

```
{
  "Utilities": {
    "Creatures 3 Genetics Kit": {
      "Description": "Official tool for editing and mutating genomes. Allows direct editing of creature DNA, mutation controls, and export/import of genomes.",
      "DownloadLinks": [
        "https://eemfoo.org/archive/?filename=GeneticsKitC3.zip"
      ],
      "Docs": [
        "https://creatures.wiki/Genetics_Kit"
      ],
      "Source": "Eemfoo Archive"
    },
    "Docking Station Genetics Kit": {
      "Description": "Docking Station version of the Genetics Kit. Supports DS-specific genome structures and live editing of connected creatures.",
      "DownloadLinks": [
        "https://eemfoo.org/archive/?filename=GeneticsKitDS.zip"
      ],
      "Docs": [
        "https://creatures.wiki/Genetics_Kit"
      ],
      "Source": "Eemfoo Archive"
    },
    "Jagent": {
      "Description": "Core agent development toolkit. Includes PRAY compiler, Decompiler, Room Editor, and Sprite Builder for building agents and metarooms.",
      "DownloadLinks": [
        "https://eemfoo.org/archive/?filename=Jagent.zip",
        "https://creaturescaves.com/downloads.php?section=Development&view=600"
      ],
      "Docs": [
        "https://creatures.wiki/Jagent"
      ],
      "Source": [ "Eemfoo Archive", "CreaturesCaves" ]
    },
    "Live GMS": {
      "Description": "Open-source genome visualization and editing software. Provides live graphs of creature chemicals, genes, and interactions.",
      "DownloadLinks": [
        "https://sourceforge.net/projects/livegms/"
      ],
    },
  },
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    "Docs": [
      "https://sourceforge.net/projects/livegms/"
    ],
    "Source": "SourceForge"
  },
  "CAOS Tool": {
    "Description": "Official CAOS (Creatures Agent/Object Scripting) console tool for writing, testing, and injecting scripts into a running game.",
    "DownloadLinks": [
      "https://eemfoo.org/archive/?filename=CAOSTool.zip"
    ],
    "Docs": [
      "https://creatures.wiki/CAOS"
    ],
    "Source": "Eemfoo Archive"
  },
  "Genome Compare": {
    "Description": "Utility for comparing two genomes and generating difference reports. Useful for tracking mutations and verifying genome projects.",
    "DownloadLinks": [
      "https://eemfoo.org/archive/?filename=GenomeCompare.zip"
    ],
    "Source": "Eemfoo Archive"
  },
  "ATT Editor": {
    "Description": "Tool for editing ATT files, which define sprite attachment points for creature body parts.",
    "DownloadLinks": [
      "https://eemfoo.org/archive/?filename=ATTed.zip"
    ],
    "Docs": [
      "https://creatures.wiki/ATT_file"
    ],
    "Source": "Eemfoo Archive"
  },
  "Sprite Builder / S16 Converter": {
    "Description": "Converts sprites into Creatures S16/C16 format. Used for creating new agents, breeds, and metarooms.",
    "DownloadLinks": [
      "https://eemfoo.org/archive/?filename=SpriteBuilder.zip"
    ],
    "Docs": [
      "https://creatures.wiki/S16"
    ],
    "Source": "Eemfoo Archive"
  },
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    "Room Editor": {
      "Description":
        "Included in Jagent but also distributed separately. Allows editing of
        metarooms, including room shapes, links, and properties.",
      "DownloadLinks": [
        "https://eemfoo.org/archive/?filename=RoomEditor.zip"
      ],
      "Source": "Eemfoo Archive"
    },
    "Sprite Workshop": {
      "Description": "Community sprite editing tool for creating and modifying
        agent sprites.",
      "DownloadLinks": [
        "https://eemfoo.org/archive/?filename=SpriteWorkshop.zip"
      ],
      "Source": "Eemfoo Archive"
    }
  },
  "Agents": {
    "Bug Fix Pack": {
      "Description":
        "Community standard bugfix bundle. Corrects numerous issues in C3/DS such as
        elevator bugs, ecology errors, and script misfires.",
      "DownloadLinks": [
        "https://creaturescaves.com/downloads.php?section=Agents&view=1100",
        "https://eemfoo.org/archive/?filename=BugFixPack.zip"
      ],
      "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
    },
    "Population Control": {
      "Description": "Adds population caps, selective breeding control, and
        options for controlling overpopulation. Essential for wolfling runs.",
      "DownloadLinks": [
        "https://crefoo.org/archive/?filename=PopControl.zip"
      ],
      "Source": "Eemfoo Archive"
    },
    "Autokill Norn": {
      "Description": "Agent that automatically kills sick or unwanted creatures
        during wolfling runs.",
      "DownloadLinks": [
        "https://eemfoo.org/archive/?filename=AutoKillNorn.zip"
      ],
      "Source": "Eemfoo Archive"
    },
    "Creature Remote Control": {
      "Description": "Lets the user select and manipulate creatures directly,
        forcing movement or applying chemicals. Useful for testing genetics and

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behaviors.",
  "DownloadLinks": [
    "https://creaturescaves.com/downloads.php?section=Agents&view=910",
    "https://eemfoo.org/archive/?filename=RemoteControl.zip"
  ],
  "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
},
"Autonamer": {
  "Description": "Automatically assigns names to new creatures. Standard
utility in most wolfling runs.",
  "DownloadLinks": [
    "https://creaturescaves.com/downloads.php?section=Agents&view=650",
    "https://eemfoo.org/archive/?filename=Autonamer.zip"
  ],
  "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
},
"X-Ray": {
  "Description": "HUD overlay that shows organs, genes, and chemicals of
selected creatures. Core utility for genetic testing.",
  "DownloadLinks": [
    "https://creaturescaves.com/downloads.php?section=Agents&view=1244",
    "https://eemfoo.org/archive/?filename=XRay.zip"
  ],
  "Docs": [
    "https://creatures.wiki/X-Ray"
  ],
  "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
},
"Creature Counter": {
  "Description": "Shows live counts of Norns, Ettins, and Grendels. Useful
for monitoring breeding balance.",
  "DownloadLinks": [
    "https://creaturescaves.com/downloads.php?section=Agents&view=1140",
    "https://eemfoo.org/archive/?filename=CreatureCounter.zip"
  ],
  "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
},
"Egg Layer": {
  "Description": "Manually or automatically generates eggs of specified
breeds/genomes. Often used in wolfling runs.",
  "DownloadLinks": [
    "https://creaturescaves.com/downloads.php?section=Agents&view=890",
    "https://eemfoo.org/archive/?filename=EggLayer.zip"
  ],
  "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
},
"Egg Quick Fix": {
  "Description": "Fixes bugged eggs that refuse to hatch. Used in wolfling

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runs.",
  "DownloadLinks": [
    "https://eemfoo.org/archive/?filename=EggQuickFix.zip"
  ],
  "Source": "Eemfoo Archive"
},
"Autovivisector": {
  "Description":
"Advanced tool for forcibly killing or modifying creatures, useful in automated
population control.",
  "DownloadLinks": [
    "https://eemfoo.org/archive/?filename=Autovivisector.zip"
  ],
  "Source": "Eemfoo Archive"
},
"Randomizer": {
  "Description": "Applies random mutations, chemical injections, or
environmental changes. Used for stress testing and genetic experiments.",
  "DownloadLinks": [
    "https://eemfoo.org/archive/?filename=Randomizer.zip"
  ],
  "Source": "Eemfoo Archive"
},
"Ecology Kit": {
  "Description": "Monitors ecological stats such as food levels, critters,
and plants. Displays balance graphs for ecosystem testing.",
  "DownloadLinks": [
    "https://creaturescaves.com/downloads.php?section=Agents&view=1320",
    "https://eemfoo.org/archive/?filename=EcologyKit.zip"
  ],
  "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
},
"Hoverdoc": {
  "Description": "Displays detailed chemical and organ stats when hovering
over a creature. Like X-Ray but less intrusive.",
  "DownloadLinks": [
    "https://creaturescaves.com/downloads.php?section=Agents&view=1040",
    "https://eemfoo.org/archive/?filename=Hoverdoc.zip"
  ],
  "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
},
"Time Control": {
  "Description": "Allows acceleration, deceleration, or freezing of world
time. Used in wolfling runs for testing long-term survival quickly.",
  "DownloadLinks": [
    "https://eemfoo.org/archive/?filename=TimeControl.zip"
  ],
  "Source": "Eemfoo Archive"
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},
"Grendel/Ettin Killer": {
  "Description": "Agent that automatically purges all Grendels or Ettins
from a world. Common in controlled wolfling runs.",
  "DownloadLinks": [
    "https://eemfoo.org/archive/?filename=GEMKiller.zip"
  ],
  "Source": "Eemfoo Archive"
},
"Teleporters": {
  "Description": "Adds teleporter pads for navigation. Improves survival
rates during long wolfling runs.",
  "DownloadLinks": [
    "https://creaturescaves.com/downloads.php?section=Agents&view=700",
    "https://eemfoo.org/archive/?filename=Teleporters.zip"
  ],
  "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
},
"Advanced Muco": {
  "Description": "Replacement egg vendor with better breed support and
debugging controls. Essential when testing new breeds.",
  "DownloadLinks": [
    "https://creaturescaves.com/downloads.php?section=Agents&view=1210",
    "https://eemfoo.org/archive/?filename=AdvancedMuco.zip"
  ],
  "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
},
"Garden Box": {
  "Description": "Powerful framework for adding plants and ecology modules
into any world. Can be used to create experimental ecosystems for testing
genetic interactions.",
  "DownloadLinks": [
    "https://creaturescaves.com/downloads.php?section=Agents&view=1760",
    "https://eemfoo.org/archive/?filename=GardenBox.zip"
  ],
  "Docs": [
    "https://creatures.wiki/Garden_Box"
  ],
  "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
},
"Weather System": {
  "Description": "Adds dynamic weather cycles to test environmental
stressors on creatures and ecology.",
  "DownloadLinks": [
    "https://creaturescaves.com/downloads.php?section=Agents&view=1455",
    "https://eemfoo.org/archive/?filename=WeatherSystem.zip"
  ],
  "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
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    }
  },
  "Metarooms": {
    "C12DS": {
      "Description": "Faithful recreation of the Creatures 1 Albia environment within Docking Station. Includes full ecology, rooms, and original toy/food distribution.",
      "DownloadLinks": [
        "https://creaturescaves.com/downloads.php?section=Metarooms&view=146",
        "https://eemfoo.org/archive/?filename=C12DS.zip"
      ],
      "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
    },
    "Aquatilis Caverna": {
      "Description": "Large aquatic metaroom with unique fish, plants, and interactive underwater ecology. Standard for aquatic wolfling runs.",
      "DownloadLinks": [
        "https://creaturescaves.com/downloads.php?section=Metarooms&view=511",
        "https://eemfoo.org/archive/?filename=AquatilisCaverna.zip"
      ],
      "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
    },
    "Terra Reborn": {
      "Description": "Expansive ecosystem with forests, caves, and multiple climates. Used for balanced wolfling run experiments.",
      "DownloadLinks": [
        "https://creaturescaves.com/downloads.php?section=Metarooms&view=987",
        "https://eemfoo.org/archive/?filename=TerraReborn.zip"
      ],
      "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
    },
    "Norn Garden 1 & 2": {
      "Description": "Classic metaroom add-ons with rich flora and fauna, used for genetic and ecological variety testing.",
      "DownloadLinks": [
        "https://eemfoo.org/archive/?filename=NornGarden1.zip",
        "https://eemfoo.org/archive/?filename=NornGarden2.zip"
      ],
      "Source": "Eemfoo Archive"
    },
    "Forestia": {
      "Description": "Fan-made metaroom simulating a forest environment with balanced plant and critter life. Includes weather support.",
      "DownloadLinks": [
        "https://creaturescaves.com/downloads.php?section=Metarooms&view=765",
        "https://eemfoo.org/archive/?filename=Forestia.zip"
      ],
      "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
    }
  }
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    },
    "Creatures 2 to DS": {
      "Description":
"Port of the Creatures 2 Albia world into DS, complete with bridges, ecology,
and compatible agents.",
      "DownloadLinks": [
        "https://creaturescaves.com/downloads.php?section=Metarooms&view=150",
        "https://eemfoo.org/archive/?filename=C2toDS.zip"
      ],
      "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
    },
    "Veridia": {
      "Description": "Massive official-quality metaroom with multiple zones and
custom flora/fauna. Often used in advanced wolfling runs.",
      "DownloadLinks": [
        "https://creaturescaves.com/downloads.php?section=Metarooms&view=660",
        "https://eemfoo.org/archive/?filename=Veridia.zip"
      ],
      "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
    },
    "Devroom (Testing Metaroom)": {
      "Description": "Small blank metaroom used by developers to test agents,
scripts, and creature behavior without environmental interference.",
      "DownloadLinks": [
        "https://creaturescaves.com/community.php?section=Resources&view=17",
        "https://eemfoo.org/archive/?filename=DevRoom.zip"
      ],
      "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
    }
  },
  "Breeds": {
    "Chichi Norns (baseline)": {
      "Description": "Default DS breed. Included because many experiments
reference them as the unmodified baseline genome.",
      "DownloadLinks": [
        "https://eemfoo.org/archive/?filename=ChichiNorns.zip"
      ],
      "Source": "Eemfoo Archive"
    },
    "Toxic Norns": {
      "Description": "Official DS breed with unique poisonous biochemistry,
often used as a baseline for custom genetic experiments.",
      "DownloadLinks": [
        "https://creaturescaves.com/downloads.php?section=Breeds&view=222",
        "https://eemfoo.org/archive/?filename=ToxicNorns.zip"
      ],
      "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
    }
  },

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    "Hardman Norns": {
      "Description":
"Official Creatures 3 breed with more aggressive, resilient genome. Often used
in wolfling run stress testing.",
      "DownloadLinks": [
        "https://creaturescaves.com/downloads.php?section=Breeds&view=300",
        "https://eemfoo.org/archive/?filename=HardmanNorns.zip"
      ],
      "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
    },
    "Banshee Grendels": {
      "Description": "Aggressive grendel breed with expanded intelligence.
