# Module 4: Protists, Fungi and Plants

## Certification
Graduates receive DTA Short Course Certificate(upon completion of full program)

## Duration
3 days (24 hours)

## Course Description
This module is a comprehensive deep dive into the foundational kingdoms of life that shape the Botswana wilderness. Designed for aspiring professional guides, it moves beyond simple identification to explore the critical roles, intricate relationships, and evolutionary stories of protists, fungi, and plants. Learners will gain the knowledge and interpretive skills to explain how these often-overlooked organisms drive ecosystem health, support iconic wildlife, and create the very landscapes guests come to see, fostering a deeper appreciation for the complexity of the natural world.

## Course Outcome
- How to understand the evolutionary history and defining characteristics of the Eukarya domain's four kingdoms.
- How to articulate the profound ecological significance of microscopic protists as the base of aquatic food webs and key nutrient cyclers.
- How to explain the vital role of fungi as master decomposers and symbiotic partners essential for plant survival, particularly in nutrient-poor Kalahari soils.
- How to interpret the strategies and adaptations of plants, from non-vascular bryophytes to advanced angiosperms, and their co-evolution with animals.
- How to identify key plant families and genera that define Botswana's major biomes, including the Savanna, Okavango Delta, and Kalahari.
- How to integrate this knowledge into engaging storytelling for guests, connecting microscopic processes and plant life to the visible safari experience.

## Topics Covered
- Introduction to Eukaryotic Kingdoms: Protista, Fungi, Plantae, Animalia
- Kingdom Protista: Diversity, evolution, and role as primary producers, consumers, and decomposers.
- Protists in the Okavango Delta and Kalahari: Algal blooms, soil health, and symbiotic relationships.
- Kingdom Fungi: Structure, life cycle, and ecological functions of decomposition and mycorrhizal symbiosis.
- Fungi in the Savanna and Kalahari: Wood decomposition, the "Wood Wide Web," and termite mound cultivation.
- Kingdom Plantae: Evolution and adaptations for life on land.
- Plant Classification: Non-vascular vs. vascular plants; seedless vs. seed-producing plants.
- Botswana's Key Plant Orders and Families: In-depth study of Poales (grasses/sedges), Asparagales (aloes/orchids), Fabales (legumes), Malvales (baobabs), and more.
- Plant-Animal Interactions: Herbivory, pollination, seed dispersal, and co-evolution.
- Interpretation Techniques: Making the invisible world of microbes and the silent world of plants engaging and relevant for safari guests.

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