

NWEA SCIENCE MEASURES OF ACADEMIC PROGRESS (MAP) PRACTICE TEST (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.

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!

Questions

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- 1. Which gas is most abundant in the Earth's atmosphere?**
 - A. Oxygen
 - B. Nitrogen
 - C. Carbon dioxide
 - D. Argon
- 2. What process do organisms use to convert glucose into energy?**
 - A. Photosynthesis
 - B. Cellular respiration
 - C. Fermentation
 - D. Digestion
- 3. Which of the following describes velocity?**
 - A. The change of position over time
 - B. Speed without direction
 - C. A variable that tells both speed and direction
 - D. The total distance traveled
- 4. What is homeostasis?**
 - A. The process of cellular respiration
 - B. The ability to reproduce
 - C. The ability to maintain a stable internal environment
 - D. The process of evolution
- 5. What phenomenon is primarily responsible for causing the seasons on Earth?**
 - A. The distance from the Sun
 - B. The tilt of Earth's axis
 - C. The rotation of Earth
 - D. The varying speed of the Earth's orbit
- 6. Which human system is responsible for hormone production?**
 - A. The nervous system
 - B. The digestive system
 - C. The endocrine system
 - D. The circulatory system

7. Which system in the human body is responsible for transporting nutrients and oxygen?

- A. The digestive system
- B. The respiratory system
- C. The circulatory system
- D. The excretory system

8. What is a genotype?

- A. The observable characteristics of an organism
- B. The genetic makeup of an organism
- C. A type of mutation
- D. The environment's effect on an organism

9. What is a pendulum primarily characterized by?

- A. A fixed point that does not move
- B. A technique used in scientific experiments
- C. A weight that swings back and forth
- D. A system used to measure time

10. What is the definition of an amino acid?

- A. A simple organic compound that can form proteins
- B. A type of sugar used for energy
- C. A kind of fat involved in cellular structures
- D. A nonelectrolyte that does not yield ions in solution

Answers

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

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Explanations

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1. Which gas is most abundant in the Earth's atmosphere?

- A. Oxygen
- B. Nitrogen**
- C. Carbon dioxide
- D. Argon

Nitrogen is the most abundant gas in the Earth's atmosphere, making up about 78% of the total atmosphere by volume. Its presence is crucial for various biological and chemical processes on Earth. Nitrogen serves as a significant part of the atmosphere because it stabilizes the atmosphere and plays a role in the nitrogen cycle, which is essential for plant growth and the functioning of ecosystems. This high concentration of nitrogen also makes it less reactive compared to other gases, contributing to the overall stability and composition of the atmosphere. In contrast, gases like oxygen, while vital for respiration and combustion, constitute only about 21% of the atmosphere. Carbon dioxide is much less abundant at around 0.04%, yet it plays a critical role in photosynthesis and the Earth's greenhouse effect, but it is not the most abundant gas. Argon, a noble gas, is present in trace amounts (about 0.93% of the atmosphere). Understanding the composition and abundance of these gases helps to grasp essential concepts regarding Earth's atmosphere and its processes.

2. What process do organisms use to convert glucose into energy?

- A. Photosynthesis
- B. Cellular respiration**
- C. Fermentation
- D. Digestion

Organisms convert glucose into energy primarily through cellular respiration, a biochemical process that occurs in the cells of living organisms. In this process, glucose, which is a simple sugar and a key source of energy, is broken down in the presence of oxygen to produce adenosine triphosphate (ATP), water, and carbon dioxide. ATP serves as the main energy currency of the cell, powering various cellular functions. Cellular respiration can be divided into three main stages: glycolysis, the citric acid cycle (Krebs cycle), and oxidative phosphorylation. During glycolysis, glucose is split into two molecules of pyruvate while generating small amounts of ATP. The pyruvate is then further processed in the citric acid cycle and ultimately leads to the production of a large amount of ATP through oxidative phosphorylation. This process is essential for aerobic organisms (those that require oxygen) but can also occur anaerobically (without oxygen) through fermentation, which is a different process and typically yields less energy. While photosynthesis is the process that plants use to convert light energy into chemical energy, digestion involves breaking down food into simpler molecules for absorption but does not directly convert glucose into energy. As such, cellular respiration is the most accurate answer to

3. Which of the following describes velocity?

- A. The change of position over time
- B. Speed without direction
- C. A variable that tells both speed and direction**
- D. The total distance traveled

Velocity is defined in physics as a vector quantity that describes both the speed of an object and the direction in which it is moving. This means that to fully understand velocity, you must consider not just how fast an object is traveling (which is its speed), but also the path or direction it is taking. For instance, if a car is moving at 60 miles per hour to the north, this specific description incorporates both the speed and direction, making it a complete representation of the object's motion. The other choices focus on related concepts but do not fully capture the definition of velocity. For example, the change of position over time refers to the basic idea of motion, while total distance traveled only accounts for how far an object has moved without considering direction. Speed without direction describes the magnitude of motion but lacks the directional component that is essential to the definition of velocity. Thus, the most accurate description of velocity is that it is a variable that specifies both speed and direction.

4. What is homeostasis?

- A. The process of cellular respiration
- B. The ability to reproduce
- C. The ability to maintain a stable internal environment**
- D. The process of evolution

Homeostasis refers to the physiological processes that organisms use to maintain a stable internal environment despite external changes. This includes regulation of factors such as temperature, pH, hydration, and electrolyte balance. For example, humans maintain a core body temperature of approximately 98.6°F (37°C) through various mechanisms like sweating or shivering, which help to either release or conserve heat. The concept of homeostasis is fundamental to biology because it is essential for the survival and functioning of living organisms. A stable internal environment allows cells to operate effectively, ensuring proper function and overall health. When homeostasis is disrupted, it can lead to various health issues or even death, emphasizing its importance in biological systems.

