

SAMPLE HISTORY AND PHYSICAL Tutorial

Sample history and physical is an essential component of medical documentation that provides a comprehensive overview of a patient's health status. It serves as a foundational element in clinical practice, guiding diagnosis, treatment planning, and continuity of care. Whether you're a healthcare professional preparing a medical record or a student learning the ropes, understanding how to effectively document a sample history and physical (H&P) is crucial. This article explores the key components, best practices, and importance of a well-structured H&P to optimize patient care and enhance clinical documentation.

Understanding the Purpose of a Sample History and Physical

A history and physical examination are performed to gather detailed information about a patient's health, identify potential health issues, and establish a baseline for ongoing management. The primary goals include:

- Gathering comprehensive patient history
- Conducting a thorough physical examination
- Documenting findings systematically
- Facilitating accurate diagnosis and treatment planning
- Ensuring legal and billing compliance

A properly documented sample H&P provides clarity and continuity, enhances communication among healthcare providers, and serves as a legal record of the patient's condition at a specific point in time.

Components of a Sample History and Physical

A standard H&P typically encompasses two main sections: the Patient History and the Physical Examination. Each section has specific components that collectively offer a holistic view of the patient's health.

Patient History

The patient history involves collecting subjective information provided by the patient or their guardians. It includes several key elements:

- **Chief Complaint (CC):** The primary reason the patient seeks medical attention, expressed in their own words.
- **History of Present Illness (HPI):** A detailed narrative describing the current symptoms, including onset, duration, intensity, quality, associated factors, and previous interventions.
- **Past Medical History (PMH):** Information about previous illnesses, surgeries, hospitalizations, and ongoing medical conditions.
- **Medication History:** Current and past medications, including dosages and adherence.
- **Allergies:** Known drug, food, or environmental allergies and the reactions experienced.
- **Family History (FH):** Health status and significant illnesses among immediate family members.
- **Social History (SH):** Lifestyle factors such as smoking, alcohol, drug use, occupation, sexual activity, and support systems.
- **Review of Systems (ROS):** A systematic inquiry about symptoms across various organ systems to uncover relevant health issues not initially mentioned.

Physical Examination

The physical exam involves an objective assessment of the patient, documented through findings obtained during inspection, palpation, percussion, and auscultation. It generally covers:

- **General Appearance:** Overall impression, including level of distress, nutritional status, and consciousness.
- **Vital Signs:** Blood pressure, heart rate, respiratory rate, temperature, and oxygen saturation.
- **Head and Neck:** Examination of the scalp, skull, eyes, ears, nose, throat, and lymph nodes.
- **Cardiovascular System:** Heart sounds, rhythm, murmurs, and peripheral pulses.
- **Respiratory System:** Lung auscultation, symmetry, breath sounds, and respiratory effort.
- **Abdomen:** Inspection, palpation, percussion, and auscultation to assess organs and detect abnormalities.
- **Musculoskeletal System:** Range of motion, joint stability, and muscle strength.
- **Neurological System:** Mental status, cranial nerves, motor and sensory function, reflexes, and coordination.
- **Skin:** Inspection for rashes, lesions, wounds, or other abnormalities.

Best Practices for Documenting a Sample H&P

Accurate and comprehensive documentation of a sample H&P is vital for effective patient care and legal purposes. Here are some best practices:

- **Use Clear and Concise Language:** Avoid jargon; be specific and precise in descriptions.
- **Follow a Logical Structure:** Organize information systematically to enhance readability.

- **Include All Relevant Details:** Capture pertinent positives and negatives to avoid missing important clues.
- **Be Objective:** Document findings without personal bias or assumptions.
- **Use Standardized Terminology:** Employ accepted medical terminology for clarity and consistency.
- **Ensure Legibility and Completeness:** Handwritten notes must be legible; electronic records should be complete and free of errors.
- **Incorporate Patient Quotes:** When relevant, include direct quotations from the patient for clarity.

Sample H&P Template for Medical Documentation

While formats can vary depending on institutional policies, a typical sample H&P template includes:

Patient Identification

- Name:
- Age:
- Gender:
- Medical Record Number:
- Date of Admission/Visit:

Chief Complaint

[Brief statement of the primary concern]

History of Present Illness

[Detailed description of current symptoms]

Past Medical History

[Prior illnesses, surgeries, hospitalizations]

Medications and Allergies

[List current medications and known allergies]

Family and Social History

[Health history of family members and lifestyle factors]

Review of Systems

[Systematic symptom review]

Physical Examination Findings

[Detailed findings organized by body system]

Importance of a Well-Prepared Sample H&P

A meticulously prepared sample history and physical exam document benefits multiple stakeholders:

- Patients: Ensures accurate diagnosis and personalized care.
- Clinicians: Facilitates effective communication and reduces errors.
- Healthcare Teams: Promotes coordinated care and shared understanding.
- Legal and Billing Purposes: Serves as a legal record and supports billing and coding processes.
- Educational Use: Provides a valuable learning tool for medical students and residents.

