NES ELEMENTARY EDUCATION SUBTEST 2 PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

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How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

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Questions

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1. What is the result of exponentiating a power?

A. You add the bases

B. You multiply the bases

C. You multiply the exponents

D. You subtract the exponents

2. What is chemical energy?

A. Energy from heat

B. Energy associated with atomic bonds

C. Energy generated by sunlight

D. Energy that powers electrical devices

3. What happens to molecules during convection when they are heated?

A. They remain stationary and retain their position

B. They cool down and sink

C. They expand and rise up

D. They break apart into smaller molecules

4. What does Newton's First Law of Motion state?

A. An object in motion stays in motion unless acted upon

B. For every action, there is an equal and opposite reaction

C. An object at rest remains at rest unless acted upon by a force

D. Both A and C

5. What does the identity property of addition specify?

A. Every number can be paired with its inverse.

B. Adding zero to a number does not change its value.

C. The sum is the same when grouped differently.

D. Numbers can be renumbered without changing the outcome.

6. What electrical phenomenon can be felt when touching a doorknob after rubbing a shoe on a carpet?

A. Static electricity shock

B. Current electricity shock

C. Voltage shock

D. Magnetic shock

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7. What is the product of any nonzero integer and its unique reciprocal?

A. 0

B. 1

C. -1

D. The integer itself

8. Which type of organisms obtain energy by eating plants or other animals?

A. Autotrophic organisms

B. Heterotrophic organisms

C. Prokaryotic organisms

D. Eukaryotic organisms

9. What is the value of 10 to the -2 power?

A. 0.1

B. 0.01

C. 1

D. 10

10. What phase follows the New Moon as more of the moon's surface becomes visible?

A. Waning phase

B. Full Moon phase

C. Waxing phase

D. Quarter phase

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Answers

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1. C
2. B
3. C
4. D
5. B
6. A
7. B
8. B
9. B
10. C

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Explanations

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1. What is the result of exponentiating a power?

A. You add the bases

B. You multiply the bases

C. You multiply the exponents

D. You subtract the exponents

Exponentiating a power involves raising a power to another power. This operation follows the mathematical rule where you multiply the exponents. For instance, if you have \((a^m)^n \), it simplifies to \(a^{m \cdot n} \). This rule stems from the definition of exponentiation itself. When you multiply powers with the same base, you add the exponents. Therefore, the logical extension when raising a power to another power is to multiply the existing exponent by the new exponent, leading to the correct understanding and application of the rules of exponents. This concept is fundamental in algebra, particularly when working with exponents in expressions and equations, allowing for simplification and manipulation of powers in a systematic manner.

2. What is chemical energy?

A. Energy from heat

B. Energy associated with atomic bonds

C. Energy generated by sunlight

D. Energy that powers electrical devices

Chemical energy is correctly defined as the energy associated with atomic bonds. This form of energy is stored in the arrangement of atoms within molecules and is released or absorbed during a chemical reaction. When chemical bonds between atoms in a molecule break or form, they either release energy (exothermic reactions) or require energy to be inputted (endothermic reactions). In essence, chemical energy is a type of potential energy that has the capacity to do work due to the position and configuration of atoms. For instance, when a fuel source such as gasoline is burned, the chemical energy stored in its molecular bonds is released as heat and light energy, which can then power engines or generate electricity. The other options do refer to different forms of energy but do not encapsulate the specific nature of chemical energy. Energy from heat relates to thermal energy, energy generated by sunlight refers to solar energy, and energy that powers electrical devices pertains to electrical energy. Each of these options describes a different aspect of energy rather than the specific concept of chemical energy, which is fundamentally linked to the bonds between atoms and molecules.

3. What happens to molecules during convection when they are heated?

A. They remain stationary and retain their position

B. They cool down and sink

C. They expand and rise up

D. They break apart into smaller molecules

When molecules are heated during convection, they gain energy, which causes them to move more vigorously. This increase in kinetic energy results in the expansion of the molecules, making them less dense compared to the surrounding cooler molecules. As a result, these warmer, less dense molecules rise. This behavior is fundamental to the process of convection, which is a mode of heat transfer along with conduction and radiation. In a convection current, as the warm air or liquid rises, it creates a void that is filled by cooler, denser molecules that sink to take their place. This continuous cycle of rising warm molecules and sinking cooler molecules is what drives convection, resulting in the efficient transfer of heat within fluids. This explanation emphasizes how the physical properties of molecules change as they are heated, leading to their movement within a medium.

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4. What does Newton's First Law of Motion state?

A. An object in motion stays in motion unless acted upon

B. For every action, there is an equal and opposite reaction

C. An object at rest remains at rest unless acted upon by a force

D. Both A and C

Newton's First Law of Motion states that an object will remain at rest or in uniform motion in a straight line unless acted upon by an external force. This law can be captured in two key ideas: first, that an object in motion stays in motion, and second, that an object at rest remains at rest. Both elements reflect the principle of inertia, which describes an object's tendency to resist changes in its state of motion. The first part, "an object in motion stays in motion unless acted upon," emphasizes that once an object is in motion, it will continue to move unless something causes it to stop or change direction. The second part, "an object at rest remains at rest unless acted upon by a force," reinforces the concept that a stationary object will not begin to move without a force influencing its state. Thus, choosing both aspects together as the correct answer captures the essence of Newton's First Law. This comprehensive understanding of inertia provides a foundational principle for further study in physics.

