

# Academic Decathlon Science Practice Test (Sample)

## Study Guide



**Everything you need from our exam experts!**

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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 statement correctly defines fish?**
  - A. Mammals that live in water and breathe with lungs.**
  - B. Aquatic vertebrates that breathe with gills and are cold-blooded.**
  - C. Invertebrates that do not have backbones.**
  - D. Reptiles that live in water and have scales.**
  
- 2. Which statement about owls' eyes is supported by the text?**
  - A. Owls have large eyes that help them see well in low light.**
  - B. Owls have large eyes that help them see well in daylight.**
  - C. Owls have small eyes.**
  - D. Owls have no eyes.**
  
- 3. What is the feeding behavior of the marabou stork?**
  - A. The marabou stork is a scavenger that feeds on a wide variety of food, including carrion**
  - B. It primarily eats seeds**
  - C. It hunts large mammals**
  - D. It scavenges only fish**
  
- 4. Coral are:**
  - A. A single-celled organism**
  - B. A fish**
  - C. A sponge**
  - D. Marine invertebrates that form colonies and build reefs, consisting of many individual polyps**
  
- 5. Roundworms are a group of unsegmented worms with a cylindrical body, including nematodes.**
  - A. Roundworms**
  - B. Nematodes**
  - C. Flatworms**
  - D. Annelids**

- 6. How do scientists define a 'bug'?**
- A. An insect with wings.**
  - B. An arthropod with six legs.**
  - C. An insect in the order Hemiptera with piercing and sucking mouthparts.**
  - D. An insect that can fly.**
- 7. Which of the following describes falconry?**
- A. The sport of racing pigeons.**
  - B. The study of migration patterns in birds.**
  - C. The use of birds of prey to deter pests.**
  - D. The art of training and hunting with birds of prey.**
- 8. Polyp describes which body form of cnidarians?**
- A. A cylindrical body form of cnidarians, typically attached to a substrate and having tentacles for feeding**
  - B. A free-swimming medusa form**
  - C. A larval stage of crustaceans**
  - D. A floating plant**
- 9. Which statement best describes a distinguishing feature of the Nile crocodile?**
- A. Venomous bite.**
  - B. Excellent swimming ability and spends most of its time in freshwater.**
  - C. Lives in saltwater environments.**
  - D. Primarily terrestrial hunter.**
- 10. Which of the following best describes metamorphosis in amphibians?**
- A. Metamorphosis is the growth of bones from cartilage.**
  - B. Metamorphosis is the process of aging.**
  - C. Metamorphosis is the transition from larval forms with gills to adult forms with lungs.**
  - D. Metamorphosis is the migration to different habitats.**

## Answers

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

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## **Explanations**

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**1. Which statement correctly defines fish?**

- A. Mammals that live in water and breathe with lungs.
- B. Aquatic vertebrates that breathe with gills and are cold-blooded.**
- C. Invertebrates that do not have backbones.
- D. Reptiles that live in water and have scales.

Fish are aquatic vertebrates with gills and are cold-blooded. They live in water, have a backbone, and exchange gases through specialized gill membranes that extract dissolved oxygen from the water. Their body temperature generally matches the surrounding environment, rather than being actively maintained internally. Other descriptions miss one or more essential traits: mammals that live in water breathe with lungs, not gills, and regulate their body temperature; invertebrates lack backbones; and aquatic reptiles live in water but do not have the same combination of gills and cold-blooded metabolism. The defining mix—living in water, having a backbone, breathing through gills, and being cold-blooded—best describes fish.

**2. Which statement about owls' eyes is supported by the text?**

- A. Owls have large eyes that help them see well in low light.**
- B. Owls have large eyes that help them see well in daylight.
- C. Owls have small eyes.
- D. Owls have no eyes.

The main idea here is how eye size relates to vision in low light. Owls have notably large eyes, which means a larger light-gathering area. In dim conditions, collecting more light is crucial for forming a usable image, so their big eyes support good night vision. That's why the statement that owls have large eyes that help them see well in low light fits the text best. The other possibilities don't align with this focus: suggesting their eyes are best in daylight isn't what the text emphasizes, and claims that owls have small or no eyes contradict both the text and what we know about owl anatomy.

**3. What is the feeding behavior of the marabou stork?**

- A. The marabou stork is a scavenger that feeds on a wide variety of food, including carrion
- B. It primarily eats seeds
- C. It hunts large mammals
- D. It scavenges only fish**

Marabou storks are opportunistic scavengers, feeding primarily on carrion and a variety of easy-to-access foods. They routinely exploit carcasses, offal, and other decaying matter, often around dumps or near water sources, using their bills to tear flesh. They will also take small live prey such as frogs, fish, and insects when available, but their diet is broad and not limited to fish, and seeds are not a typical part of their feeding. This carrion-first, flexible feeding strategy is what characterizes their behavior.

