.
- Posters and Visuals: Engaging images that reinforce concepts.
- Interactive Worksheets: Opportunities for students to classify and analyze physical changes.
- Digital Resources: Online games and quizzes to supplement lessons.

Strategies for Integration:

- Use posters as classroom decor to continually reinforce concepts.
- Incorporate activity books into small-group work or centers.
- Assign digital quizzes as formative assessments.

Extending Learning Beyond the Classroom

Encourage students to observe physical changes in their environment.

Assignments:

- Keep a science journal recording physical changes observed at home or outdoors.
- Research and present on real-world applications of physical changes in industries.

- Design their own experiments related to physical changes and share findings.

Conclusion

Understanding physical changes is a vital component of physical science education. By leveraging creative teaching strategies and resources, such as those provided by Creative Teaching Press, educators can foster curiosity, deepen understanding, and nurture scientific literacy among students. From hands-on experiments to visual aids and real-world connections, teaching physical changes effectively prepares students for more advanced topics and encourages a lifelong appreciation for science.

Remember: The goal is to make science accessible, engaging, and relevant. Through creative teaching approaches, educators can inspire the next generation of scientists and thinkers to explore the fascinating world of physical science.

QuestionAnswer What are some effective creative teaching strategies for explaining physical changes in science classes? Creative strategies include hands-on experiments, visual demonstrations, interactive models, and storytelling to help students grasp concepts like melting, freezing, and condensation in engaging ways. How can teachers make the concept of physical changes more relatable to students? Teachers can use everyday examples such as ice melting, boiling water, or folding paper to illustrate physical changes, making the concepts more familiar and easier to understand. What role does the Physical Science Creative Teaching Press play in improving science education? The Physical Science Creative Teaching Press provides innovative resources, lesson plans, and activities designed to foster creativity and enhance student understanding of physical science concepts like physical changes. What are some common misconceptions students have about physical changes, and how can creative teaching address them? Students often confuse physical changes with chemical changes. Creative teaching methods like experiments and visual aids can clarify that physical changes do not alter the substance's identity, helping to correct misconceptions. Can technology enhance teaching about physical changes in physical science? If so, how? Yes, technology such as virtual labs, simulations, and interactive videos can provide dynamic and visual representations of physical changes, making abstract concepts more accessible and engaging for students.

Related keywords: physical science, creative teaching, physical changes, science education, hands-on experiments, teaching resources, science curriculum, classroom activities, scientific concepts, educational publishing

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