Conclusion

A comprehensive and well-structured sample history and physical form is indispensable in clinical practice. It consolidates subjective and objective data, guiding diagnosis and treatment decisions while ensuring clarity and legal compliance. Healthcare providers should prioritize meticulous documentation, adhering to best practices and using standardized formats to optimize patient outcomes. Whether for routine check-ups, urgent care, or complex cases, mastering the art of creating an effective sample H&P is fundamental to quality medical care.

By understanding the components, organization, and importance of a detailed history and physical, clinicians can enhance their documentation skills, ultimately improving patient care quality and safety.

Sample History and Physical: An In-Depth Examination of Its Role, Structure, and Significance in Clinical Practice

The sample history and physical (H&P) stands as a cornerstone of clinical medicine, serving as the foundational tool through which healthcare providers gather essential information to diagnose, manage, and monitor patient health. Rooted in centuries of medical tradition, the H&P remains a vital component of patient evaluation despite advances in diagnostic technology. This

comprehensive review explores the history, structure, and significance of the H&P, highlighting its enduring relevance in modern medicine.

Historical Evolution of the History and Physical Examination

Origins in Ancient Medicine

The practice of systematic patient examination dates back to ancient civilizations. The Hippocratic Corpus (circa 5th century BCE) emphasized the importance of careful observation and patient history-taking. Hippocrates advocated for understanding the patient's symptoms, lifestyle, and environment as part of diagnosis, laying the groundwork for the H&P.

Medieval and Renaissance Contributions

During the Middle Ages, medical practice became more institutionalized, with physicians performing physical examinations such as palpation, auscultation, and inspection. Notable figures like Avicenna in the Islamic Golden Age advanced systematic approaches to clinical assessment.

19th Century Formalization

The 19th century saw the formalization of clinical examination techniques. Prominent physicians like Pierre Louis and William Osler emphasized the importance of a thorough history and physical in diagnosis. William Osler, often called the "Father of Modern Medicine," famously stated, "The good physician treats the disease; the great physician treats the patient who has the disease," emphasizing the holistic nature of the H&P.

Technological Innovations and the 20th Century

While technological advances such as X-rays, laboratory testing, and imaging enhanced diagnostic capabilities, the core principles of history and physical remained central. The 20th century also saw the development of standardized documentation and teaching frameworks to ensure consistency and comprehensiveness.

Components of the Sample History and Physical

A well-structured H&P comprises several key components, each contributing vital information. The process involves systematic inquiry into the patient's history followed by a thorough physical exam.

History Taking

The history provides context, subjective data, and the patient's perspective. It typically includes:

- **Chief Complaint (CC):** The primary reason for the visit, expressed in the patient's own words.
- **History of Present Illness (HPI):** A detailed account of symptoms related to the CC, including onset, duration, progression, severity, and associated factors.
- **Past Medical History (PMH):** Previous illnesses, surgeries, hospitalizations, and chronic conditions.
- **Medication History:** Current and past medications, including dosages and adherence.
- **Allergies:** Drug, food, or environmental allergies and reactions.
- **Family History:** Genetic predispositions, hereditary diseases.
- **Social History:** Lifestyle factors such as smoking, alcohol, drug use, occupation, and living environment.
- **Review of Systems (ROS):** A systematic review of symptoms across different organ systems to uncover additional issues.

Physical Examination

The physical exam involves objective assessment, often performed in a head-to-toe sequence, including:

- **General Appearance:** Level of consciousness, distress, nutritional status.
- **Vital Signs:** Blood pressure, heart rate, respiratory rate, temperature, oxygen saturation.
- **Head and Neck:** Inspection of the scalp, face, eyes, ears, nose, throat, lymph nodes.
- **Cardiovascular System:** Auscultation of heart sounds, assessment of pulses, inspection for edema.
- **Respiratory System:** Lung auscultation, observing breathing patterns.
- **Abdomen:** Inspection, palpation, percussion, auscultation.
- **Musculoskeletal System:** Range of motion, joint examination, muscle strength.
- **Neurological Exam:** Mental status, cranial nerves, motor and sensory function, reflexes.