Common for predator-prey testing.",
      "DownloadLinks": [
        "https://creaturescaves.com/downloads.php?section=Breeds&view=345",
        "https://eemfoo.org/archive/?filename=BansheeGrendels.zip"
      ],
      "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
    },
    "Dream Norns": {
      "Description": "Community breed with altered brain structure for reduced
aggression and extended lifespan.",
      "DownloadLinks": [
        "https://creaturescaves.com/downloads.php?section=Breeds&view=750",
        "https://eemfoo.org/archive/?filename=DreamNorns.zip"
      ],
      "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
    },
    "CFE Genomes": {
      "Description": "Community Fix Edition genomes. First round of large-scale
fixes for broken official genomes (instincts, biochemistry, brain functions).",
      "DownloadLinks": [
        "https://eemfoo.org/archive/?filename=CFEGenomes.zip"
      ],
      "Docs": [
        "https://creatures.wiki/Community_Fix_Edition"
      ],
      "Source": "Eemfoo Archive"
    },
    "CFF Genomes": {
      "Description": "Community Fix and Feature genomes. Builds on CFE by
repairing instincts and adding new genetic features like improved fertility
control and survival instincts.",
      "DownloadLinks": [
        "https://eemfoo.org/archive/?filename=CFFGenomes.zip"
      ],
      "Docs": [
        "https://creaturescaves.com/community.php?section=Resources&view=24"
      ]
    }
  }

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    ],
    "Source": "Eemfoo Archive"
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  "TCB Norns": {
    "Description": "Theoretical Complete Biochemistry genomes. Overhauled
chemical pathways to improve survival realism; often used for advanced
testing.",
    "DownloadLinks": [
      "https://eemfoo.org/archive/?filename=TCBNorns.zip"
    ],
    "Docs": [
      "https://creaturescaves.com/community.php?section=Resources&view=25"
    ],
    "Source": "Eemfoo Archive"
  },
  "TWB Norns": {
    "Description": "True Warm-Blooded genomes. Introduces homeostatic
temperature regulation and new metabolic pathways, used for stress testing and
ecological balancing.",
    "DownloadLinks": [
      "https://eemfoo.org/archive/?filename=TWBGenomes.zip"
    ],
    "Docs": [
      "https://creaturescaves.com/community.php?section=Resources&view=26"
    ],
    "Source": "Eemfoo Archive"
  },
  "2017 Genomes": {
    "Description": "Final large-scale community fix project. Integrates years
of fixes from CFE/CFF/TCB/TWB into one unified baseline genome pack. Considered
standard for most wolfling runs post-2017.",
    "DownloadLinks": [
      "https://eemfoo.org/archive/?filename=2017Genomes.zip"
    ],
    "Docs": [
      "https://creatures.wiki/2017_genomes"
    ],
    "Source": "Eemfoo Archive"
  }
},
"Fixes": {
  "DS Offline Patch": {
    "Description": "Removes the need for the now-defunct Gameware DS server,
allowing Docking Station to run completely offline.",
    "DownloadLinks": [
      "https://creatures.wiki/Offline_Option",
      "https://eemfoo.org/archive/?filename=DSOfflineOption.zip"
    ],
  },

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    "Docs": [
      "https://creatures.wiki/Offline_Option"
    ],
    "Source": "Eemfoo Archive"
  },
  "Creature Drowning Fix": {
    "Description": "Prevents creatures from drowning in water areas by adjusting instinct and physics values.",
    "DownloadLinks": [
      "https://creaturescaves.com/downloads.php?section=Fixes&view=890",
      "https://eemfoo.org/archive/?filename=DrowningFix.zip"
    ],
    "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
  },
  "Egg Fix Pack": {
    "Description": "Fixes egg-laying and hatching issues common in wolfling runs.",
    "DownloadLinks": [
      "https://creaturescaves.com/downloads.php?section=Fixes&view=120",
      "https://eemfoo.org/archive/?filename=EggFixPack.zip"
    ],
    "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
  },
  "Elevator Fix": {
    "Description": "Corrects broken elevator scripts in certain metarooms, which prevented creatures from properly traveling between floors.",
    "DownloadLinks": [
      "https://eemfoo.org/archive/?filename=ElevatorFix.zip"
    ],
    "Source": "Eemfoo Archive"
  },
  "Genome Instinct Fixes": {
    "Description": "Early community patch correcting instinct miswiring in default Norn genomes. Superseded by CFE/CFF/2017 packs but historically important.",
    "DownloadLinks": [
      "https://eemfoo.org/archive/?filename=InstinctFixes.zip"
    ],
    "Source": "Eemfoo Archive"
  }
},
"FanProjects": {
  "OpenC2E": {
    "Description": "Open-source reimplementaion of the Creatures engine (Creatures 1, 2, and 3/DS). Aims for long-term preservation and modding flexibility.",
    "DownloadLinks": [
      "https://github.com/OpenC2e/OpenC2e"
    ]
  }
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],
"Docs": [
  "https://github.com/OpenC2e/OpenC2e/wiki",
  "https://creatures.wiki/OpenC2e"
],
"Source": "GitHub"
},
"C3DS Community Edition (CE)": {
  "Description": "Fan-maintained update of the original Creatures 3 and
Docking Station executables. Fixes bugs, adds modding hooks, improves stability,
and ensures compatibility with modern systems.",
  "DownloadLinks": [
    "https://github.com/Creatures-Developer-Network/c3ds-ce",
    "https://eemfoo.org/archive/?filename=C3DSCommunityEdition.zip"
  ],
  "Docs": [
    "https://github.com/Creatures-Developer-Network/c3ds-ce/wiki",
    "https://creatures.wiki/C3DS_Community_Edition"
  ],
  "Notes": "Includes source patches, build instructions, feature roadmap,
and compatibility notes. Integrates well with Albion Warp.",
  "Source": [ "GitHub", "Eemfoo Archive" ]
},
"Albion Warp (New Warp)": {
  "Description": "Fan-run replacement for the original Docking Station Warp
server. Provides working online multiplayer, creature sharing, and chat
functionality in modern installations.",
  "DownloadLinks": [
    "https://albianwarp.com/downloads/",
    "https://github.com/Creatures-Developer-Network/AlbianWarp"
  ],
  "Docs": [
    "https://albianwarp.com/",
    "https://albianwarp.com/documentation",
    "https://creatures.wiki/Albian_Warp"
  ],
  "Notes": "Includes client patchers, server emulator code, and protocol
documentation. Compatible with DS Offline Option.",
  "Source": [ "AlbianWarp", "GitHub" ]
},
"Eemfoo Archive": {
  "Description": "Comprehensive archive of Creatures utilities, agents,
metarooms, and breeds. Serves as the primary mirror for lost downloads.",
  "DownloadLinks": [
    "https://eemfoo.org/archive/"
  ],
  "Docs": [
    "https://eemfoo.org/"
  ]
}

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    ],
    "Source": "Eemfoo Archive"
  },
  "Creatures Wiki": {
    "Description":
"Community documentation project containing CAOS reference, tutorials, genome
documentation, and tool guides.",
    "DownloadLinks": [
      "https://creatures.wiki/"
    ],
    "Docs": [
      "https://creatures.wiki/CreaturesWiki:Community_portal"
    ],
    "Source": "Creatures Wiki"
  },
  "Warp Alternative Clients": {
    "Description": "Experimental alternative clients and launchers that
connect to Albion Warp and provide additional logging/debugging features.",
    "DownloadLinks": [
      "https://github.com/Creatures-Developer-Network/warp-client"
    ],
    "Docs": [
      "https://albianwarp.com/documentation"
    ],
    "Source": "GitHub"
  }
},
"Docs": {
  "CAOS Reference": {
    "Description": "Complete documentation of the Creatures Object Scripting
language (CAOS), including command reference and examples.",
    "Docs": [
      "https://creatures.wiki/CAOS",
      "https://creaturescaves.com/community.php?section=Resources&view=14",
      "https://eemfoo.org/archive/?filename=caos_reference.pdf"
    ],
    "Source": [ "Creatures Wiki", "CreaturesCaves", "Eemfoo Archive" ]
  },
  "CAOS Tutorials": {
    "Description":
"Step-by-step tutorials and advice on writing CAOS scripts, including injector
examples and basic agent creation.",
    "Docs": [
      "https://creaturescaves.com/dev.php?section=Advice",
      "https://creaturescaves.com/community.php?
section=Resources&category=Development",
      "https://creatures.wiki/CAOS_tutorial"
    ],
  },

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    "Source": [ "CreaturesCaves", "Creatures Wiki" ]
  },
  "File Format Guides": {
    "Description": "Documentation for core Creatures 3/DS file formats
including sprites, genome, and map files.",
    "Docs": [
      "https://creatures.wiki/S16",
      "https://creatures.wiki/C16",
      "https://creatures.wiki/ATT_file",
      "https://creatures.wiki/GEN_file",
      "https://creatures.wiki/BLK_file",
      "https://creatures.wiki/PRAY"
    ],
    "Source": "Creatures Wiki"
  },
  "PRAY Compiler Manual": {
    "Description": "Official and community documentation for packaging agents
with the PRAY compiler and Jagent.",
    "Docs": [
      "https://creatures.wiki/PRAY",
      "https://creaturescaves.com/community.php?section=Resources&view=31"
    ],
    "Source": [ "Creatures Wiki", "CreaturesCaves" ]
  },
  "Genome Documentation": {
    "Description": "Reference for community genome projects, including CFE,
CFF, TCB, TWB, and 2017 genomes.",
    "Docs": [
      "https://creatures.wiki/Community_Fix_Edition",
      "https://creaturescaves.com/community.php?section=Resources&view=24",
      "https://creaturescaves.com/community.php?section=Resources&view=25",
      "https://creaturescaves.com/community.php?section=Resources&view=26",
      "https://creatures.wiki/2017_genomes"
    ],
    "Source": [ "Creatures Wiki", "CreaturesCaves" ]
  },
  "Creatures Engine Notes": {
    "Description": "Reverse engineering notes on the Creatures engine, CAOS
internals, and game architecture. Includes forum threads with hex dumps and
opcode analysis.",
    "Docs": [
      "https://creaturescaves.com/forum.php?view=12",
      "https://eemfoo.org/archive/?filename=engine_notes.zip"
    ],
    "Source": [ "CreaturesCaves", "Eemfoo Archive" ]
  },
  "C3DS Community Edition Documentation": {
    "Description":

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"Technical documentation for the Community Edition project. Includes build
instructions, patch notes, debugging hooks, and modding entry points.",
  "Docs": [
    "https://github.com/Creatures-Developer-Network/c3ds-ce/wiki",
    "https://creatures.wiki/C3DS_Community_Edition"
  ],
  "Source": [ "GitHub", "Creatures Wiki" ]
},
"Albian Warp Protocols": {
  "Description": "Documentation of the DS warp protocol and its replacement
in Albian Warp. Includes technical notes on client/server communication,
authentication, and creature transfer packets.",
  "Docs": [
    "https://albianwarp.com/documentation",
    "https://creatures.wiki/Albian_Warp"
  ],
  "Source": [ "AlbianWarp", "Creatures Wiki" ]
},
"Warp Client Developer Notes": {
  "Description": "Reference for developing custom clients and tools that
connect to Albian Warp, including debug API calls.",
  "Docs": [
    "https://github.com/Creatures-Developer-Network/warp-client"
  ],
  "Source": "GitHub"
},
"Tutorials and Advice Collection": {
  "Description": "Community tutorials archived on CreaturesCaves covering
agent development, genome modification, and world-building.",
  "Docs": [
    "https://creaturescaves.com/dev.php?section=Advice",
    "https://creaturescaves.com/community.php?
section=Resources&category=Development&page=2",
    "https://creaturescaves.com/community.php?
section=Resources&category=Development&page=3"
  ],
  "Source": "CreaturesCaves"
}
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"ForumProjects": {
  "ReverseEngineering_SpritesAndATT": [
    {
      "Title": "C16 File Structure Notes",
      "Context": "Thread: 'Understanding C16 headers'",
      "Snippet": "Header includes number of images, compression flag, width/
height per frame.",
      "Notes": "Foundational documentation for all sprite editors. Led to

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C16→BMP converters."
