# NORTH CAROLINA GRADE 8 END-OF-GRADE (EOG) SCIENCE PRACTICE TEST (SAMPLE)

## STUDY GUIDE



## SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

**VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE**

https://ncgrade8eogscience.examzify.com

**Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.**

**ALL RIGHTS RESERVED.**

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

# Table of Contents


Copyright ..... 1
Table of Contents ..... 2
Introduction ..... 3
How to Use This Guide ..... 4
Questions ..... 5
Answers ..... 8
Explanations ..... 10
Next Steps ..... 15


SAMPLE

# 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.

SAMPLE

# 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!

SAMPLE

# Questions

SAMPLE

**1. Which statement best describes energy transfer in a simple food chain?**

A. About 10 percent

B. About 90 percent

C. About 50 percent

D. About 0.1 percent

**2. Which statement about why scientists use models is true?**

A. To replace experiments entirely.

B. To simplify, visualize, and test ideas about objects or systems that are too large, small, dangerous, or complex to study directly.

C. To memorize facts without testing.

D. To show off advanced technology.

**3. Which of the following is NOT one of the three basic states of matter?**

A. Gas

B. Plasma

C. Solid

D. Liquid

**4. What information does a chemical symbol and atomic number convey?**

A. The symbol represents the element; the atomic number equals the number of protons in the nucleus.

B. The symbol indicates the element's melting point and boiling point.

C. The symbol shows the element's color and density.

D. The atomic number equals the number of electrons.

**5. Which description best explains how sedimentary rocks form?**

A. From molten rock that cools and solidifies

B. From fragments of other rocks that are deposited and cemented together

C. From rocks altered by heat and pressure

D. From chemical precipitation only

SAMPLE

**6. Which type of rock forms when lava erupts onto the surface and cools rapidly?**

A. Sedimentary rock

B. Intrusive igneous rock

C. Metamorphic rock

D. Extrusive igneous rock

**7. Which would indicate that a series of fossils represent the evolution of the horse?**

A. All of the fossils were found in the same layers of rock as horse fossils.

B. All of the fossils are completely identical to horse fossils.

C. All of the fossils show similar structures to that of the modern horse.

D. All of the fossils were located in the same place on Earth as horses.

**8. Tigers and household cats differ greatly in size primarily due to what?**

A. Biochemical makeup

B. Behavioral makeup

C. Genetics

D. Habitat size

**9. What best describes producers in an ecosystem?**

A. Organisms that convert inorganic materials into organic matter via photosynthesis

B. Organisms that consume other organisms for energy

C. Organisms that break down dead material

D. Organisms that never interact with sunlight

**10. Which most likely causes the arctic fox fur color to change seasonally from white to reddish brown?**

A. The Amount of Sunlight Present

B. The Fox's Age

C. The Fox's Genes

D. The Fox's Habitat

SAMPLE

# Answers

SAMPLE

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

SAMPLE

# Explanations

SAMPLE

## 1. Which statement best describes energy transfer in a simple food chain?

A. About 10 percent

B. About 90 percent

C. About 50 percent

D. About 0.1 percent

*Energy transfer between trophic levels in a simple food chain is inefficient, so only a small portion of energy moves from one level to the next. About 10 percent of the energy at one level is stored in the organisms at the next level. This happens because energy is used for life processes like movement, growth, and maintaining body temperature, and a lot is lost as heat and waste. As you go up the chain, there's less and less energy available to support biomass at higher levels, which is why top predators typically have much less energy available than producers. The other options don't fit because they imply far more or far less energy is transferred than what is typically observed in nature.*

## 2. Which statement about why scientists use models is true?

A. To replace experiments entirely.

B. To simplify, visualize, and test ideas about objects or systems that are too large, small, dangerous, or complex to study directly.

C. To memorize facts without testing.

D. To show off advanced technology.

*Scientists use models to simplify, visualize, and test ideas about objects or systems that are too large, small, dangerous, or complex to study directly. A model lets us focus on the most important features and run experiments or simulations that would be difficult or impossible with the real thing, while predicting how it should behave under different conditions. This helps us learn, understand, and make informed predictions without dealing with the hazards or impracticalities of the real object. It's not about replacing experiments entirely; rather, experiments and data are used to check how well a model represents reality. And it's not about memorizing facts or showing off technology—the goal is to understand and test ideas about how systems work.*

## 3. Which of the following is NOT one of the three basic states of matter?

A. Gas

B. Plasma

C. Solid

D. Liquid

*Matter can exist in different forms based on energy and how tightly its particles are held together. In a solid, particles are tightly packed and vibrate in place. In a liquid, they can flow and take the shape of their container. In a gas, particles move freely and spread out to fill the space available. Plasma is a fourth state that appears when energy is so high that atoms lose electrons, creating a mix of positively charged ions and free electrons. Because these charged particles behave differently—conducting electricity and responding to magnetic and electric fields—plasma isn't one of the three basic states under ordinary conditions. You can see plasma in stars, lightning, and fluorescent lights.*