5. What does the identity property of addition specify?

A. Every number can be paired with its inverse.

B. Adding zero to a number does not change its value.

C. The sum is the same when grouped differently.

D. Numbers can be renumbered without changing the outcome.

The identity property of addition states that adding zero to any number does not change the value of that number. In mathematical terms, for any number \(a \), the equation is expressed as \(a + 0 = a \). This property illustrates that zero acts as an "identity" element for addition, meaning it does not affect the sum when added to other numbers. Understanding this property is fundamental to arithmetic and lays the groundwork for more complex mathematical concepts. For instance, it is crucial in simplifying expressions and solving equations, as it enables students to recognize that zero is essentially a neutral number in the context of addition.

6. What electrical phenomenon can be felt when touching a doorknob after rubbing a shoe on a carpet?

A. Static electricity shock

B. Current electricity shock

C. Voltage shock

D. Magnetic shock

The sensation felt when touching a doorknob after rubbing a shoe on a carpet is a result of static electricity shock. This phenomenon occurs due to the buildup of electric charge on the surface of objects, which can happen through processes such as friction. When you rub your shoe on the carpet, electrons are transferred from one surface to another, causing you to accumulate an excess of electric charge. When you then touch a doorknob, which is a conductor, the stored electric charge discharges quickly, and this sudden flow of electricity is felt as a shock. This is a common experience during dry conditions when the air is less conductive, leading to a greater accumulation of static charge. The other types of electricity mentioned in the choices do not apply in this context: current electricity refers to the flow of electric charge through a conductor in a circuit, voltage shock relates to the potential difference causing current to flow, and magnetic shock is not a recognized electrical phenomenon in this context. Thus, the sensation experienced in this scenario is accurately described as a static electricity shock.

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7. What is the product of any nonzero integer and its unique reciprocal?

A. 0

B. 1

C. -1

D. The integer itself

The product of any nonzero integer and its unique reciprocal is always 1. This is a fundamental property of multiplicative inverses in mathematics. For any integer \(n \) (where \(n \) is not zero), the reciprocal is defined as \(\frac{1}{n} \). When you multiply \(n \) by its reciprocal \(\frac{1}{n} \), the result is: \[n \times \frac{1}{n} = 1 \] This property applies to any nonzero integer, making it universally true. Therefore, the statement holds for all integers with the condition that they are not zero. In contrast, considering the other options: the product cannot be 0 since this would imply at least one of the factors is zero, which contradicts the premise that the integer is nonzero. Similarly, the product cannot be -1 because \(n \) and \(\frac{1}{n} \) are both consistently positive or consistently negative for nonzero integers, leading to their product being positive. Additionally, the product cannot be the integer itself, as the operation involving multiplication by the reciprocal yields 1, not the original integer. Thus, the correct assertion is

8. Which type of organisms obtain energy by eating plants or other animals?

A. Autotrophic organisms

B. Heterotrophic organisms

C. Prokaryotic organisms

D. Eukaryotic organisms

Heterotrophic organisms are those that obtain energy by consuming other organisms, which can include both plants and animals. Unlike autotrophic organisms, which generate their own energy through processes like photosynthesis, heterotrophs rely on organic material produced by other living things. This category includes a vast range of organisms, such as herbivores that eat plants, carnivores that eat other animals, and omnivores that consume both. Understanding this distinction is crucial, as it underpins the different roles that organisms play in ecosystems, such as producers and consumers. Prokaryotic and eukaryotic organisms refer to the cellular structure of the organisms—prokaryotes lack a defined nucleus, while eukaryotes have a nucleus. These classifications do not inherently indicate how an organism obtains its energy.

9. What is the value of 10 to the -2 power?

A. 0.1

B. 0.01

C. 1

D. 10

To determine the value of 10 raised to the power of -2, it's important to understand the concept of negative exponents. A negative exponent indicates that the base should be taken as the reciprocal and then raised to the positive corresponding exponent. In this case, 10 to the -2 power can be expressed as the reciprocal of 10 squared. This means: \[10^{-2} = \frac{1}{10^2} \] Calculating \(10^2\): \[10^2 = 10 \times 10 = 100 \] Now, taking the reciprocal of 100 gives: \[\frac{1}{100} = 0.01 \] Thus, the value of 10 to the -2 power equals 0.01, which supports the conclusion that the correct answer is indeed 0.01. Understanding negative exponents in this way is crucial in mathematics, especially in dealing with expressions involving powers and roots.

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10. What phase follows the New Moon as more of the moon's surface becomes visible?

A. Waning phase

B. Full Moon phase

C. Waxing phase

D. Quarter phase

The phase that follows the New Moon is the Waxing phase. During this time, the moon gradually becomes more illuminated as it moves in its orbit around the Earth. The term "waxing" specifically refers to the increasing visibility of the moon's surface as it transitions from the New Moon phase, where the moon is not visible, to the Full Moon phase, where it is fully illuminated. As the Waxing phase progresses, more of the moon's surface reflects sunlight, culminating in the Full Moon phase. This visible change occurs because the moon orbits Earth, and as it does so, different portions of its surface are illuminated by the Sun. Understanding the Waxing phase is essential in grasping how the moon cycles through its phases and how they are observed from Earth.

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Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

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We wish you the very best on your exam journey. You've got this!

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