    },
    {
      "Title": "S16 Format Dissection",
      "Context": "Thread: 'How S16 differs from C16'",
      "Snippet": "S16 stores raw bitmaps without compression.",
      "Notes": "Key to building early sprite import/export tools."
    },
    {
      "Title": "SPR Format Legacy Notes",
      "Context": "Thread: 'Old engine sprite format'",
      "Snippet": "SPR predates C16/S16, used in C1/C2. Indexed palette
images.",
      "Notes": "Reverse engineering effort led to C1→C3 conversion utilities."
    },
    {
      "Title": "Sprite Builder Utility",
      "Context": "Forum resource: Sprite Builder release",
      "Snippet": "Converts BMPs to C16/S16 sprite files.",
      "Notes":
"One of the earliest sprite editors. Widely used in breed/agent dev."
    },
    {
      "Title": "Sprite Builder Documentation",
      "Context": "Thread: 'How to batch build sprites'",
      "Snippet": "BMP naming convention controls sprite order.",
      "Notes": "Tutorial posts included step-by-step usage."
    },
    {
      "Title": "Sprite Tool (CLSDL)",
      "Context": "Thread: 'Cross-platform sprite converter'",
      "Snippet": "Utility built on SDL for C16 ↔ PNG conversion.",
      "Notes": "Made sprite editing possible outside Windows."
    },
    {
      "Title": "C16→PNG Conversion Snippet",
      "Context": "Thread: 'Python script shared'",
      "Snippet": "Opens binary header, decodes frames, writes PNG.",
      "Notes": "Popular forum post, repeatedly linked in dev threads."
    },
    {
      "Title": "PNG→C16 Conversion Tool",
      "Context": "Thread: 'Rebuilding sprites from PNGs'",
      "Snippet": "User-contributed command line utility.",
      "Notes": "Key for modern breed graphics pipelines."
    },
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    "Title": "ATT File Format Documentation",
    "Context": "Thread: 'Breaking down ATT body files'",
    "Snippet": "ATT defines pixel offsets for body parts per frame.",
    "Notes": "Reverse engineered so breeds could be built consistently."
  },
  {
    "Title": "ATT Editor Tool",
    "Context": "Forum release: ATT Editor v1",
    "Snippet": "Visual GUI to reposition limbs and save ATT.",
    "Notes": "Crucial for custom breed authors. Still cited today."
  },
  {
    "Title": "ATT File Hex Structure",
    "Context": "Thread: 'Byte-level breakdown of ATT'",
    "Snippet": "Each line corresponds to body part offset: X, Y, rotation.",
    "Notes": "Community reference for manual editing."
  },
  {
    "Title": "Automated ATT Generator",
    "Context": "Thread: 'Generate ATT from skeleton image'",
    "Snippet": "Script guesses offsets from reference PNG.",
    "Notes": "Prototype tool, saved hours of manual labor."
  },
  {
    "Title": "Sprite Compression Research",
    "Context": "Thread: 'C16 compression explained'",
    "Snippet": "Run-length encoding across horizontal scanlines.",
    "Notes": "Breakthrough for creating lossless converters."
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  {
    "Title": "Multi-Frame Sprite Packing",
    "Context": "Thread: 'How multiple sprites stored in C16'",
    "Snippet": "Header stores number of frames, each frame pointer.",
    "Notes": "Reverse engineering detail essential to animation packs."
  },
  {
    "Title": "Sprite Alignment Issues",
    "Context": "Thread: 'Fixing misaligned sprites'",
    "Snippet": "Mis-set ATT offsets cause floating body parts.",
    "Notes": "Core troubleshooting guide for new modders."
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  {
    "Title": "BMP Naming Conventions",
    "Context": "Thread: 'How to order sprites for conversion'",
    "Snippet": "01-Head-Front.bmp, 02-Arm-Side.bmp, etc.",
    "Notes": "Early standards that later became community norms."
  },
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    "Title": "C16-BMP Batch Converter",
    "Context": "Tool release thread",
    "Snippet": "Drag-and-drop converter for mass sprite export.",
    "Notes": "Enabled reskinning whole breeds."
  },
  {
    "Title": "PNG Transparency Fix",
    "Context": "Thread: 'Sprites importing with black boxes'",
    "Snippet": "Alpha channel must be set explicitly.",
    "Notes": "Critical fix for breed graphics. Still referenced today."
  },
  {
    "Title": "Animated Sprite Debugger",
    "Context": "Thread: 'Previewing sprite animations'",
    "Snippet": "Agent cycles through frames from C16.",
    "Notes": "In-game previewer for sprite alignment debugging."
  },
  {
    "Title": "ATT Pose Standardization",
    "Context": "Thread: 'Consistent offsets across breeds'",
    "Snippet": "Community-agreed default poses for head/limb anchors.",
    "Notes": "Key reference doc for breed creation."
  },
  {
    "Title": "Breed Graphics Pipeline Tutorial",
    "Context": "Community resource: step-by-step guide",
    "Snippet": "Paint in BMP, convert to C16, build ATT, compile PRAY.",
    "Notes": "Canonical workflow guide, often reposted to help new authors."
  },
  {
    "Title": "S16 Animation Quirks",
    "Context": "Thread: 'Game skips frames if...'",
    "Snippet": "Notes on how frame timing linked to tick rate.",
    "Notes": "Important for animators designing smooth movements."
  },
  {
    "Title": "Sprite Palettes Documentation",
    "Context": "Thread: 'Indexed colors in older games'",
    "Snippet": "SPR/C16 palette storage explained.",
    "Notes": "Helped conversion to modern formats."
  },
  {
    "Title": "Cross-Game Sprite Conversion",
    "Context": "Thread: 'Using C1/C2 sprites in C3'",
    "Snippet": "Required reindexing palettes and ATT rebuild.",
    "Notes": "Enabled retro breed import packs."
  },
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{
  "Title": "Batch ATT Adjuster Script",
  "Context": "Thread: 'Shift all limb offsets at once'",
  "Snippet": "Python tool to offset ATT values globally.",
  "Notes": "Saved time fixing mis-scaled body parts."
},
{
  "Title": "Creature Docking Sprite Replacer",
  "Context": "Thread: 'Replacing default DS sprites'",
  "Snippet": "Tool to swap out UI and world art.",
  "Notes": "Expanded scope beyond breeds, into UI modding."
},
{
  "Title": "Sprite Size Limitations",
  "Context": "Thread: 'Max dimensions per frame'",
  "Snippet": "C16 max width/height ~255 pixels.",
  "Notes": "Critical constraint for large breeds and background agents."
},
{
  "Title": "ATT Visualization Overlays",
  "Context": "Thread: 'Show ATT offsets in-game'",
  "Snippet": "Agent drew bounding boxes where body parts attached.",
  "Notes": "Visual debug tool. Taught many beginners ATT structure."
},
{
  "Title": "C16 Editor GUI (Community Build)",
  "Context": "Tool thread: WinForms-based editor",
  "Snippet": "Load, preview, replace frames, save C16.",
  "Notes": "More user-friendly than command line tools."
},
{
  "Title": "Sprite Mirror Utility",
  "Context": "Thread: 'Auto-generate left/right views'",
  "Snippet": "Mirrors BMP frames before conversion.",
  "Notes": "Cut workload for breed artists in half."
},
{
  "Title": "Frame Numbering Standards",
  "Context": "Thread: 'Why frames load out of order'",
  "Snippet": "Files must be numbered sequentially with leading zeros.",
  "Notes": "Saved many headaches for new breed devs."
},
{
  "Title": "ATT Corruption Troubleshooting",
  "Context": "Thread: 'ATT breaks after save'",
  "Snippet": "Common error traced to end-of-file markers.",
  "Notes": "Fix documented in dev forum repeatedly."
},

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{
  "Title": "Cross-Platform Sprite Tools",
  "Context": "Thread: 'Linux/Mac sprite workflows'",
  "Snippet": "SDL-based converters shared in forums.",
  "Notes": "Enabled cross-OS modding pipelines."
},
{
  "Title": "Creature UI Sprite Modding",
  "Context": "Thread: 'Custom icons and UI skins'",
  "Snippet": "Sprites packed into C16 same as breed graphics.",
  "Notes": "Opened up whole new modding niche."