SAMPLE

## 4. What information does a chemical symbol and atomic number convey?

A. The symbol represents the element; the atomic number equals the number of protons in the nucleus.

B. The symbol indicates the element's melting point and boiling point.

C. The symbol shows the element's color and density.

D. The atomic number equals the number of electrons.

*A chemical symbol is the element's shorthand name, telling you which element you're looking at. The atomic number is the number of protons in the nucleus, and that number uniquely identifies the element and places it in the periodic table. So the symbol tells you the element, and the atomic number tells you how many protons it has. Other properties like melting or boiling points, color, or density aren't defined by the symbol or atomic number alone. Also, while a neutral atom has the same number of electrons as protons, the atomic number itself is about protons, not electrons, which can vary in charged ions.*

## 5. Which description best explains how sedimentary rocks form?

A. From molten rock that cools and solidifies

B. From fragments of other rocks that are deposited and cemented together

C. From rocks altered by heat and pressure

D. From chemical precipitation only

*Sedimentary rocks form when pieces of other rocks and minerals are broken down, carried away by wind or water, and gradually settle in layers. Over time, these layers get buried, compacted, and cemented together by minerals in groundwater, turning loose sediment into solid rock. This deposition and cementation process is what makes sedimentary rocks distinct. That's why this description fits best: it emphasizes fragments being deposited and then cemented into rock. Other rock types come from different processes—igneous rocks form from molten rock that cools and hardens, and metamorphic rocks form when existing rocks are changed by heat and pressure. While some sedimentary rocks can form from chemical precipitation, the broader idea of sedimentary rock formation centers on deposition of fragments and their cementation.*

## 6. Which type of rock forms when lava erupts onto the surface and cools rapidly?

A. Sedimentary rock

B. Intrusive igneous rock

C. Metamorphic rock

D. Extrusive igneous rock

*When lava erupts onto the surface and cools rapidly, it hardens into rocks with very small crystals or a glassy texture. That rapid cooling happens at the surface, so mineral grains don't have time to grow. The resulting rocks are called extrusive igneous rocks. Examples include obsidian (glassy), pumice (porous and frothy), and fine-grained basalts and rhyolites. This is different from rocks formed underground, where magma cools slowly and big crystals develop, which are intrusive igneous rocks like granite. Sedimentary rocks form from compacted sediments, and metamorphic rocks come from existing rocks altered by heat and pressure, not from molten lava cooling.*

SAMPLE

**7. Which would indicate that a series of fossils represent the evolution of the horse?**

A. All of the fossils were found in the same layers of rock as horse fossils.

B. All of the fossils are completely identical to horse fossils.

C. All of the fossils show similar structures to that of the modern horse.

D. All of the fossils were located in the same place on Earth as horses.

*A series of fossils that shows gradual changes in structure over time provides evidence of evolution in a lineage. If the fossils share basic structural features with the modern horse but display progressive differences, they indicate how ancestors evolved into the modern form, showing a line of descent rather than just random similarity. This pattern—progressive change within related fossils—is how scientists trace the evolution of horses. Being found in the same rock layer, or being identical to modern horses, or simply located in the same place on Earth doesn't demonstrate that temporal sequence of changing forms, so they don't provide the same clear evidence of evolutionary progression.*

**8. Tigers and household cats differ greatly in size primarily due to what?**

A. Biochemical makeup

B. Behavioral makeup

C. Genetics

D. Habitat size

*Size differences between tigers and house cats come from genetics—the inherited instructions in their DNA that determine how big an animal can grow, how bones develop, and how much muscle and tissue are built. Over long periods of evolution, these genetic factors have produced tigers as large wild cats and kept domestic cats much smaller. Environment and resources can influence growth to some extent, but they can't override the genetic limits that set a species' typical size. Biochemical makeup isn't what creates such a large size gap, since both have similar chemistry and the difference lies in how growth is directed by genes. Behavior relates to how animals live or hunt, not to their maximum size. Habitat size can affect access to food, but the inherent size difference comes from genetics.*

**9. What best describes producers in an ecosystem?**

A. Organisms that convert inorganic materials into organic matter via photosynthesis

B. Organisms that consume other organisms for energy

C. Organisms that break down dead material

D. Organisms that never interact with sunlight

*Producers are the organisms that start the energy flow in an ecosystem by making organic material from inorganic substances, usually using energy from the sun. Through photosynthesis, plants, algae, and some bacteria capture sunlight to convert carbon dioxide and water into glucose and other organic molecules that store energy. Those compounds form the base of the food web, powering every other organism either directly or indirectly and also releasing oxygen as a byproduct. Other roles described here don't fit producers. Organisms that eat other organisms for energy are consumers. Those that break down dead material are decomposers. And while there are some microbes that don't rely on sunlight, the common, teaching-focused idea of producers is that they create organic matter primarily through photosynthesis. Therefore, the description matches producers.*

SAMPLE

**10. Which most likely causes the arctic fox fur color to change seasonally from white to reddish brown?**

A. The Amount of Sunlight Present

B. The Fox's Age

C. The Fox's Genes

D. The Fox's Habitat

*Seasonal fur color change is driven by environmental signals, especially the length of daylight. The changing day length acts as a cue that triggers hormonal adjustments in the fox, causing it to molt and switch pigment production so its coat goes from white in winter to reddish brown in summer. The genes set up the animal's ability to change color and molt, but the actual seasonal timing comes from daylight cues, not just the fox's age or habitat. So, the amount of sunlight present is the most likely trigger for this seasonal change.*

SAMPLE

# 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://ncgrade8eogscience.examzify.com

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

SAMPLE