GMAS 8th Grade Science Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

Sample study guide. For the full version with hundreds of questions, visit: https://gmas8thgradescience.examzify.com

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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. Mass is a measure of what property of matter?

A. Weight

B. Amount of matter

C. Velocity

D. Friction

2. What is the name of the chart that organizes elements by increasing atomic number?

A. Periodic Chart

B. Atomic Ledger

C. Periodic Table

D. Element Grid

3. The gravitational force on an object is called what?

A. Mass

B. Friction

C. Weight

D. Force

4. Why do we observe different Moon phases?

A. The Sun's illumination changes over time

B. The Moon orbits Earth and we see varying amounts of its sunlit side over time

C. The Moon's distance to Earth changes dramatically

D. The Earth's shadow causes the phases

5. What does Newton's first law of motion state?

A. An object accelerates unless acted on by a net external force

B. An object at rest stays at rest and an object in motion stays in motion unless acted on by a net external force

C. For every action there is an equal and opposite reaction

D. Energy cannot be created or destroyed

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6. Which type of wave has the medium move back and forth in the same direction the wave travels?

- **A. Transverse wave**
- **B. Compressional (Longitudinal) wave**
- **C. Sound wave**
- **D. Surface wave**

7. Negatively charged particles that orbit the nucleus?

- **A. Electrons**
- **B. Protons**
- **C. Neutrons**
- **D. Nucleus**

8. How do mantle convection currents relate to plate motion?

- **A. They create drag and push/pull plates, causing their movement.**
- **B. They have no effect on plate motion.**
- **C. They cause plates to dissolve.**
- **D. They only affect surface weather.**

9. If distance is 800 m and time is 200 s, what is speed?

- **A. 4 m/s**
- **B. 2 m/s**
- **C. 6 m/s**
- **D. 8 m/s**

10. Which statement best describes metals, metalloids, and non-metals?

- **A. Metals Conduct Electricity and Are Ductile; Metalloids Are Semiconductors; Non-Metals Are Poor Conductors**
- **B. Metals Conduct Electricity and Are Brittle; Metalloids Are Insulators; Non-Metals Are Shiny**
- **C. Metals Conduct Electricity Only When Molten; Metalloids Are Non-Conductive; Non-Metals Are Tough**
- **D. Metals Conduct Electricity and Are Ductile; Metalloids Are Semiconductors; Non-Metals Are Poor Conductors**

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Answers

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

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Explanations

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1. Mass is a measure of what property of matter?

A. Weight

B. Amount of matter

C. Velocity

D. Friction

Mass tells us how much matter is in an object. It measures the amount of material something contains and stays the same no matter where the object is—Earth, the Moon, or space. This is why mass is different from weight, which is the gravitational pull on that mass and can change with location. Velocity describes how fast something moves and in what direction, not how much stuff it has. Friction is a force that resists motion between surfaces. So describing mass as the amount of matter is the best answer.

2. What is the name of the chart that organizes elements by increasing atomic number?

A. Periodic Chart

B. Atomic Ledger

C. Periodic Table

D. Element Grid

Organizing elements by increasing atomic number reveals how their identities and properties repeat in a predictable way. The chart that does this and also groups elements with similar chemistry is the periodic table. By arranging elements in order of the number of protons, the periodic table shows trends in reactivity, size, and electron configuration as you move across rows (periods) and down columns (groups). This setup makes it easy to predict how elements will behave and how they bond with others. The standard name for this chart is the periodic table; other proposed terms aren't the standard usage in science.

3. The gravitational force on an object is called what?

A. Mass

B. Friction

C. Weight

D. Force

Weight is the gravitational force acting on an object. It comes from the pull of a planet on the object's mass and is equal to mass times the local gravitational acceleration (weight = m × g). Because gravity can change from one location to another, weight changes while mass stays the same. For example, a 10 kg mass weighs about 98 newtons on Earth, but much less on the Moon. Friction is a different force that resists motion between surfaces, and force is a general term for any push or pull, not specifically the gravity-driven pull on an object.

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4. Why do we observe different Moon phases?

A. The Sun's illumination changes over time

B. The Moon orbits Earth and we see varying amounts of its sunlit side over time

C. The Moon's distance to Earth changes dramatically

D. The Earth's shadow causes the phases

Different Moon phases happen because the Moon orbits Earth and we see different portions of its lit side as it moves around us. The Sun provides light consistently, but the angle between the Sun, the Moon, and Earth changes over the month. As the Moon travels in its orbit, more or less of the sunlit hemisphere faces us, creating the sequence from near side not visible (new Moon) through crescent, first quarter, gibbous, to fully lit (full Moon), then back again. The Moon's distance from Earth varies, but that doesn't drive the phases. Earth's shadow can dim the Moon during a lunar eclipse, but regular Moon phases are due to the changing geometry of Sun–Moon–Earth.