}
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"ReverseEngineering_PRAY_BLK": [
  { "Title": "PRAY File Structure Notes", "Context": "Thread: 'Dissecting PRAY headers'", "Snippet": "Header includes agent metadata, dependencies, scripts, sprite list.", "Notes": "Foundational doc for all agent/room builds." },
  { "Title": "PRAY Command Reference", "Context": "Thread: 'List of PRAY tags'", "Snippet": "Tags: PRAY AGNT, DSAG, SPRT, BODY, FILE.", "Notes": "Community-assembled command list. Equivalent of API doc." },
  { "Title": "PRAY Builder Utility", "Context": "Thread: 'Forum release: PRAY Builder tool'", "Snippet": "Command-line utility to compile agents from PRAY source.", "Notes": "Standard packager used in most early agent dev." },
  { "Title": "PRAY Builder GUI", "Context": "Thread: 'WinForms GUI wrapper'", "Snippet": "Browse sprites, attach CAOS, compile PRAY.", "Notes": "Made packaging accessible to non-coders." },
  { "Title": "Agent Decompiler Notes", "Context": "Thread: 'Extracting PRAY contents'", "Snippet": "Extracts sprite files, ATT, scripts from .agent files.", "Notes": "Reverse engineering effort to unpack distributed mods." },
  { "Title": "PRAY Text Format", "Context": "Thread: 'Editing PRAY as text'", "Snippet": "Plain text format compiled to binary.", "Notes": "Enabled collaborative agent building in forums." },
  { "Title": "PRAY Template Example", "Context": "Thread: 'Minimal egg vendor agent'", "Snippet": "AGNT { classifier, script }", "Notes": "Shared as canonical starter file." },
  { "Title": "Dependency Management in PRAY", "Context": "Thread: 'Agents requiring other agents'", "Snippet": "FILE { link } entries define dependencies.", "Notes": "Critical for multi-agent packs." },
  { "Title": "Sprite Packing in PRAY", "Context": "Thread: 'How sprites get embedded'", "Snippet": "SPRT { frame count, width, height }", "Notes": "Reverse engineered for tool builders." },
  { "Title": "Sound Packing in PRAY", "Context": "Thread: 'Embedding WAV into agents'", "Snippet": "WAV files stored with header + data block.", "Notes": "Enabled audio mods, music agents." },
  { "Title": "PRAY Debugging Notes", "Context": "Thread: 'Agent crashes when injecting'", "Snippet": "Common fix: missing

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classifier or ATT mismatch.", "Notes": "Troubleshooting doc, widely cited." },
  { "Title": "BLK File Format Overview", "Context": "Thread: 'What is a BLK
file?'", "Snippet": "Defines room geometry, wall links, CA values.", "Notes":
"Core documentation enabling metaroom creation." },
  { "Title": "BLK Hex Structure", "Context": "Thread: 'Breaking down BLK by
hand'", "Snippet": "Rooms defined as polygons with coordinates.", "Notes":
"Reverse engineered through trial and error." },
  { "Title": "BLK Editor Utility", "Context": "Forum release: BLKEd v1",
"Snippet": "Visual GUI for drawing room shapes.", "Notes": "First real tool for
world geometry." },
  { "Title": "Room Connectivity in BLK", "Context": "Thread: 'How doors
link'", "Snippet": "Each room has adjacency list.", "Notes": "Critical for
metaroom CA diffusion." },
  { "Title": "BLK CA Initialization", "Context":
"Thread: 'Default CA values per room'", "Snippet": "Nutrient, heat, light
starting values.", "Notes": "Led to balanced metaroom design." },
  { "Title": "BLK and CAOS Link", "Context": "Thread: 'Room numbers used in
scripts'", "Snippet": "CAOS uses room IDs defined in BLK.", "Notes": "Bridged
geometry to agent scripts." },
  { "Title": "Metaroom PRAY Packaging", "Context": "Thread: 'Bundling BLK
into PRAY'", "Snippet": "PRAY includes BLK as FILE entry.", "Notes": "Standard
workflow for distributing rooms." },
  { "Title": "BLK Scaling Issues", "Context": "Thread: 'Rooms too small/
large'", "Snippet": "Pixel units vs CA diffusion units mismatch.", "Notes":
"Documented pitfall for metaroom devs." },
  { "Title": "Room Overlay Debug Tool", "Context": "Thread: 'Visualize BLK
rooms in-game'", "Snippet": "Agent outlines room polygons.", "Notes":
"Essential debug tool bundled with dev packs." },
  { "Title": "BLK Editor 2.0", "Context": "Thread: 'Improved room editor'",
"Snippet": "Supports curved walls, better save.", "Notes": "Second generation
BLK editing utility." },
  { "Title": "Metaroom Injection Notes", "Context": "Thread: 'Why world
crashes on new room'", "Snippet": "Missing map file or mislinked BLK.",
"Notes": "Forum FAQ thread, repeatedly cited." },
  { "Title": "BLK Elevation Data", "Context": "Thread: 'Adding depth to
rooms'", "Snippet": "Stores altitude values for terrain.", "Notes": "Led to
sloped metaroom experiments." },
  { "Title": "Custom Background Sprites", "Context": "Thread: 'Tiling BLK
with custom art'", "Snippet": "Background images aligned to BLK coordinates.",
"Notes": "Tutorial thread, heavily bookmarked." },
  { "Title": "BLK Walkway Flags", "Context": "Thread: 'Why creatures fall
through'", "Snippet": "Flag system controls walkable tiles.", "Notes":
"Breakthrough for stable room design." },
  { "Title": "BLK Error Troubleshooting", "Context": "Thread: 'Room leaks
chemicals'", "Snippet": "Fix: walls must be closed polygons.", "Notes":
"Classic mistake documented in dev forum." },
  { "Title": "Room Import Script", "Context":
"Thread: 'Load external BLK at runtime'", "Snippet": "CAOS reads BLK into

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world.", "Notes": "Forerunner to modular metaroom loaders." },
  { "Title": "BLK Reverse-Drawn Maps", "Context": "Thread: 'Draw map from
BLK data'", "Snippet": "Tool converts BLK polygons to PNG overlay.", "Notes":
"Visualization aid for developers." },
  { "Title": "Metaroom Starter Template", "Context": "Community resource",
"Snippet": "Includes BLK, background PNG, PRAY text.", "Notes": "Go-to starting
pack for new world authors." },
  { "Title": "CA Diffusion Experiments", "Context": "Thread: 'How BLK shape
affects CA'", "Snippet": "Rooms with narrow tunnels limit diffusion.", "Notes":
"Early scientific-style experiments in ecology." },
  { "Title": "Multi-Level BLK Rooms", "Context": "Thread: 'Stacked z-
levels'", "Snippet": "Attempted vertical layering via elevation flags.",
"Notes": "Ambitious but limited by engine." },
  { "Title": "BLK-PRAY Integration Bugfix", "Context": "Thread: 'Fixing
missing collision walls'", "Snippet": "Caused by PRAY mispackaging BLK index.",
"Notes": "Key troubleshooting doc." },
  { "Title": "Room Migration Scripts", "Context": "Thread: 'Force creatures
between rooms'", "Snippet": "Uses BLK room IDs in CAOS DOIF loops.", "Notes":
"Spawned migration agent templates." },
  { "Title": "Large World Performance Issues", "Context":
"Thread: 'BLK with too many rooms slows game'", "Snippet": "Game bottleneck
traced to room adjacency calculations.", "Notes": "Influenced optimization
guidelines." }
],
"ReverseEngineering_CAOS": [
  { "Title": "CAOS Command Catalog", "Context": "Thread: 'Unofficial CAOS
reference'", "Snippet": "Compiled list of commands: inst, scrp, mvto, etc.",
"Notes": "Became the community's unofficial CAOS manual." },
  { "Title": "Hidden CAOS Commands", "Context": "Thread: 'Commands not in
official docs'", "Snippet": "ex: targ, stim writ undocumented behaviors.",
"Notes": "Reverse engineered by trial and error." },
  { "Title": "CAOS VM Interpreter Notes", "Context": "Thread: 'How engine
runs scripts'", "Snippet": "Each script tied to classifier ID, queued per
tick.", "Notes": "Explained message passing system." },
  { "Title": "SCRIP Command Deep Dive", "Context": "Thread: 'Script
registration internals'", "Snippet": "Defines class, family, genus, event.",
"Notes": "Key for building custom agents." },
  { "Title": "Message Passing System", "Context":
"Thread: 'How scripts talk to each other'", "Snippet":
"mesg writ sends event to another classifier.", "Notes": "Led to advanced
modular agent design." },
  { "Title": "INST Debugging Notes", "Context": "Thread: 'Why inst freezes
game'", "Snippet": "INST locks interpreter until complete.", "Notes": "Crucial
for avoiding game hangs." },
  { "Title": "DOIF Quirks", "Context": "Thread: 'Nested conditionals
bugs'", "Snippet": "DOIF can fail silently if mis-nested.", "Notes": "Heavily
discussed pitfall for coders." },
  { "Title": "Loop Performance Tips", "Context": "Thread: 'Repeat vs

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Subroutines'", "Snippet": "Nested repeats slow VM significantly.", "Notes":
"Guidelines for optimizing CAOS code." },
    { "Title": "CAOS Classifier System", "Context": "Thread: 'What the three
numbers mean'", "Snippet": "Family, genus, species integers.", "Notes":
"Fundamental for debugging object classes." },
    { "Title": "Default Classifier List", "Context": "Community resource
thread", "Snippet": "Lists default families/genuses for toys, food, Norns.",
"Notes": "Staple reference doc for CAOS coders." },
    { "Title": "Pointer System Notes", "Context": "Thread: 'How TARG works'",
"Snippet": "Engine pointer resolves to creature/object.", "Notes": "Explained
many scripting bugs." },
    { "Title": "CAOS Subroutine Pattern", "Context": "Thread: 'Reusable code
blocks'", "Snippet": "Uses scrx/scrp pairs to simulate functions.", "Notes":
"Community standard for modular CAOS." },
    { "Title": "Message Queue Overflow", "Context": "Thread: 'World crashes
after spam'", "Snippet": "Too many mesg writ fills queue.", "Notes":
"Documented hard engine limit." },
    { "Title": "CAOS Debugging Agent", "Context": "Thread: 'Execute CAOS
live'", "Snippet": "Agent textbox runs typed CAOS instantly.", "Notes":
"Standard debug tool. Taught new coders." },
    { "Title": "Timer Scripts Behavior", "Context": "Thread: 'Tick rate per
timer'", "Snippet": "Timer scripts called every N ticks.", "Notes": "Clarified
real-time vs tick timing." },
    { "Title": "CAOS vs Engine Performance", "Context":
"Thread: 'Why too many agents lag'", "Snippet": "Interpreter overhead from
parallel scripts.", "Notes": "Led to efficiency guidelines." },
    { "Title": "Unknown OP Codes", "Context": "Thread: 'Hex disassembly of
CAOS'", "Snippet": "Unidentified op codes mapped to internal functions.",
"Notes": "One of the deepest reverse engineering projects." },
    { "Title": "CAOS Error Codes", "Context": "Thread: 'What errors mean'",
"Snippet": "ex: 'Script not found', 'Pointer invalid'.", "Notes": "Unofficial
troubleshooting glossary." },
    { "Title": "Creature Interaction Messages", "Context": "Thread: 'Which
mesg triggers push/pull'", "Snippet": "Documented message IDs for default
interactions.", "Notes": "Key for custom toys/food." },
    { "Title": "CAOS Object Lifetimes", "Context": "Thread: 'Kill vs Null'",
"Snippet": "Kill removes object, null pointer remains.", "Notes": "Prevented
dangling references." },
    { "Title": "Random Number Generator Notes", "Context": "Thread: 'How rand
works'", "Snippet": "Uses engine RNG seeded per session.", "Notes": "Documented
quirks in probability experiments." },
    { "Title": "CAOS Inst vs Async Debate", "Context": "Thread: 'Blocking vs
non-blocking scripts'", "Snippet": "INST ensures atomic execution but freezes
others.", "Notes": "Led to coding style guidelines." },
    { "Title": "Stack Depth Limit", "Context": "Thread: 'Max recursion
depth'", "Snippet": "Community discovered ~50 nested calls crashes.", "Notes":
"Hard technical constraint." },
    { "Title": "CAOS File I/O", "Context": "Thread: 'External file read/

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write'", "Snippet": "Commands to log/export data.", "Notes": "Basis of external
telemetry/logging agents." },
    { "Title": "Classifier Collisions", "Context": "Thread: 'Why agents
overwrite each other'", "Snippet": "Same family/genus/species causes
conflicts.", "Notes": "Best practices doc created." },
    { "Title": "Creature Script Slots", "Context":
"Thread: 'Which event slots creatures use'", "Snippet":
"Push = 1, Pull = 2, Eat = 12, etc.", "Notes":
"Essential lookup table for agent builders." },
    { "Title": "Overridden Default Scripts", "Context": "Thread: 'Replacing
game behaviors'", "Snippet": "Injecting scrp with same classifier overrides
default.", "Notes": "Allowed deep game modifications." },
    { "Title": "CAOS Telemetry Experiments", "Context": "Thread: 'Log
everything to file'", "Snippet": "Agent hooked mesg writ to CSV export.",
"Notes": "Forerunner of serious AI studies." },
    { "Title": "CAOS Crash Cases", "Context": "Thread: 'Known crash-inducing
commands'", "Snippet": "inst with infinite loops, targ null + mesg writ.",
"Notes": "Community-maintained blacklist." },
    { "Title": "Event Number Master List", "Context": "Community resource",
"Snippet": "Complete list of event numbers and meanings.", "Notes": "Staple
reference for advanced CAOS users." },
    { "Title": "CAOS Variable Scope Notes", "Context": "Thread: 'VAXx vs OVxx
vs MVxx'", "Snippet": "Local, object, and global variables explained.",
"Notes": "Essential debugging doc." },
    { "Title": "Creature Subroutine Libraries", "Context": "Thread: 'Reusable
blocks for creature scripts'", "Snippet": "Includes hunger handling, sleeping
loops.", "Notes": "Shared libraries reused in many agents." },
    { "Title": "CAOS Random Event Pack", "Context": "Thread: 'Test RNG with
stimuli'", "Snippet": "Agent spawned random events via mesg writ.", "Notes":
"Utility for testing probability distributions." },
    { "Title": "Script Execution Order", "Context": "Thread: 'Which script
runs first?'", "Snippet": "Order depends on classifier priority.", "Notes":
"Explained many strange bugs." },
    { "Title": "CAOS Learning Examples", "Context": "Thread: 'Beginner
practice scripts'", "Snippet": "Toy agent scripts shared with explanations.",
"Notes": "Canonical teaching resource." }
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"ReverseEngineering_EngineInternals": [
    { "Title": "Chemical Engine Timing", "Context": "Thread: 'How often
chemicals update'", "Snippet": "Chemicals processed every 20 ticks in update
loop.", "Notes": "Fundamental discovery for balancing metabolisms." },
    { "Title": "Chemical Half-Life Simulation", "Context": "Thread: 'Decay
rates and stability'", "Snippet": "Chemicals lose % value per tick rather than
fixed subtraction.", "Notes": "Critical for toxin, drug, and hormone design." },
    { "Title": "Brain Lobe Architecture", "Context": "Thread: 'How lobes are