Significance of the Sample History and Physical in Clinical Practice

Diagnostic Accuracy

The H&P remains the initial step in establishing a differential diagnosis. A comprehensive history can often narrow possibilities, guide appropriate testing, and sometimes lead to immediate conclusions, especially in classic presentations.

Patient-Physician Relationship

Engaging patients through detailed history-taking fosters trust, enhances communication, and encourages patient participation in care decisions. It also provides insights into social and

psychological factors influencing health.

Legal and Documentation Purposes

A thorough H&P forms part of the legal record, demonstrating that appropriate evaluation was performed. Proper documentation supports continuity of care and serves as evidence in medico-legal contexts.

Educational Value

For medical trainees, mastering the art of history-taking and physical examination is essential for developing clinical reasoning and diagnostic skills.

Limitations and Challenges

Despite its importance, the H&P faces challenges such as:

- Time constraints in busy clinical settings.
- Variability in patient communication skills.
- Inter-examiner differences in examination techniques.
- Over-reliance on technology potentially diminishing clinical skills.

Modern Innovations and Future Directions

Structured and Standardized H&Ps

Electronic health records (EHRs) often incorporate templates that standardize the H&P, promoting completeness and facilitating data sharing.

Telemedicine and Remote Assessments

The rise of telehealth has challenged traditional physical exams, leading to innovations such as guided self-examinations, remote auscultation devices, and video consultations.

Integration with Diagnostic Tools

Emerging technologies like point-of-care ultrasound, portable devices, and AI-driven decision support are augmenting traditional H&P, enhancing diagnostic accuracy.

Training and Skill Preservation

Medical education emphasizes teaching the art of history and physical, recognizing that these skills are vital even in an era dominated by laboratory and imaging tests.

Conclusion

The sample history and physical remains a fundamental aspect of clinical medicine, embodying centuries of medical wisdom and human connection. Its structured approach allows clinicians to gather vital information, formulate differential diagnoses, and establish effective treatment plans. While technological advances have transformed diagnostic processes, the core principles of a thorough history and physical continue to be indispensable. Preserving and refining these skills are essential for delivering empathetic, accurate, and holistic patient care in the evolving landscape of medicine.

This comprehensive review underscores that the H&P is not merely a procedural formality but an art that synthesizes scientific knowledge with humanistic care. As medicine progresses, the enduring value of a meticulous history and physical examination remains unequivocal—an essential pillar supporting the edifice of effective healthcare.

Question What is the purpose of a sample history and physical examination? A sample history and physical examination helps establish a patient's baseline health status, identify potential health issues, and guide further diagnostic testing and treatment planning. **Answer** What are the key components included in a sample history? A sample history typically includes chief complaint, history of present illness, past medical history, medication use, allergies, family history, social history, and review of systems. How does a physical examination complement the patient history? The physical examination provides objective findings that support or clarify the information obtained from the patient's history, aiding in accurate diagnosis and assessment. What are common challenges faced when documenting a sample history and physical? Challenges include ensuring completeness, avoiding bias, maintaining clarity, and accurately capturing subtle findings, especially in busy clinical settings. How has electronic health records (EHR) impacted the documentation of history and physicals? EHRs facilitate standardized templates, improve accessibility, and enhance documentation accuracy, but can sometimes lead to copy-paste errors or overly standardized notes. What are the current trends in conducting and documenting sample history and physicals? Recent trends include the use of structured templates, integration of point-of-care tools, telemedicine assessments, and incorporating patient-reported outcomes. Why is it important to tailor the history and physical to specific specialties? Different specialties focus on specific organ systems or issues, so customizing the history and physical ensures relevant data is collected efficiently for accurate diagnosis. How can medical students and residents improve their skills in taking history and performing physical exams? Through repeated practice, simulation training, feedback from experienced clinicians, and staying updated with current guidelines and best practices. What role does cultural competence play in conducting a history and physical? Cultural competence ensures respectful, sensitive, and effective communication, leading to more accurate histories and better

patient rapport and compliance.

Related keywords: medical documentation, patient assessment, clinical notes, physical examination, medical history, patient record, physician notes, clinical documentation, patient evaluation, medical report

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 |

|-----|-----|-----|

| Definition | Change in physical form or state | Formation of new substances |

| Reversibility | Usually reversible | Usually irreversible |

| Example | Melting ice | Burning wood |

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

Read the full article online: [PHYSICAL SCIENCE CREATIVE TEACHING PRESS PHYSICAL CHANGES](#)