

Systematic Classification of Contemporary Humans

Galactic development

Cosmic

Spacetime
Energy
Matter

Chemical

Stars
Heavy elements
Chemical diversity

Origin of Life on Earth

Terrestrial

Earth
Atmosphere
Oceans

Organic

Carbon-based molecules
Complex structures
Amino acids
Sugars
Nucleotides
Hydrothermal vent mediation
Polymerization
RNA
Peptides
Lipid membranes

Prebiota

Ribozymes
Self-replication
Evolution by natural selection
Proteins
Enzymes
Metabolic pathways
Protocells

Single-celled life

Biota (Life)

Self-maintenance
DNA
Self-reproduction
Cellular structure
Last Universal Common Ancestor (LUCA)

Domain Eukaryota

Membrane-bound organelles
Cell nucleus
Linear DNA
Sexual reproduction
Complex cytoskeleton

Amorphea

Amoeboid locomotion
Heterotrophy

Obazoa

Feeding groove
Flagellar structures
Signaling and regulatory pathways

Opisthokonta

Single posterior flagellum

Holozoa

Food ingestion
Internal digestion
Cell differentiation

Filozoa

Filose tentacles for
Sensory perception,
Feeding,
Locomotion and
Adherence

Multicellularity

Choanozoa

Intercellular communication
Intercellular cooperation

Kingdom Metazoa (Animals)

Multicellularity
Specialized tissues
Internal digestive system
Locomotion
Diplontic lifecycle
Embryonic development

Soft-bodied animals

Eumetazoa (True animals)

Truly differentiated tissues
Symmetry
Mouth
Anus

ParaHoxozoa

Anterior-posterior patterning
Distinct body regions

Planulozoa

Larval stage
Gastrulation via Invagination

Bilateria

Bilateral symmetry
Head
Three germ layers
Nervous system
Muscles
Digestive tract
Light-sensitive cells
Structured sleep patterns

Nephrozoa

Coelom
Excretory organ system

Cambrian explosion

Deuterostomia

Grows from anus to mouth
Mineralized body parts

Phylum Chordata

Pharyngeal arches
Notochord
Dorsal hollow nerve cord
Post-anal tail
Thyroid
Eyespots
Cardiac structures

Vertebrates emerge

Olfactores

Olfactory system

Vertebrata

Vertebral column
Skull
Nostrils
Paired eyes
Circulatory system
Muscular heart

Gnathostomata (Jawed vertebrates)

Jaws
Teeth
Paired limbs
Lens-equipped eyes

Osteichthyes (Bony fish)

Bony endoskeleton
Lungs or swim bladder
Shoulders

Sarcopterygii (Lobe-finned fish)

Lobed fins
Divided atrium

Rhipidistia

Limbs supported by bones

Conquering land

Tetrapodomorpha

Weight supporting limbs
Pelvic girdle

Choanata

Air-breathing lungs
Internal nostrils
Nasal passage

Elpistostegalia

Shoulder girdle
Neck
Loss of dorsal and anal fins

Stegocephalia

Strong vertebral column
Complex teeth structures

Tetrapoda

Four fully functional limbs
Digits
Terrestrial locomotion
Complex respiratory system

Reptiliomorpha

Keratinized skin and claws
Internal fertilization

Amniota

Amniotic egg
Land-based

Mammalian characteristics

Synapsida

Singular temporal fenestra
Thermal regulation

Eupelycosauria

Differentiated teeth
Primitive canines

Sphenacodontia

Articulated jaw
Canines

Therapsida

Warm-blooded
Vertical limb posture

Theriodontia

Flexible spine
Mammalian locomotion
Seven neck vertebrae

Cynodontia

Secondary palate
Proto-hair
Single lower jawbone
Middle ear bones
Heel
Diaphragm

Probainognathia

Incisors
High metabolic rate
Mammalian gait

Prozostrodontia

Upright running
Mammalian jaw

Mammaliaformes

Molars
Hair

Class Mammalia

No teeth at birth
Mammary glands
Fur
Three inner ear bones

Placenta & Pregnancy

Theriiformes

Separate anus and urogenital tract
External ear

Trechnotheria

Radial articulation of limbs
Ankle
Two sets of teeth

Cladotheria

Sensory capabilities
Hearing, smell, touch

Zatheria

Nipples

Tribosphenida

Tribosphenic molars
Modern ear

Theria

Live birth

Eutheria (Placental mammals)

Placenta

Mammalian diversity

Placentalia

Extended gestation

Boreoeutheria

External scrotum

Euarchontoglires

Omnivory
Diverse ecological niches

Euarchonta

Hand-eye coordination
Symbiosis with seeds and berries

Primates

Forward-facing eyes
Binocular depth perception
Grasping hands and feet

Humanoid form

Order Primata (Monkeys)

Opposable thumbs
Nails instead of claws
Larger brain-to-body ratio
Flexible shoulders
Extended parental care
Complex social structures

Haplorhini (Dry-nosed monkeys)

Dry nose
Reduced olfactory capabilities
Vision as primary sense
Group behavior

Simiiformes (Simians)

Loss of sensory whiskers
Two pectoral nipples
Naked pendulous penis
Vocalizations

Catarrhini (Old world monkeys)

Trichromatic vision
Reduced tail
Downward-facing nostrils
2.1,2,3 dental formula
Flattened nails

Cognition & Awareness

Family Hominoidea (Apes)

Advanced problem-solving
Prolonged maternal care
Learning by observation
Tendency toward bipedalism
Flexible shoulder joints

Hominidae (Great apes)

Human-like teeth and ears
Primitive tool use
Recognizes their own reflection
Self-awareness
Empathy
Deliberate deception
Mourning
Fingerprints

Homininae

Family structure
Facial expressions
Emotions

Homonini

Loss of penile bone
Inter-group conflicts
Primitive tool use
Culture

Australopithecines

Bipedal locomotion
Human-like limb proportions
Flexible fingers
Thicker enamel

Australopithecus

Efficient walking
Smaller canines
Reduced prognathism
Varied diet
Diverse habitats

Genus *Homo* (Human)

Stone tool making
Meat consumption
Social complexity
Division of labor

Homo erectus

Loss of body hair
Complex cognition
Passing on knowledge
Technological development
Hunter-gatherer
Food processing
Controlled fire
Roasting, Grilling, Smoking

Homo heidelbergensis

Spear
Shelter construction
Complex communication

Humanity

Species *Homo sapiens* (Modern human)

Perennially enlarged breasts
Advanced language
Social learning
Clothing
Human migration
Behavioral modernity
Spiritualism
Art
Fishing
Trade
Weaving
Ceramics
Bow and Arrow
Bread

Civilized

Settlements
Agriculture
Grindstones
Pottery
Domestication of animals
Fermentation
Metalworking
Wheel

Historic

Writing
Calendar
Formal education
Law
Governance
Literature
Sail
Architecture
Mathematics
Alphabet
Medicine
Philosophy
Currency
Engineering
Compass
Gunpowder
Printing press
Scientific revolution

Modern

Enlightenment
Industrialization

Contemporary (You are here)

Space exploration
Globalization
Digitization
Anthropogenic climate change

Compiled by Anthony Liekens, January 2025

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