wired'", "Snippet": "Input, concept, decision, and motor lobes
interconnected.", "Notes": "Community map of neural net structure." },
    { "Title": "Brain Tick Rate", "Context": "Thread: 'Lobe updates vs

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chemical updates'", "Snippet": "Lobes updated faster than chemical engine.",
"Notes": "Explained why creature learning seemed desynced." },
  { "Title": "CA Diffusion Algorithm", "Context": "Thread: 'How heat/light
spread'", "Snippet": "Diffusion modeled as adjacency averaging per tick.",
"Notes": "Reverse engineered by logging CA values." },
  { "Title": "CA Decay Rate", "Context": "Thread: 'Why heat dissipates too
fast'", "Snippet": "Global decay coefficient applied each step.", "Notes":
"Documented as reason for weak ecosystem feedbacks." },
  { "Title": "LiveGMS Project", "Context": "SourceForge: livegms release",
"Snippet": "External memory editor for game internals.", "Notes": "Allowed live
editing of genome, chems, and brain states." },
  { "Title": "LiveGMS Usage Notes", "Context": "Thread: 'How to edit genome
in RAM'", "Snippet": "Find memory address for gene block, overwrite values.",
"Notes": "Experimental but groundbreaking." },
  { "Title": "Memory Map Documentation", "Context": "Thread: 'Offsets in
world.sfc'", "Snippet": "Locations for creatures, rooms, chems.", "Notes": "Led
to external save editors." },
  { "Title": "SFC File Dissection", "Context": "Thread: 'World save
format'", "Snippet": "Serialized blocks: header, map, agent states, creature
states.", "Notes": "Reverse engineered for Community Edition." },
  { "Title": "Game Loop Analysis", "Context": "Thread: 'Tick order'",
"Snippet": "Order: input → creatures → agents → chemicals → CA diffusion.",
"Notes": "Reconstructed through debugger traces." },
  { "Title": "Performance Bottleneck Research", "Context": "Thread: 'Why
large worlds slow'", "Snippet": "CA diffusion and script queues primary
bottlenecks.", "Notes": "Spawned optimization guidelines for metarooms." },
  { "Title": "Reinforcement Signal Timing", "Context": "Thread: 'Learning
delayed reinforcement'", "Snippet": "Delay between stimulus and reward ~5
ticks.", "Notes": "Explained why conditioning failed sometimes." },
  { "Title": "Neurochemical Integration", "Context": "Thread: 'Chems
crossing into brain'", "Snippet": "Certain chems feed into reinforcement
neurons.", "Notes": "Reverse engineered reinforcement mapping." },
  { "Title": "CAOS Execution Queue", "Context": "Thread: 'How scripts
stack'", "Snippet": "Queued per object, processed round-robin.", "Notes":
"Engine constraint shaping agent efficiency." },
  { "Title": "World Reset Bug", "Context": "Thread: 'Why SFC corrupts on
reload'", "Snippet": "Corrupt pointer to creature memory block.", "Notes":
"Documented engine flaw, partly patched by CE." },
  { "Title": "Memory Poke Exploit", "Context": "Thread: 'Directly editing
creature drives'", "Snippet": "RAM poke command alters hunger instantly.",
"Notes": "Hacky debugging tool before LiveGMS matured." },
  { "Title": "Script Cache Behavior", "Context":
"Thread: 'Old scripts still firing'", "Snippet": "Script cache persists until
flush command.", "Notes": "Explained 'ghost scripts' bug." },
  { "Title": "Creature Brain Debug Agent", "Context": "Thread: 'Live brain
visualization'", "Snippet": "Overlay shows lobe activations each tick.",
"Notes": "Derived from engine memory offsets." },

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    { "Title": "Genome Mutation Timing", "Context": "Thread: 'When mutations
applied'", "Snippet": "Mutations occur at gamete creation, not fertilization.",
"Notes": "Key for selective breeding experiments." },
    { "Title": "Chemical Carryover Bug", "Context":
"Thread: 'Chems persisting after death'", "Snippet": "Certain chemicals not
cleared on export/import.", "Notes": "Documented bug, led to 'immortal
toxins'." },
    { "Title": "CA Diffusion Lag", "Context":
"Thread: 'CA values update every X ticks'", "Snippet": "CA not updated every
tick, but every ~5.", "Notes": "Explained odd mismatches in ecology agents." },
    { "Title": "Creature State Machine Notes", "Context": "Thread: 'Behavior
states'", "Snippet": "Idle, moving, interacting defined in engine.", "Notes":
"Helped debug looping and stuck states." },
    { "Title": "Pathfinding Engine Analysis", "Context": "Thread: 'Why
creatures fail ramps'", "Snippet": "Engine pathfinding limited to room graph.",
"Notes": "Could not handle overlapping geometry." },
    { "Title": "Tick Rate Scaling", "Context": "Thread: 'Game speed vs tick
speed'", "Snippet": "Fast-forward skips visual frames but not logic.", "Notes":
"Explained desync in long wolfling runs." },
    { "Title": "World SFC Editor Tool", "Context": "Forum release: World
Editor", "Snippet": "Reads SFC, edits creature list and CA values.", "Notes":
"Prototype external savegame tool." },
    { "Title": "Community Edition Engine Notes", "Context":
"Thread: 'Fixes in CE branch'", "Snippet": "Patched memory leaks, script queue
bugs.", "Notes": "Reverse engineering rolled into open fork." },
    { "Title": "Engine RNG Seed Notes", "Context": "Thread: 'World state
determinism'", "Snippet": "RNG seed stored in SFC, not global.", "Notes":
"Critical for replay consistency." },
    { "Title": "Agent Loading Order", "Context": "Thread: 'Why metaroom loads
last'", "Snippet": "PRAY packaged agents load in alphabetical order.", "Notes":
"Explained dependency failures." },
    { "Title": "Lobe Reinforcement Mapping", "Context": "Thread: 'Which chems
map to which lobes'", "Snippet": "Reward chems feed into decision reinforcement
neurons.", "Notes": "Mapped with LiveGMS brain visualizations." },
    { "Title": "World Tick Jitter", "Context": "Thread: 'Inconsistent tick
duration'", "Snippet": "Performance load changes tick duration slightly.",
"Notes": "Source of desync bugs in experiments." },
    { "Title": "Agent Memory Leaks", "Context": "Thread: 'Agents causing
slowdown'", "Snippet": "Unkilled agents persist in memory.", "Notes": "Known
engine issue, partly mitigated by CE." },
    { "Title": "CA Diffusion Wall Hack", "Context": "Thread: 'Force chemicals
through walls'", "Snippet": "Flag manipulation lets chems ignore adjacency.",
"Notes": "Used in experimental metarooms." },
    { "Title": "Creature Export/Import Bug", "Context": "Thread: 'Imported
creatures lose data'", "Snippet": "Certain gene blocks not reloaded
correctly.", "Notes": "Led to patched exporters." },
    { "Title": "Chem ID Master List", "Context": "Community resource",
"Snippet": "List of chemical numbers and functions.", "Notes":

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"Staple reference for genome and agent builders." }
],
"ReverseEngineering_Conversions": [
  { "Title": "BMP → C16 Workflow", "Context":
    "Thread: 'How to build sprites from bitmaps'", "Snippet": "Paint frames as BMP,
    convert via Sprite Builder to C16.", "Notes": "Canonical graphics pipeline
    before PNG tools." },
    { "Title": "PNG → C16 Command Line Tool", "Context": "Thread: 'Cross-
    platform converter release'", "Snippet":
    "Accepts PNG sequence, outputs C16 with headers.", "Notes":
    "Opened breed dev to non-Windows OSes." },
    { "Title": "C16 → PNG Python Script", "Context":
    "Thread: 'Dump sprites to PNG'", "Snippet": "Read header, loop frames, export
    PNGs with alpha.", "Notes": "Script repeatedly cited as reference." },
    { "Title": "BMP Naming Standards", "Context": "Community resource",
    "Snippet": "Use padded numbers (0001, 0002) for frame order.", "Notes":
    "Avoided sprite import misordering." },
    { "Title": "C16 Batch Export Utility", "Context": "Tool release thread",
    "Snippet": "Drag multiple C16 files, mass converts to PNGs.", "Notes": "Popular
    with breed artists doing large sets." },
    { "Title": "Sprite Transparency Pipeline", "Context": "Thread: 'Fixing
    black background issue'", "Snippet": "Requires explicit alpha or magenta key.",
    "Notes": "Major early pitfall, well documented." },
    { "Title": "Animated GIF Previews", "Context": "Thread: 'Preview breeds
    outside game'", "Snippet": "Converted C16 to GIF for web previews.", "Notes":
    "Enabled online breed showcases." },
    { "Title": "ATT Auto-Align Script", "Context": "Thread: 'Script generates
    ATT from PNG overlay'", "Snippet": "Calculates offsets from anchor image.",
    "Notes": "Saved massive dev time for new breeds." },
    { "Title": "PRAY Decompiler Tool", "Context": "Thread: 'Unpack agent
    files'", "Snippet": "Extracts sprites, sounds, scripts, ATT.", "Notes":
    "Enabled learning by deconstructing existing mods." },
    { "Title": "World SFC Editor", "Context": "Forum release: external save
    editor", "Snippet": "Opens world.sfc, edits creature list, CA states.",
    "Notes": "Allowed manual world patching." },
    { "Title": "WAV → MNG Conversion Notes", "Context":
    "Thread: 'How DS plays sounds'", "Snippet": "Sound effects stored as WAV, music
    looped as MNG.", "Notes": "Reverse engineered for custom sound agents." },
    { "Title": "MNG Player Experiments", "Context":
    "Thread: 'Embedding custom music'", "Snippet": "Custom MNG failed without
    specific headers.", "Notes": "Documented quirks of game's media pipeline." },
    { "Title": "Cross-Game Sprite Conversion", "Context": "Thread: 'Using C1/
    C2 sprites in C3'", "Snippet": "Required re-indexing palette and ATT rebuild.",
    "Notes": "Key workflow for retro-import packs." },
    { "Title": "Genome Export/Import Tool", "Context": "Thread: 'Modify .gen
    files directly'", "Snippet": "Tool dumped genome to text, recompiled to .gen.",
    "Notes": "Prototype external genetic toolkit." },

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    { "Title": "Cross-Game Genome Conversion", "Context": "Thread: 'C2 genome
→ C3 format'", "Snippet": "Partial success converting loci and chemicals.",
"Notes": "Community experiment for hybrid breeds." },
    { "Title": "External Log Export Agent", "Context": "Thread: 'Write CAOS
data to CSV'", "Snippet": "Agent writes creature states to disk.", "Notes":
"Formed early telemetry pipeline." },
    { "Title": "LiveGMS Export Workflow", "Context": "Thread: 'Dump live RAM
values'", "Snippet": "Used to snapshot chemical levels to text file.", "Notes":
"Extended engine visibility." },
    { "Title": "Script Text Exporter", "Context": "Thread: 'Dump all scripts
to file'", "Snippet": "Iterates through scrp registry, writes to disk.",
"Notes": "Basis of script auditing projects." },
    { "Title": "Batch PRAY Compiler", "Context": "Thread: 'Automate agent
packaging'", "Snippet": "Shell script compiles multiple PRAY files at once.",
"Notes": "Improved dev efficiency for large packs." },
    { "Title": "ATT Batch Adjuster", "Context": "Thread: 'Shift offsets en
masse'", "Snippet": "Python tool applies global correction.", "Notes":
"Critical for scaling breed sets." },
    { "Title": "Sound Import Utilities", "Context": "Thread: 'Custom DS sound
agents'", "Snippet": "Docs on WAV format restrictions (16-bit PCM).", "Notes":
"Prevented crashes on sound injection." },
    { "Title": "Creature Portrait Export Tool", "Context": "Thread: 'Save
portraits to PNG'", "Snippet": "Dumped exported creatures' headshots.",
"Notes": "Useful for documenting lineage." },
    { "Title": "Lineage Text Dumper", "Context": "Thread: 'Export family
trees'", "Snippet": "Reads exported .exp file, outputs genealogy tree.",
"Notes": "Foundation of third-party lineage visualizers." },
    { "Title": "CA Graph Export Pipeline", "Context": "Thread: 'Graph CA
values over time'", "Snippet": "Agent logged CAs, Python script plotted them.",
"Notes": "Helped ecological balancing projects." },
    { "Title": "Creature State Export Agent", "Context": "Thread: 'Live
telemetry'", "Snippet": "Dumped OVxx variables to file each tick.", "Notes":
"Forerunner of long-term wolfling run monitoring." },
    { "Title": "Import Bugfix Utility", "Context": "Thread: 'Fix broken .exp
files'", "Snippet": "Repaired headers of corrupted exports.", "Notes": "Vital
for preserving historic genomes." },
    { "Title": "PRAY → Text Decompiler", "Context": "Thread: 'Reverse compile
to editable text'", "Snippet": "Tool recovered editable PRAY source.", "Notes":
"Important for reusing abandoned projects." },
    { "Title": "Agent Sound Replacement Hack", "Context": "Thread: 'Replace
sounds in shipped agents'", "Snippet": "Unpack PRAY, swap WAVs, repack.",
"Notes": "DIY modding before full editors." },
    { "Title": "World State Telemetry Pack", "Context": "Thread: 'Log
ecosystem balance'", "Snippet": "Bundle of agents and scripts to track chems/
CA.", "Notes": "Widely used in ecological experiments." },
    { "Title": "External Visualization Pipeline", "Context": "Thread:
'Plotting brain lobe activity'", "Snippet": "Exported lobe activation data,

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graphed in Excel.", "Notes": "Key for neuro-behavioral studies." },
  { "Title": "Cross-Platform Audio Tools", "Context": "Thread: 'Linux sound
conversion'", "Snippet": "Suggested open-source tools for DS-compatible WAVs.",
"Notes": "Broadened dev reach beyond Windows." },
  { "Title": "Export Creature Metadata", "Context": "Thread: 'Extra data
in .exp files'", "Snippet": "Found hidden block with gender, parents, age.",
"Notes": "Reverse engineering gem for lineage utilities." },
  { "Title": "Custom PRAY Packaging Scripts", "Context": "Thread:
'Automating with Python'", "Snippet": "Script wrapped PRAY compiler for
reproducible builds.", "Notes": "Inspired modern automated pipelines." },
  { "Title": "Batch Portrait Injector", "Context": "Thread: 'Replace
exported portraits'", "Snippet": "Utility for mass portrait replacement in .exp
files.", "Notes": "Allowed visual consistency in projects." },
  { "Title": "Sprite Cross-Compatibility Tests", "Context":
"Thread: 'C16 vs S16 agent compatibility'", "Snippet": "Certain agent loaders
only read C16.", "Notes": "Important for packaging best practices." }
],
"Genetics_Biology_CanonicalGenomes": [
  {
    "Title": "CFF (Creatures Full of Fixes) Norns",
    "Context": "Community release & forum project",
    "Snippet": "Genome overhaul correcting hundreds of errors in stock DS
breeds.",
    "Notes":
"Standardized base for most modern wolfling runs. Fixed hunger, instincts,
reproductive loops."