#### 4. Coral are:

- A. A single-celled organism
- B. A fish
- C. A sponge
- D. Marine invertebrates that form colonies and build reefs, consisting of many individual polyps**

Coral are marine invertebrates that form colonies and build reefs, consisting of many individual polyps. Each polyp is a small, soft-bodied animal that lives together with others; over time they secrete calcium carbonate skeletons that interlock to create the hard framework of a reef. This colonial lifestyle means a reef is built by many individual polyps working as a community. They're not single-celled organisms, not fish, and not sponges. In many corals, photosynthetic algae live inside the coral tissues and provide energy, aiding reef growth in sunlit shallow waters. This combination of living colonies that construct calcium carbonate structures is what defines corals.

#### 5. Roundworms are a group of unsegmented worms with a cylindrical body, including nematodes.

- A. Roundworms**
- B. Nematodes
- C. Flatworms
- D. Annelids

This item hinges on recognizing the common name for a group defined by an unsegmented, cylindrical body. The name that fits this description is roundworms, which is the everyday term for nematodes—the same group known scientifically as Nematoda. Flatworms are flat and lack a true body cavity, while annelids are segmented with ring-like sections. So the description points to roundworms as the best fit.

#### 6. How do scientists define a 'bug'?

- A. An insect with wings.
- B. An arthropod with six legs.
- C. An insect in the order Hemiptera with piercing and sucking mouthparts.**
- D. An insect that can fly.

In biology, a bug refers to a true bug—a specific group of insects in the order Hemiptera that share piercing and sucking mouthparts. Those specialized mouthparts are the giveaway: they're built for inserting a beak-like structure into plant or animal tissue and drawing out fluids. Because this mouthpart arrangement is the defining feature of true bugs, scientists label a bug as an insect in Hemiptera with piercing-sucking mouthparts. Other traits like having wings or the ability to fly aren't what define a bug; many insects with wings or the ability to fly aren't Hemiptera, and some true bugs are wingless, so those features aren't reliable definitions either.

**7. Which of the following describes falconry?**

- A. The sport of racing pigeons.
- B. The study of migration patterns in birds.
- C. The use of birds of prey to deter pests.
- D. The art of training and hunting with birds of prey.**

Falconry is the practice of training birds of prey to hunt with a human handler. It focuses on building a working relationship between the falconer and the bird, using specialized training and equipment to enable the bird to pursue and capture game under human guidance. That makes the description of training and hunting with birds of prey the best fit. Racing pigeons describes a different sport altogether, pigeon racing. Studying migration patterns falls under ornithology, not falconry. Using birds of prey to deter pests is an application of raptors in pest management, but falconry is defined by the training and hunting partnership, not solely by pest deterrence.

**8. Polyp describes which body form of cnidarians?**

- A. A cylindrical body form of cnidarians, typically attached to a substrate and having tentacles for feeding**
- B. A free-swimming medusa form
- C. A larval stage of crustaceans
- D. A floating plant

Cnidarians have two common body forms: the polyp and the medusa. The polyp is cylindrical and usually attached to a surface, with the mouth at the top surrounded by tentacles used for feeding. This sessile, tube-like form is seen in organisms like hydras, sea anemones, and corals. The other form, the medusa, is umbrella-shaped and free-swimming, like jellyfish. A crustacean larval stage and a floating plant are not cnidarian body forms. So the description matches the cylindrical, sessile polyp form with feeding tentacles.

**9. Which statement best describes a distinguishing feature of the Nile crocodile?**

- A. Venomous bite.
- B. Excellent swimming ability and spends most of its time in freshwater.**
- C. Lives in saltwater environments.
- D. Primarily terrestrial hunter.

The main idea here is that Nile crocodiles are highly adapted to a life spent in water, especially in freshwater habitats. They are superb swimmers—their powerful tail propels them with great speed and efficiency—so they spend the vast majority of their time in rivers, lakes, and floodplains. This combination of excellent swimming ability and a strong preference for freshwater environments is what clearly distinguishes them. Venomous bite is a common misconception; crocodilians don't have venom that they inject with a bite. Saltwater environments aren't the hallmark of the Nile crocodile, which can tolerate brackish waters but is not primarily a saltwater species. And they aren't mainly terrestrial hunters; they rely on ambushing prey from the water, so their hunting is tied to their aquatic lifestyle.

**10. Which of the following best describes metamorphosis in amphibians?**

- A. Metamorphosis is the growth of bones from cartilage.**
- B. Metamorphosis is the process of aging.**
- C. Metamorphosis is the transition from larval forms with gills to adult forms with lungs.**
- D. Metamorphosis is the migration to different habitats.**

Metamorphosis is a major reorganization of an animal's body plan during development. In amphibians, it means changing from an aquatic larval form that has gills, a tail, and no legs to an adult form with legs, lungs, and a different set of organs. This transformation is largely controlled by thyroid hormone and is triggered as the animal approaches adulthood, involving widespread changes to the digestive and circulatory systems, among others. It's not simply growing bones, aging, or migrating to a new habitat; it's a complete developmental remodeling to fit a different lifestyle.

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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](mailto:hello@examzify.com).**

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

**<https://academicdecathlonscience.examzify.com>**

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

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