5. What does Newton's first law of motion state?

A. An object accelerates unless acted on by a net external force

B. An object at rest stays at rest and an object in motion stays in motion unless acted on by a net external force

C. For every action there is an equal and opposite reaction

D. Energy cannot be created or destroyed

Inertia—the tendency of objects to keep doing what they're doing—underlies Newton's first law. It says that an object at rest stays at rest and an object in motion stays in motion unless acted on by a net external force. In other words, if the total force on an object is zero, its velocity won't change: a stationary object remains stationary, and a moving object keeps moving in a straight line at the same speed. Think of a hockey puck sliding on ice: if friction is minimal, it keeps gliding at roughly the same speed and direction until someone or something applies a force to slow it down or change its path. Only when a net external force acts does the motion change. That's why the other statements aren't describing this law. An idea that objects must always accelerate unless a force acts would contradict the fact that no force means no acceleration. The statement about action and reaction describes a different principle—Newton's third law. And energy conservation is about energy accounting, not how motion changes.

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6. Which type of wave has the medium move back and forth in the same direction the wave travels?

A. Transverse wave

B. Compressional (Longitudinal) wave

C. Sound wave

D. Surface wave

How the particles in the medium move relative to the direction the wave travels. In a longitudinal (compressional) wave, the particles oscillate back and forth along the same line as the wave's travel. As the wave moves, regions of compression where particles are crowded alternate with regions of rarefaction where they're spread apart, and these compressions propagate forward through the medium. That parallel motion—particle movement in the same direction as the wave—is what this description is capturing. In a transverse wave, the particles move up and down (perpendicular to the direction of travel), so their motion isn't in the same direction as the wave. Surface waves mix motions but aren't simply back-and-forth along the travel direction, so they don't fit the description as neatly. An everyday example of the longitudinal type is sound traveling through air, where the air particles push together and then pull apart along the path the sound is moving. This alignment of particle movement with the wave's direction makes longitudinal the best fit.

7. Negatively charged particles that orbit the nucleus?

A. Electrons

B. Protons

C. Neutrons

D. Nucleus

Electrons are the negatively charged particles that orbit the nucleus. In an atom, the nucleus contains protons (positive charge) and neutrons (no charge), while electrons move around outside the nucleus in regions called electron shells. The opposite charges attract, pulling electrons toward the nucleus but keeping them in orbit around it. This arrangement explains why the atom has a negative charge overall balance when needed. Protons stay in the nucleus and are positively charged, neutrons are neutral and also in the nucleus, and the nucleus itself is the center—not something that orbits.

8. How do mantle convection currents relate to plate motion?

A. They create drag and push/pull plates, causing their movement.

B. They have no effect on plate motion.

C. They cause plates to dissolve.

D. They only affect surface weather.

Mantle convection currents drive plate motion by creating drag at the base of the tectonic plates. Heat from Earth's interior causes mantle rock to rise in upwellings and sink in downwellings. This circulating motion pushes and pulls on the rigid lithosphere floating above, causing the plates to move slowly. At upwelling zones, the rising mantle helps push plates apart and form new crust at mid-ocean ridges, while sinking slabs at subduction zones pull the rest of the plate along. So the convection in the mantle is the engine that moves the plates. The other ideas don't fit because convection currents lie beneath the plates and directly influence their motion, not surface weather, and they don't dissolve crust. They also do not have no effect—their whole purpose is to drive plate movement through drag and slab pull.

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9. If distance is 800 m and time is 200 s, what is speed?

A. 4 m/s

B. 2 m/s

C. 6 m/s

D. 8 m/s

Speed is how far something travels per unit of time, found by dividing distance by time. Here, 800 m divided by 200 s equals 4 m/s, so the object moves 4 meters every second on average. The other numbers would come from using a different time or mixing units, but with the given data the correct result is 4 m/s.

10. Which statement best describes metals, metalloids, and non-metals?

A. Metals Conduct Electricity and Are Ductile; Metalloids Are Semiconductors; Non-Metals Are Poor Conductors

B. Metals Conduct Electricity and Are Brittle; Metalloids Are Insulators; Non-Metals Are Shiny

C. Metals Conduct Electricity Only When Molten; Metalloids Are Non-Conductive; Non-Metals Are Tough

D. Metals Conduct Electricity and Are Ductile; Metalloids Are Semiconductors; Non-Metals Are Poor Conductors

Understanding how metals, metalloids, and non-metals behave in terms of electricity and shape helps make sense of this statement. Metals typically let electric current flow easily and are malleable and ductile, meaning they can be drawn into wires and hammered into sheets. Metalloids sit between metals and non-metals and often act as semiconductors, so their ability to conduct electricity can be controlled by conditions or impurities. Non-metals generally do not conduct electricity well and are not ductile; many are brittle and can be solids, liquids, or gases at room temperature. So, describing metals as good conductors that are ductile, metalloids as semiconductors, and non-metals as poor conductors captures the common, useful distinctions used in science. Some exceptions exist, but this framework matches everyday patterns the question targets.

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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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