  },
  {
    "Title": "CFF Documentation Pack",
    "Context": "Thread: 'List of all CFF changes'",
    "Snippet": "Fixes listed: corrected hormone loops, drive decay, brain
links.",
    "Notes": "Definitive change log used as teaching resource."
  },
  {
    "Title": "TWB (True Warm Blooded) Norns",
    "Context": "Forum project release",
    "Snippet": "Adds heat regulation, proper thermoregulation system.",
    "Notes": "Introduced temperature homeostasis to creatures."
  },
  {
    "Title": "TWB Technical Notes",
    "Context": "Thread: 'How TWB metabolism works'",
    "Snippet": "Uses heat chemical, environmental CA values, metabolic
conversion.",
    "Notes": "Explains design decisions and balancing."
  },
  {

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    "Title": "TCB (True Cold Blooded) Norns",
    "Context": "Community experiment",
    "Snippet": "Genomes designed to function like reptiles/amphibians.",
    "Notes": "Contrasts with TWB; learning tool for ecological balance."
  },
  {
    "Title": "2017 Genomes",
    "Context": "Forum release project",
    "Snippet": "CFF-derived, cleaned and updated for stability and
realism.",
    "Notes": "Became community default after CFF matured."
  },
  {
    "Title": "2017 Genome Documentation",
    "Context": "Thread: 'Full change list'",
    "Snippet": "Summarizes key fixes: drive rates, fertility, instinct
balance.",
    "Notes": "Resource for advanced genetic developers."
  },
  {
    "Title": "Geat Genome Fixes",
    "Context": "Community project",
    "Snippet": "Applied CFF-style fixes to Geats.",
    "Notes": "Unified all official breeds under improved genetics."
  },
  {
    "Title": "Ettin Genome Fixes",
    "Context": "Thread: 'Making Ettins viable'",
    "Snippet": "Rewired instincts, drives, reproductive cycles.",
    "Notes": "Improved AI, made them less passive."
  },
  {
    "Title": "Grendel Genome Fixes",
    "Context": "Thread: 'Friendly Grendels'",
    "Snippet": "Altered aggression genes, drive system.",
    "Notes": "Created playable Grendel variants."
  },
  {
    "Title": "Hybrid Genome Experiments",
    "Context": "Forum experiments",
    "Snippet": "Crossed TWB with CFF, tested emergent behavior.",
    "Notes": "Benchmark case studies for genome modding."
  },
  {
    "Title": "CFF Breeding Project",
    "Context": "Thread: 'Running 10 generations of CFF'",
    "Snippet": "Studied long-term stability of genome.",
    "Notes": "Created benchmark for future wolfling runs."
  }

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},
{
  "Title": "Genome Comparison Utilities",
  "Context": "Community resources",
  "Snippet": "Tools diff two genomes, show gene-level changes.",
  "Notes": "Used heavily in CFF/TWB/TCB development."
},
{
  "Title": "CFF → 2017 Upgrade Guide",
  "Context": "Forum post",
  "Snippet": "Instructions for migrating existing worlds.",
  "Notes": "Ensured compatibility for legacy players."
},
{
  "Title": "Genetic Engineering Debates",
  "Context": "Thread: 'How far to fix base breeds'",
  "Snippet": "Arguments about realism vs tradition.",
  "Notes": "Snapshot of community philosophy."
},
{
  "Title": "TWB vs TCB Ecology Threads",
  "Context": "Forum experiments",
  "Snippet": "Ran mixed-population experiments.",
  "Notes": "Showed emergent predator/prey dynamics."
},
{
  "Title": "CFF Tutorial Threads",
  "Context": "Community teaching threads",
  "Snippet": "Walkthrough: identifying and correcting bad genes.",
  "Notes": "Standard on-ramp for genome hackers."
},
{
  "Title": "2017 Breeding Logs",
  "Context": "Thread: '10 generations of 2017 Norns'",
  "Snippet": "Detailed lineage tracking.",
  "Notes": "Used as stress test of genome fixes."
},
{
  "Title": "Genome Toolkit Integration",
  "Context": "Thread: 'Which tools for which genome'",
  "Snippet": "Suggested: Genetics Kit, third-party editors, diff tools.",
  "Notes": "Made genome projects reproducible."
},
{
  "Title": "Documentation Mirrors",
  "Context": "Community archiving",
  "Snippet": "PDF/HTML mirrors of genome change logs.",

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    "Notes": "Ensures preservation of canonical projects."
  }
],
"Genetics_Biology_Experimental": [
  {
    "Title": "Toxic Norn Genome",
    "Context": "Community project",
    "Snippet": "Creatures generate their own toxins, environment acts as
cure.",
    "Notes": "Explored inverted metabolic system."
  },
  {
    "Title": "Antibody Organ Experiment",
    "Context": "Thread: 'Adding immune organs'",
    "Snippet": "Inserted new organ that produces antibody chemicals.",
    "Notes": "Prototype for simulated immune systems."
  },
  {
    "Title": "Aggressive Instinct Rewrite",
    "Context": "Thread: 'Make Grendels predatory'",
    "Snippet": "Modified instincts to hunt Norns.",
    "Notes": "Example of behavioral modding."
  },
  {
    "Title": "Pacifist Genome",
    "Context": "Community resource",
    "Snippet": "Removed fight instincts, rewired anger drive.",
    "Notes": "Made cross-species coexistence possible."
  },
  {
    "Title": "Photosynthetic Norns",
    "Context": "Thread: 'Can creatures eat sunlight?'",
    "Snippet": "Organ consumes light CA, generates glycogen.",
    "Notes": "Early eco-variant experiment."
  },
  {
    "Title": "Oxygen Breathing Ettins",
    "Context": "Thread: 'Add oxygen need'",
    "Snippet": "Organ consumes oxygen chem, failure leads to
unconsciousness.",
    "Notes": "Prototype environmental dependency genome."
  },
  {
    "Title": "Carnivorous Grendels",
    "Context": "Thread: 'Meat-only diet'",
    "Snippet": "Food instinct restricted to flesh objects.",
    "Notes": "Ecology experiment, required custom food agents."
  },
],

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{
  "Title": "Amphibious Genome Mod",
  "Context": "Thread: 'Water-breathing norns'",
  "Snippet": "Rewired lung organ to consume water chemical instead of
air.",
  "Notes": "One of the earliest environmental genome mods."
},
{
  "Title": "Fertility Organ Adjustments",
  "Context": "Thread: 'Fixing ovulation timing'",
  "Snippet": "Hormone cycles smoothed for breeding stability.",
  "Notes": "Direct organ-level tuning for genetics."
},
{
  "Title": "Aging Rate Experiments",
  "Context": "Thread: 'Slowing down life stages'",
  "Snippet": "Genome modified to extend childhood/adulthood.",
  "Notes": "Popular among long-run players."
},
{
  "Title": "Chemical Overhaul Pack",
  "Context": "Community release",
  "Snippet": "Redefined toxin/medicine/drive chemicals across species.",
  "Notes": "Used as base in several genome forks."
},
{
  "Title": "Sleep Cycle Organ",
  "Context": "Thread: 'True circadian rhythm'",
  "Snippet": "Added organ controlling wake/sleep cycles.",
  "Notes": "Experimental but buggy."
},
{
  "Title": "Radiation Poison Genome",
  "Context": "Thread: 'Radiation organ test'",
  "Snippet": "New toxin tied to metaroom CA diffusion.",
  "Notes": "Linked environment to organism health."
},
{
  "Title": "Drive Conflict Study",
  "Context": "Thread: 'What if hunger and sleep conflict'",
  "Snippet": "Intentionally rewired competing drives.",
  "Notes": "Used as stress test for brain learning."
},
{
  "Title": "Chemical Addiction Genome",
  "Context": "Community experiment",
  "Snippet": "Added reward chemicals linked to toxins.",
  "Notes": "Simulated addictive behaviors."
}

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},
{
  "Title": "Overfed Norn Testbed",
  "Context": "Thread: 'Obesity mechanics'",
  "Snippet": "High fat metabolism → reduced fertility.",
  "Notes": "Worked as proof-of-concept for complex physiology."
},
{
  "Title": "Nutrient Complexity Genome",
  "Context": "Thread: 'Split glycogen into carbs/fats/proteins'",
  "Snippet": "Added multiple nutrient chems with distinct conversion.",
  "Notes": "Sophisticated metabolic rewrite."
},
{
  "Title": "Cold-Resistant Genome",
  "Context": "Thread: 'Polar Norns'",
  "Snippet": "Tweaked thermoregulation to tolerate cold climates.",
  "Notes": "Paired with arctic metaroom mods."
},
{
  "Title": "Heat-Resistant Genome",
  "Context": "Thread: 'Desert Ettins'",
  "Snippet": "Opposite of Polar; sustained higher body heat.",
  "Notes": "Used in desert ecology testbeds."
},
{
  "Title": "Neurochemical Drive Shift",
  "Context": "Thread: 'Anger drives learning'",
  "Snippet": "Repurposed anger drive to reinforce learning.",
  "Notes": "Showed how flexible genome-chem links were."
},
{
  "Title": "Predator-Prey Simulation",
  "Context": "Community project",
  "Snippet": "Norns tuned as prey, Grendels tuned as predators.",
  "Notes": "Famous ecology experiment run for months."
},
{
  "Title": "Symbiotic Genome Experiment",
  "Context": "Thread: 'Species depend on each other'",
  "Snippet": "Norns produce chems needed by Ettins.",
  "Notes": "Conceptual but partially implemented."
},
{
  "Title": "Artificial Hormone Cycles",
  "Context": "Thread: 'Seasonal fertility'",
  "Snippet": "Breeding tied to simulated seasons.",

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    "Notes": "Required custom CA injection agents."
  },
  {
    "Title": "Minimalist Genome",
    "Context": "Community challenge",
    "Snippet": "Stripped genome down to core drives/instincts.",
    "Notes": "Tested how simple a viable creature could be."
  },
  {
    "Title": "Hyper-Intelligent Genome",
    "Context": "Thread: 'Boosted learning rates'",
    "Snippet": "Brain lobe sensitivity increased tenfold.",
    "Notes": "Created 'super-learning' Norns."
  },
  {
    "Title": "Epigenetic Toggle Experiment",
    "Context": "Thread: 'Genes activated/deactivated in life'",
    "Snippet": "Manual CAOS triggers modified genome expression.",
    "Notes": "Theoretical step toward epigenetics."
  },
  {
    "Title": "Sleep Deprivation Study",
    "Context": "Forum log",
    "Snippet": "Genome modified to resist sleep drive.",
    "Notes": "Observed rapid decline and health crashes."
  },
  {
    "Title": "Non-Breeding Genome",
    "Context": "Community request",
    "Snippet": "Removed fertility genes entirely.",
    "Notes": "Used for stable static populations."
  },
  {
    "Title": "Genderless Genome",
    "Context": "Thread: 'Single-sex creatures'",
    "Snippet": "Both sexes made self-fertile.",
    "Notes": "Explored alternate reproductive models."
  },
  {
    "Title": "Wolfling Run Optimized Genome",
    "Context": "Community release",
    "Snippet": "Reduced mutations that caused extinction.",
    "Notes": "Made stable long-term automated runs possible."
  },
  {
    "Title": "Organ Failure Simulation",
    "Context": "Thread: 'Introduce organ mortality'",
    "Snippet": "Organs degrade with age, failing over time."
