Go Extinct! Australian Curriculum Alignment Documentation

Executive Summary

Evolutionary trees are one the most important scientific diagrams; they neatly summarise the evolutionary relationships among living things. [Go Extinct!](#) is a 30-minute social board game for 3 to 6 players, ages 8 and up. The game incorporates an accurate evolutionary tree of Australian megafauna (large vertebrates) and highlights several lines of evidence used to infer their evolutionary relationships including shared traits, genetics, and geography.

Playing *Go Extinct! Megafauna* directly supports the Biological Sciences curricula for:
Year 5: Evolutionary trees are constructed by identifying the traits an animal has in common with related animals. These traits are usually adaptive - an overarching Year 5 concept.

- **ACSSU043:** Living things have structural features and adaptations that help them to survive in their environment.
- **ACSHE081:** Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena.
- **ACSIS090:** Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data.

Senior Secondary: Evolutionary trees reinforce the idea that all life on earth once shared a common ancestor, a major theme in the Senior Secondary Biology Curriculum Unit 1: Biodiversity and in Unit 3: Heredity and Continuity of Life. The branches represent life's diversity; the nodes, where branches converge, represent common ancestors.

- **ACSBL017:** Biological classification systems reflect evolutionary relatedness between groups of organisms.
- **ACSSU185:** The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence.
- **ACSHE192:** Provides context for investigations on: our understanding of the changing climatic conditions and human interaction with the Australian megafauna (OI.5, OI.9)

All students will engage in the following General Capabilities:
- **Literacy:** evolutionary trees are a great example of multimodal text.
- **Critical and creative thinking:** game strategy involves all 4 interrelated elements.
- **Personal and social:** the game's competitive aspect develops emotional awareness.
- **Intercultural Understanding:** students will learn Indigenous names for the megafauna, reflecting the much longer history Indigenous people have with these unique animals.

Go Extinct! **supports follow-up classroom activities to meet additional standards:**
- Students can compare the branches of the *Go Extinct!* tree and make inferences about how certain adaptations allowed animals to successfully diversify on land (ACSIS203)
- Students can construct their own evolutionary trees from different lines of evidence, compare results, and decide on the best solution (ACSIS093, ACSIS204, ACSHE194)

For more specific ideas on how to incorporate Go Extinct! into your classroom and to meet the standards listed above, please read the explanation in the following pages of this document.

STANDARDS MET WHILE PLAYING THE GAME

By virtue of its design, gameplay and the information on the evolutionary tree board / animal cards will help students understand standards related to adaptation and the continuity of life on their own and can be expanded upon with teacher guidance. Learn more here: www.steamgalaxy.com/?p=253

- **ACSSU043:** Living things have structural features and adaptations that help them to survive in their environment.
- **ACSSU185:** The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence.

Go Extinct! features a wide diversity of animals from Australia and from all over the world. The game is particularly good at emphasising patterns among animals – even those widespread.

Scientists classify animals in the tree by determining how closely or distantly two animals are related based on multiple lines of evidence. *Go Extinct!* emphasises the common physical traits (such as bone structures, ability to lose a tail, or maintaining constant body temperature), how an embryo develops (in an egg, in a pouch, or in a long pregnancy), DNA sequence similarity, and common geographic origins (usually inferred from fossil evidence). For example, the game demonstrates that bats, lions, horses, and whales are known to be closely related because their fossil origins are all found on the same ancient continent.

- **ACSHE081:** Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena.
- **ACSIS090:** Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data.

CLASS DISCUSSIONS FOLLOWING THE GAME CAN MEET ADDITIONAL STANDARDS

- **ACSIS093:** Communicate ideas, explanations and processes in a variety of ways, including multimodal texts.
- **ACSHE083:** Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives.
- **ACSHE217:** Scientific knowledge is used to inform personal and community decisions
- **ACSIS203:** Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies.
- **ACSIS204:** Use knowledge of scientific concepts to draw conclusions that are consistent with evidence.
- **ACSHE192:** Researching how technological advances in dating methods of Aboriginal Peoples' material culture are contributing to our understanding of the changing climatic conditions and human interaction with the Australian megafauna (OI.5, OI.9).
- **ACSHE194:** People can use scientific knowledge to evaluate whether they should accept claims, explanations or predictions.