**Labyrinthodontia**

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**Labyrinthodontia (**[**Greek**](https://en.wikipedia.org/wiki/Greek_language)**, "maze-toothed") is an**[**extinct**](https://en.wikipedia.org/wiki/Extinction)[**amphibian**](https://en.wikipedia.org/wiki/Amphibian)**subclass, which constituted some of the dominant animals of late [Paleozoic](https://en.wikipedia.org/wiki/Paleozoic" \o "Paleozoic) and early**[**Mesozoic**](https://en.wikipedia.org/wiki/Mesozoic)**eras (about 390 to 150 million years ago). The group evolved from**[**lobe-finned fishes**](https://en.wikipedia.org/wiki/Sarcopterygii)**in the**[**Devonian**](https://en.wikipedia.org/wiki/Devonian)**and is ancestral to all**[**extant**](https://en.wikipedia.org/wiki/Extant_taxon)**[landliving vertebrates](https://en.wikipedia.org/wiki/Tetrapod" \o "Tetrapod).[**[***dubious***](https://en.wikipedia.org/wiki/Wikipedia:Accuracy_dispute#Disputed_statement)***–***[***discuss***](https://en.wikipedia.org/wiki/Talk:Labyrinthodontia#Dubious)**] As such it constitutes an**[**evolutionary grade**](https://en.wikipedia.org/wiki/Evolutionary_grade)**(a**[**paraphyletic group**](https://en.wikipedia.org/wiki/Paraphyletic_group)**) rather than a natural group (**[**clade**](https://en.wikipedia.org/wiki/Clade)**). The name describes the pattern of infolding of the**[**dentin**](https://en.wikipedia.org/wiki/Dentin)**and**[**enamel**](https://en.wikipedia.org/wiki/Tooth_enamel)**of the teeth, which are often the only part of the creatures that**[**fossilize**](https://en.wikipedia.org/wiki/Fossil)**. They are also distinguished by a heavily armoured**[**skull roof**](https://en.wikipedia.org/wiki/Skull_roof)**(hence the older name "[Stegocephalia](https://en.wikipedia.org/wiki/Stegocephalia" \o "Stegocephalia)"), and complex vertebrae, the structure of which were used in**[**older classifications**](https://en.wikipedia.org/wiki/Labyrinthodontia#Vertebral_classification)**of the group.**

**Because labyrinthodonts do not form a monophyletic group, many modern researchers have abandoned the term. However, some have continued to use the group in their classifications, at least informally, pending more detailed study of their relationships.**[**[1**](https://en.wikipedia.org/wiki/Labyrinthodontia#cite_note-hall2007-1)

**Labyrinthodont traits[**[**edit**](https://en.wikipedia.org/w/index.php?title=Labyrinthodontia&action=edit&section=1)**]**

**[](https://en.wikipedia.org/wiki/File:Labyrinthodon_Mivart.png)**

**Cross-section of a labyrinthodont tooth**

**The labyrinthodonts flourished for more than 200 million years. Particularly the early forms exhibited a lot of variation, yet there are still a few basic anatomical traits that make their fossils very distinct and easily recognisable in the field:**

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| * **Strongly folded tooth surface, involving infolding of the**[**dentin**](https://en.wikipedia.org/wiki/Dentin)**and**[**enamel**](https://en.wikipedia.org/wiki/Tooth_enamel)**of the teeth, so that a cross section resembles a classical**[**labyrinth**](https://en.wikipedia.org/wiki/Labyrinth)**(or**[**maze**](https://en.wikipedia.org/wiki/Maze)**), hence the name of the group.**[**[2]**](https://en.wikipedia.org/wiki/Labyrinthodontia#cite_note-Romer_&_Parson-2) * **Massive skull roof, with openings only for the nostrils, eyes and a**[**parietal eye**](https://en.wikipedia.org/wiki/Parietal_eye)**, similar to the structure of the**[**anapsid**](https://en.wikipedia.org/wiki/Anapsid)**reptiles. With the exception of the later more reptile-like forms, the skull was rather flat with copious amounts of dermal armour, accounting for the older term for the group: *Stegocephalia*.**[**[2]**](https://en.wikipedia.org/wiki/Labyrinthodontia#cite_note-Romer_&_Parson-2) * [**Otic notch**](https://en.wikipedia.org/wiki/Otic_notch)**behind each eye at the back edge of the skull. In the primitive waterbound forms it may have formed an open**[**spiracle**](https://en.wikipedia.org/wiki/Spiracle)**, and may possibly have held a**[**tympanic membrane**](https://en.wikipedia.org/wiki/Tympanum_(anatomy))**in some advanced forms.**[**[3]**](https://en.wikipedia.org/wiki/Labyrinthodontia#cite_note-Clark_2007-3)[**[4]**](https://en.wikipedia.org/wiki/Labyrinthodontia#cite_note-L98-4) * **Complex**[**vertebrae**](https://en.wikipedia.org/wiki/Vertebral_column)**made of 4 pieces, an [intercentrum](https://en.wikipedia.org/w/index.php?title=Intercentrum&action=edit&redlink=1" \o "Intercentrum (page does not exist)), two [pleurocentra](https://en.wikipedia.org/w/index.php?title=Pleurocentra&action=edit&redlink=1" \o "Pleurocentra (page does not exist)), and a**[**vertebral arch**](https://en.wikipedia.org/wiki/Vertebral_arch)**/spine. The relative sizes and ossification of the elements is highly variable** |