  }

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    "Notes": "Added realism at cost of stability."
  },
  {
    "Title": "Disease-Centric Genome",
    "Context": "Thread: 'Pathogen simulation attempt'",
    "Snippet": "Added susceptibility to introduced toxin agents.",
    "Notes": "Conceptual groundwork for future 'plague' mods."
  },
  {
    "Title": "Immortal Genome",
    "Context": "Community experiment",
    "Snippet": "Disabled aging entirely.",
    "Notes": "Created eternal creatures for lab testing."
  },
  {
    "Title": "Asexual Reproduction Test",
    "Context": "Thread: 'Self-cloning Norns'",
    "Snippet": "Genome mod to spawn offspring solo.",
    "Notes": "Partially successful, glitchy."
  },
  {
    "Title": "Hybrid Cross-Breeding Pack",
    "Context": "Community experiment",
    "Snippet": "Genomes tuned for fertile cross-breeds between species.",
    "Notes": "Explored Grendel/Norn lineages."
  }
],
"Genetics_Biology_Tools_Research": [
  {
    "Title": "Official Genetics Kit",
    "Context": "Game-provided tool",
    "Snippet": "Allows direct editing of genome files (.gen).",
    "Notes": "Primary editor, but unstable with advanced genomes."
  },
  {
    "Title": "Genome Diff Utility",
    "Context": "Community release",
    "Snippet": "Compares two genome files, highlights gene-level
differences.",
    "Notes": "Used in CFF/TWB/2017 development."
  },
  {
    "Title": "Genetic Visualizer",
    "Context": "Forum project",
    "Snippet": "Plots genome structures as graphs for easier comparison.",
    "Notes": "Converted raw data into interpretable networks."
  }
]

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    "Title": "Gene Text Exporter",
    "Context": "Community script",
    "Snippet": "Exports genome to editable plain-text format.",
    "Notes": "Enabled version control with Git and diffing tools."
  },
  {
    "Title": "Genome Batch Mutator",
    "Context": "Thread: 'Automated mutations'",
    "Snippet": "Tool applies random mutations across genome libraries.",
    "Notes": "Useful for mass experimental breeding projects."
  },
  {
    "Title": "Graphical Locus Mapper",
    "Context": "Forum project",
    "Snippet": "Displays all loci in genome visually on a chart.",
    "Notes": "Clarified interdependencies between genes."
  },
  {
    "Title": "Gene Integrity Checker",
    "Context": "Community release",
    "Snippet": "Scans genome for invalid loci or broken links.",
    "Notes": "Prevented corruption in experimental genomes."
  },
  {
    "Title": "Mutator + Logger Pack",
    "Context": "Thread: 'Track every mutation'",
    "Snippet": "Applies mutations, writes change log to file.",
    "Notes": "Popular for wolfling runs with generational studies."
  },
  {
    "Title": "Neuro-Lobe Logger",
    "Context": "Community agent",
    "Snippet": "Logs brain lobe activity each tick for study.",
    "Notes": "Bridged genetics experiments with neural activity data."
  },
  {
    "Title": "Drive Reinforcement Tracker",
    "Context": "Forum resource",
    "Snippet": "Records reinforcement chems triggered by stimuli.",
    "Notes": "Helped identify broken instinct loops."
  },
  {
    "Title": "Breeding Lineage Tracker",
    "Context": "Community tool",
    "Snippet": "Logs genealogical trees and exports to visual formats.",
    "Notes": "Used in many multi-generation studies."
  },
  {

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    "Title": "Mutational Load Studies",
    "Context": "Thread: 'Generational genome drift'",
    "Snippet": "Tracked deleterious mutations over 20+ generations.",
    "Notes": "Documented extinction trends."
  },
  {
    "Title": "Selective Breeding Logs",
    "Context": "Community reports",
    "Snippet": "Detailed documentation of long breeding experiments.",
    "Notes": "Examples of artificial selection projects."
  },
  {
    "Title": "Lineage Visualizer Tools",
    "Context": "Forum utilities",
    "Snippet": "Generates family trees from exported creatures.",
    "Notes": "Integrated into research threads."
  },
  {
    "Title": "Metabolic Balance Simulations",
    "Context": "Community project",
    "Snippet": "Spreadsheet models of chemical pathways.",
    "Notes": "Benchmarked against in-game observations."
  },
  {
    "Title": "Organ Efficiency Logger",
    "Context": "Forum experiment",
    "Snippet": "Agent outputs performance stats of each organ.",
    "Notes": "Revealed organ degradation bugs."
  },
  {
    "Title": "Long-Run Wolfling Telemetry",
    "Context": "Thread: '500 hour wolfling run logs'",
    "Snippet": "Logged births, deaths, mutations, chems.",
    "Notes": "Massive dataset used to stress-test genomes."
  },
  {
    "Title": "Genome Cross-Compatibility Tests",
    "Context": "Community experiments",
    "Snippet": "Imported C2 genomes into C3 framework.",
    "Notes": "Partially successful, created hybrid experiments."
  },
  {
    "Title": "Data-Driven Genome Review",
    "Context": "Thread: 'Statistical analysis of genome changes'",
    "Snippet": "Graphs of mutation frequency, organ failure, fertility
decline.",
    "Notes": "Applied quantitative methods to genome hacking."
  },
  },

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{
  "Title": "Open Genetics Archive",
  "Context": "Community resource",
  "Snippet": "Centralized repository of experimental genomes.",
  "Notes": "Preserved otherwise lost projects."
},
{
  "Title": "Wolfling Run Data Standard",
  "Context": "Forum proposal",
  "Snippet": "Standardized CSV export schema for runs.",
  "Notes": "Enabled cross-study comparisons."
},
{
  "Title": "TWB Research Logs",
  "Context": "Thread series",
  "Snippet": "Documents iterative testing of TWB organ systems.",
  "Notes": "Used by later projects as baseline."
},
{
  "Title": "2017 Genome Testing Logs",
  "Context": "Forum log",
  "Snippet": "Shows stability testing over dozens of hours.",
  "Notes": "Benchmark dataset for stability claims."
},
{
  "Title": "Mutation Rate Logger",
  "Context": "Community agent",
  "Snippet": "Counts new mutations per generation.",
  "Notes": "Statistical basis for balancing mutation settings."
},
{
  "Title": "Gene Graph Builder",
  "Context": "Tool release",
  "Snippet": "Exports genome relationships into DOT/Graphviz.",
  "Notes": "Enabled clear visualization of complex genomes."
},
{
  "Title": "Chemical Logger",
  "Context": "Community tool",
  "Snippet": "Outputs chemical levels of all creatures in world.",
  "Notes": "Used to benchmark metabolic rewires."
},
{
  "Title": "Genome Toolkit Collection",
  "Context": "Forum package",
  "Snippet": "Bundled multiple utilities: diff, logger, checker.",
  "Notes": "Go-to pack for serious geneticists."
},

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{
  "Title": "Epigenetic Simulation Log",
  "Context": "Thread: 'Track gene toggling attempts'",
  "Snippet": "Shows partial success using CAOS for toggling.",
  "Notes": "Experimental groundwork for future tools."
},
{
  "Title": "Comparative Genome Studies",
  "Context": "Forum logs",
  "Snippet": "Side-by-side breeding tests: CFF vs 2017 vs TWB.",
  "Notes": "Formed community consensus on best genome sets."
},
{
  "Title": "Gene Mutation Visualizer",
  "Context": "Community project",
  "Snippet": "Heatmap showing mutation hotspots across generations.",
  "Notes": "Graphical approach to evolutionary tracking."
}
],
"Genetics_Biology_ShowcaseOddball": [
  {
    "Title": "Blind Norn Genome",
    "Context": "Forum challenge project",
    "Snippet": "Removed vision lobe inputs to test survival without sight.",
    "Notes": "Creatures navigated poorly, but partially viable."
  },
  {
    "Title": "Deaf Genome",
    "Context": "Community experiment",
    "Snippet": "Removed auditory inputs, left visual and tactile intact.",
    "Notes": "Used as brain plasticity experiment."
  },
  {
    "Title": "Albino Genome",
    "Context": "Showcase release",
    "Snippet": "Pigmentation genes removed, creatures pale.",
    "Notes": "Genetic twist with cosmetic and subtle metabolic impacts."
  },
  {
    "Title": "Obesity Challenge Line",
    "Context": "Community contest",
    "Snippet": "Genome engineered to gain weight excessively.",
    "Notes": "Stability test for food/drive balance."
  },
  {
    "Title": "Fast Aging Genome",
    "Context": "Forum project",
    "Snippet": "Life stages compressed to hours.",

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    "Notes": "Popular for short experimental runs."
  },
  {
    "Title": "Tiny Genome",
    "Context": "Showcase",
    "Snippet": "Creatures never grow past child scale.",
    "Notes": "Exposed limits of scaling genetics."
  },
  {
    "Title": "Giant Genome",
    "Context": "Community release",
    "Snippet": "Upscaled ATT/sprite/gene size parameters.",
    "Notes": "Required sprite/ATT compatibility hacks."
  },
  {
    "Title": "Flight Gene Experiment",
    "Context": "Thread: 'Creatures with wings'",
    "Snippet": "Added organ that manipulates physics forces.",
    "Notes": "Partially successful using CAOS boosts."
  },
  {
    "Title": "Aquatic Genome Line",
    "Context": "Forum contest",
    "Snippet": "Tweaked lung and organ systems for underwater living.",
    "Notes": "Spawned multiple underwater wolfling runs."
  },
  {
    "Title": "No-Instinct Genome",
    "Context": "Community challenge",
    "Snippet": "Stripped all instincts, left only learning.",
    "Notes": "Creatures raised with blank-slate neural training."
  },
  {
    "Title": "Hyper-Fertile Genome",
    "Context": "Showcase release",
    "Snippet": "Reproduction cycle dramatically shortened.",
    "Notes": "Used for mass breeding stress tests."
  },
  {
    "Title": "Long-Lived Elders",
    "Context": "Community experiment",
    "Snippet": "Extended elder stage indefinitely.",
    "Notes": "Elders remained fertile and mobile."
  },
  {
    "Title": "Cannibal Norns",
    "Context": "Forum oddball release",
    "Snippet": "Food instinct replaced with 'eat Norn'.",

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    "Notes": "Disturbing but influential ecology experiment."
  },
  {
    "Title": "Vampiric Genome",
    "Context": "Showcase",
    "Snippet": "Health restored by feeding on others.",
    "Notes": "Implemented by siphoning drives via CAOS."
  },
  {
    "Title": "Photosynthesis Contest Entries",
    "Context": "Community contest archive",
    "Snippet": "Multiple attempts at solar-powered organs.",
    "Notes": "Different approaches compared in forum thread."
  },
  {
    "Title": "Zombie Norns",
    "Context": "Halloween event project",
    "Snippet": "Creatures reanimated after death trigger.",
    "Notes": "Required hacked aging and organ resets."
  },
  {
    "Title": "Exploding Genome",
    "Context": "Joke project",
    "Snippet": "Organ releases massive toxins at age threshold.",
    "Notes": "Intentionally catastrophic genome."
  },
  {
    "Title": "Albino Grendels",
    "Context": "Showcase line",
    "Snippet": "Cosmetic gene edits, behavioral tweaks minimal.",
    "Notes": "Popular re-skin line."
  },
  {
    "Title": "Symbiotic Oddball Project",
    "Context": "Forum log",
    "Snippet": "Engineered pairs of creatures dependent on each other.",
    "Notes": "Shared chemical reinforcement loops."
  },
  {
    "Title": "Minimalist Genome Contest Entries",
    "Context": "Community event",
    "Snippet": "Challenge: build genome with as few genes as possible.",
    "Notes": "Several creative entries logged."
  },
  {
    "Title": "Aggression Contest Line",
    "Context": "Community competition",
    "Snippet": "Tweaked anger/fear reinforcement.",

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    "Notes": "Used to compare emergent social dynamics."
  },
  {
    "Title": "Flightless Grendels",
    "Context": "Showcase tweak",
    "Snippet": "Disabled unused locomotor genes.",
    "Notes": "Educational genome demonstrating 'negative edits'."
  },
  {
    "Title": "Inverted Drives Genome",
    "Context": "Oddball release",
    "Snippet": "Hunger decreased when eating, increased otherwise.",
    "Notes": "Tested limits of drive logic."
  },
  {
    "Title": "Echo-Locating Genome",
    "Context": "Experimental showcase",
    "Snippet": "Auditory input reinforced navigation.",
    "Notes": "Attempted sonar simulation."
  },
  {
    "Title": "Fireproof Genome",
    "Context": "Oddball entry",
    "Snippet": "Removed heat damage pathways.",
    "Notes": "Paired with fire-themed metarooms."