5. What phenomenon is primarily responsible for causing the seasons on Earth?

- A. The distance from the Sun
- B. The tilt of Earth's axis**
- C. The rotation of Earth
- D. The varying speed of the Earth's orbit

The tilt of Earth's axis is the primary phenomenon responsible for causing the seasons. The Earth is tilted at an angle of about 23.5 degrees relative to its orbit around the Sun. This tilt means that as the Earth travels around the Sun, different parts of the planet receive varying amounts of sunlight at different times of the year. During summer in the northern hemisphere, for example, the North Pole is tilted towards the Sun, resulting in longer days and more direct sunlight, which warms that region. Conversely, during winter, the North Pole is tilted away from the Sun, leading to shorter days and less direct sunlight, causing cooler temperatures. This cycle creates the seasonal changes we experience throughout the year. Factors like the distance from the Sun and the Earth's orbit do influence climate and temperature to a degree but are not the primary reasons for seasonal changes. The rotation of Earth affects day and night but not the seasons. The varying speed of the Earth's orbit plays a minimal role in seasonal changes compared to the consistent effect of the axial tilt.

6. Which human system is responsible for hormone production?

- A. The nervous system
- B. The digestive system
- C. The endocrine system**
- D. The circulatory system

The endocrine system is responsible for hormone production in the human body. This system consists of various glands, including the pituitary, thyroid, adrenal glands, and the pancreas, among others. Each of these glands releases specific hormones directly into the bloodstream, which then travel to different organs and tissues to regulate a range of bodily functions. Hormones play crucial roles in processes such as growth and development, metabolism, sexual function, reproduction, and mood regulation. The correct answer highlights the essential function of the endocrine system in maintaining homeostasis and facilitating communication between various body systems through hormonal signals. In contrast, other systems mentioned do not primarily focus on hormone production. The nervous system primarily transmits electrical signals between neurons to coordinate bodily responses, the digestive system is responsible for breaking down food and nutrient absorption, and the circulatory system is tasked with transporting blood and nutrients throughout the body. Therefore, recognizing the specific role of the endocrine system is key to understanding hormonal functions in human biology.

7. Which system in the human body is responsible for transporting nutrients and oxygen?

- A. The digestive system
- B. The respiratory system
- C. The circulatory system**
- D. The excretory system

The circulatory system is responsible for transporting nutrients and oxygen throughout the human body. This system consists of the heart, blood vessels (arteries, veins, and capillaries), and blood. The heart pumps oxygenated blood from the lungs to the rest of the body, delivering essential oxygen and nutrients to cells and tissues. Simultaneously, the circulatory system also returns deoxygenated blood back to the heart and lungs for reoxygenation and removal of carbon dioxide. In contrast, the digestive system primarily focuses on breaking down food and absorbing nutrients into the bloodstream, but it does not directly transport these substances. The respiratory system is responsible for gas exchange, bringing in oxygen and removing carbon dioxide, while the excretory system focuses on eliminating waste products from the body. Thus, the circulatory system is the key player in the transportation of vital substances like nutrients and oxygen.

8. What is a genotype?

- A. The observable characteristics of an organism
- B. The genetic makeup of an organism**
- C. A type of mutation
- D. The environment's effect on an organism

A genotype refers to the specific genetic makeup of an organism, encompassing the alleles it carries for various genes. This genetic constitution determines many of the organism's traits and characteristics, although not solely, as those traits can also be influenced by environmental factors. Understanding genotypes is crucial in genetics because they provide insight into hereditary patterns, potential characteristics that might be expressed, and how organisms may respond to their environment. This distinction between genotype and phenotype, which is the observable expression of the genotype, underlines the importance of genetic information in biology.

9. What is a pendulum primarily characterized by?

- A. A fixed point that does not move
- B. A technique used in scientific experiments
- C. A weight that swings back and forth**
- D. A system used to measure time

A pendulum is primarily characterized by a weight that swings back and forth. This swinging motion occurs due to the force of gravity acting on the weight, also known as the bob, which is attached to a fixed point by a string or rod. When the weight is displaced from its resting position and released, gravity pulls it downward, causing it to swing through an arc and return to its starting point, demonstrating a regular and repeating motion. This characteristic of swinging back and forth makes it a key example of harmonic motion in physics. While the other options touch on related concepts, they do not define the primary characteristic of a pendulum. The fixed point is essential for the pendulum's function, but it alone does not characterize the pendulum itself. Although pendulums can be used in scientific experiments and time measurement devices, these are applications of the pendulum rather than its defining characteristic.

10. What is the definition of an amino acid?

- A. A simple organic compound that can form proteins**
- B. A type of sugar used for energy
- C. A kind of fat involved in cellular structures
- D. A nonelectrolyte that does not yield ions in solution

Amino acids are organic compounds that serve as the building blocks of proteins. Each amino acid contains a basic amino group ($-NH_2$), an acidic carboxyl group ($-COOH$), and a unique side chain or R group that determines the characteristics of each individual amino acid. When amino acids link together through peptide bonds, they form proteins, which play crucial roles in the structure and function of cells. The correct choice highlights the foundational role that amino acids play in protein synthesis, making it essential for numerous biological processes, including enzyme function, cell signaling, and immune responses. This definition accurately reflects the significance of amino acids in biochemistry and their contribution to the overall functioning of living organisms.

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:

<https://nweasciencemap.examzify.com>

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

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