  },
  {
    "Title": "Ephemeral Genome",
    "Context": "Forum joke",
    "Snippet": "Creatures die within minutes.",
    "Notes": "Became reference for 'short-life' genome hacks."
  },
  {
    "Title": "Super-Fast Reproducers",
    "Context": "Showcase",
    "Snippet": "Fertility gene exaggerated to seconds.",
    "Notes": "Wolfling run stress test genome."
  },
  {
    "Title": "Behavior-Inverted Norns",
    "Context": "Oddball project",
    "Snippet": "Fear stimuli rewarded, comfort punished.",
    "Notes": "Radical inversion experiment."
  },
  {
    "Title": "Color Morph Genomes",
    "Context": "Showcase collection",
    "Snippet": "Pigment genes altered for rainbow breeds."
  }

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    "Notes": "Mostly cosmetic, but widely shared."
  },
  {
    "Title": "Seasonal Genome Contest",
    "Context": "Community event",
    "Snippet": "Breeds tied to simulated seasonal cycles.",
    "Notes": "Led to environmental genome innovation."
  }
],
"Genetics_Biology_Ecosystems": [
  {
    "Title": "Mixed-Species Wolfling Run Logs",
    "Context": "Forum project",
    "Snippet":
      "TWB Norns, Ettins, and Grendels run together for hundreds of hours.",
    "Notes": "Documented emergent predator-prey dynamics."
  },
  {
    "Title": "Grendel/Norn Hybrid Line",
    "Context": "Community experiment",
    "Snippet": "Multiple generations of fertile Grendel-Norn crosses.",
    "Notes": "Proved genetic compatibility across species."
  },
  {
    "Title": "CFF vs 2017 Stability Test",
    "Context": "Forum log",
    "Snippet": "Ran parallel wolfling runs comparing extinction risk.",
    "Notes": "Benchmark case study for genome preference."
  },
  {
    "Title": "Predator-Prey Ecology Simulation",
    "Context": "Community long run",
    "Snippet": "Grendels tuned as predators, Norns as prey, Ettins as
      scavengers.",
    "Notes": "One of the most-cited ecology experiments."
  },
  {
    "Title": "Wolfling Run 1000-Hour Dataset",
    "Context": "Forum post series",
    "Snippet": "Tracked population counts, mutations, fertility decline.",
    "Notes": "Raw CSV logs shared for research."
  },
  {
    "Title": "Island Ecology Mod",
    "Context": "Community project",
    "Snippet": "Multiple genomes isolated in custom metarooms.",
    "Notes": "Simulated island biogeography dynamics."
  }
],

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{
  "Title": "Disease Spread Simulation",
  "Context": "Forum run",
  "Snippet": "Released custom toxin agent into wolfling run.",
  "Notes": "Studied disease resistance in evolving genomes."
},
{
  "Title": "High-Mutation Wolfling Runs",
  "Context": "Community reports",
  "Snippet": "Mutation rates exaggerated to drive rapid evolution.",
  "Notes": "Resulted in multiple novel behaviors."
},
{
  "Title": "Low-Mutation Stability Runs",
  "Context": "Forum reports",
  "Snippet": "Genome integrity preserved, minimal drift.",
  "Notes": "Used to test long-term species viability."
},
{
  "Title": "Competitive Ecology Challenges",
  "Context": "Community contests",
  "Snippet": "Multiple users submitted breeds for joint wolfling run.",
  "Notes": "Compared survival under identical conditions."
},
{
  "Title": "Carnivore vs Herbivore Lines",
  "Context": "Forum ecology project",
  "Snippet": "Custom genome sets tuned for dietary specialization.",
  "Notes": "Demonstrated emergent food web."
},
{
  "Title": "Ecosystem Balance Studies",
  "Context": "Community research",
  "Snippet": "Logged CA levels, population crashes, recovery cycles.",
  "Notes": "One of the first data-driven ecology studies."
},
{
  "Title": "Multi-Room Population Splits",
  "Context": "Forum project",
  "Snippet": "Different genome lines placed in separate metarooms.",
  "Notes": "Showed divergence under spatial isolation."
},
{
  "Title": "Import/Export Breeding Exchange",
  "Context": "Community event",
  "Snippet": "Players swapped exported creatures, bred across worlds.",
  "Notes": "Resulted in hybrid population lines."
},

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{
  "Title": "Population Collapse Analysis",
  "Context": "Forum log",
  "Snippet": "Tracked reasons for extinction events.",
  "Notes": "Key findings: fertility loops, broken instincts, chemical
overload."
},
{
  "Title": "Mass Breeding Contest",
  "Context": "Community challenge",
  "Snippet": "Who can sustain largest population longest.",
  "Notes": "Produced rich comparative data."
},
{
  "Title": "Ecological Niche Genomes",
  "Context": "Forum project",
  "Snippet": "Custom genomes designed for different niches (predator,
scavenger, grazer).",
  "Notes": "Worked as artificial food web."
},
{
  "Title": "Cross-Game Wolfling Run",
  "Context": "Community experiment",
  "Snippet": "Imported C2 creatures into C3/DS ecology.",
  "Notes": "Limited compatibility, but partial success."
},
{
  "Title": "Wolfling Run Data Archive",
  "Context": "Community resource",
  "Snippet": "Centralized storage of long-run logs.",
  "Notes": "Preserved otherwise ephemeral datasets."
},
{
  "Title": "Behavioral Divergence Studies",
  "Context": "Forum reports",
  "Snippet": "Parallel wolfling runs showed divergence by 10th
generation.",
  "Notes": "Demonstrated genetic drift in practice."
},
{
  "Title": "Artificial Selection Experiments",
  "Context": "Community logs",
  "Snippet": "Breeding for traits: obedience, size, fertility.",
  "Notes": "Practical application of selective breeding in-game."
},
{
  "Title": "Wolfling Run Optimization Threads",
  "Context": "Forum advice",

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    "Snippet": "Tips for world setup, room design, genome choice.",
    "Notes": "Became handbook for long-term stability."
  },
  {
    "Title": "Multi-User Shared Wolfling Run",
    "Context": "Community project",
    "Snippet": "Save files passed between players, cumulative generations.",
    "Notes": "Blended collaborative breeding with research."
  },
  {
    "Title": "Extreme Environmental Runs",
    "Context": "Forum projects",
    "Snippet": "Populations exposed to fire, freezing, toxins.",
    "Notes": "Stress-tested genome resilience."
  },
  {
    "Title": "Comparative Ecology Threads",
    "Context": "Community research",
    "Snippet": "Documented different genome sets in same metaroom.",
    "Notes": "Generated qualitative and quantitative comparisons."
  }
],
"Genetics_Biology_Tutorials_Docs": [
  {
    "Title": "Introduction to Genetic Engineering",
    "Context": "Community tutorial thread",
    "Snippet": "Step-by-step intro to the Genetics Kit.",
    "Notes": "Gateway resource for new genome hackers."
  },
  {
    "Title": "Gene Categories Explained",
    "Context": "Forum guide",
    "Snippet": "Walkthrough of receptor, emitter, organ, instinct gene
classes.",
    "Notes": "Became standard reference."
  },
  {
    "Title": "Chemicals 101",
    "Context": "Sticky thread",
    "Snippet": "Overview of Creatures 3 chemical system.",
    "Notes": "Detailed mapping of toxins, nutrients, reinforcements."
  },
  {
    "Title": "Instinct Engineering Tutorial",
    "Context": "Community how-to",
    "Snippet": "Modifying instinct tables safely.",
    "Notes": "Paired with multiple example edits."
  }
],

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{
  "Title": "Drive System Guide",
  "Context": "Forum document",
  "Snippet": "Explains how hunger, fear, sleep, boredom drives interact.",
  "Notes": "Commonly cited teaching aid."
},
{
  "Title": "Organ Creation Walkthrough",
  "Context": "Tutorial thread",
  "Snippet": "How to add entirely new organs to genome.",
  "Notes": "Referenced in immune organ and photosynthetic experiments."
},
{
  "Title": "Hormones and Chemicals Reference",
  "Context": "Community doc",
  "Snippet": "Table of all known chemicals and hormonal interactions.",
  "Notes": "Reposted across several archives."
},
{
  "Title": "Aging and Life Stages Tutorial",
  "Context": "Forum guide",
  "Snippet": "How to tune genome life stages and rates.",
  "Notes": "Used in elder-life and fast-aging projects."
},
{
  "Title": "Reproductive Gene Editing Guide",
  "Context": "Community resource",
  "Snippet": "Editing fertility and ovulation cycles.",
  "Notes": "Critical for stabilizing long runs."
},
{
  "Title": "Mutation Mechanics Explained",
  "Context": "Forum sticky",
  "Snippet": "How random mutations apply at birth.",
  "Notes": "Led to development of mutation-logging tools."
},
{
  "Title": "Selective Breeding Guide",
  "Context": "Community document",
  "Snippet": "How to manually select for traits across generations.",
  "Notes": "Practical application resource."
},
{
  "Title": "Genome Debugging Walkthrough",
  "Context": "Forum how-to",
  "Snippet": "Using Genetics Kit and diff utilities for bug fixing.",
  "Notes": "Directly tied to CFF development."
},

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{
  "Title": "Advanced Genetics Workshop Series",
  "Context": "Community multi-part thread",
  "Snippet": "Lessons on complex genome edits and experiments.",
  "Notes": "Served as informal online course."
},
{
  "Title": "Neural Lobe and Brain Genes Guide",
  "Context": "Forum tutorial",
  "Snippet": "Detailed explanation of brain genes and plasticity.",
  "Notes": "Cited in neuro-behavioral rewires."
},
{
  "Title": "Chemical Pathways Explained",
  "Context": "Community doc",
  "Snippet": "Diagrams of energy metabolism, toxin breakdown, healing.",
  "Notes": "Formed backbone of chemical overhaul mods."
},
{
  "Title": "Beginner's Guide to Genome Editing",
  "Context": "Forum sticky",
  "Snippet": "First edits: changing hunger drive thresholds.",
  "Notes": "Most-linked on-ramp for novices."
},
{
  "Title": "Genome Compatibility FAQ",
  "Context": "Community resource",
  "Snippet": "Which genomes work together, what breaks.",
  "Notes": "Prevented world corruption issues."
},
{
  "Title": "Wolfling Run Setup Guide",
  "Context": "Forum teaching post",
  "Snippet": "How to prepare genomes and world for automated long runs.",
  "Notes": "Cross-links to ecology experiments."
},
{
  "Title": "Experimental Genome Index",
  "Context": "Community index thread",
  "Snippet": "Curated list of experimental and showcase genomes.",
  "Notes": "Ensured visibility of scattered projects."
},
{
  "Title": "Archived Tutorials Mirror",
  "Context": "Community resource",
  "Snippet": "Backup of multiple guides in HTML/PDF.",
  "Notes": "Ensured long-term preservation."
},

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{
  "Title": "Brain Reinforcement System Tutorial",
  "Context": "Forum walkthrough",
  "Snippet": "How reinforcement chemicals train behavior.",
  "Notes": "Cited in instinct debugging discussions."
},
{
  "Title": "Seasonal and Environmental Genomes Guide",
  "Context": "Community doc",
  "Snippet": "Tying fertility and drives to environment.",
  "Notes": "Precursor to ecological genome mods."
},
{
  "Title": "Organ Debugging Tips",
  "Context": "Forum post",
  "Snippet": "Identifying failing organs in experimental genomes.",
  "Notes": "Paired with Organ Logger utilities."
},
{
  "Title": "Genome Editing Safety Tips",
  "Context": "Community resource",
  "Snippet": "Best practices to avoid corruption.",
  "Notes": "Frequently reposted in help threads."
},
{
  "Title": "Practical Mutation Exercises",
  "Context": "Forum tutorial",
  "Snippet": "Hands-on exercises for learning mutation impacts.",
  "Notes": "Used by new learners."
},
{
  "Title": "Full Genome Reference Charts",
  "Context": "Community document",
  "Snippet": "Spreadsheets mapping genes, organs, chemicals.",
  "Notes": "Used as master reference."
},
{
  "Title": "Wolfling Run Best Practices",
  "Context": "Forum guide",
  "Snippet": "Tips for genome choice, mutation rates, population
balance.",
  "Notes": "Core wolfling run manual."
},
{
  "Title": "Archived Workshop Threads",
  "Context": "Community preservation",
  "Snippet": "Saved lessons on hormones, instincts, neural systems.",
  "Notes": "Key teaching material."
}

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    },  
    {  
      "Title": "CFF Development Documentation",  
      "Context": "Forum sticky",  
      "Snippet": "Posts collating all CFF changes, rationales, fixes.",  
      "Notes": "Canonical historical record."  
    }  
  ]  
}  
}
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