

SPACE ECO / FIELD REFERENCE 01

PLANETARY FIELD MANUAL

& RESOURCE ATLAS

Planet types, procedural sprites, fixed yields,
mining times, resource origins, and practical uses

CURRENT BUILD DATA

Space Eco v4.0.22 Update

Derived from the supplied HTML client and JS server files.
Prepared 30 August 2026

FIELD COPY

SE-PFM-4022

MANUAL MAP

Contents & data notes

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WHAT IS EXACT, AND WHAT IS FIELD LORE?

Exact mechanics: planet palettes, fixed resource pools, spawn weights, terrain durability, rarity, base values, recipes, mining formula, deposit counts, map sizes, mining range, quantities, and XP are taken from the supplied code.

Field lore: each origin story and atmospheric description is newly written for this manual. It is a setting-friendly interpretation of the biome name, palette, terrain, and resources - not pre-existing canonical story text in the code.

Artwork note: the supplied package contains asset paths but not the image asset files. Planet images here are representative manual renders using the game's exact two-color palettes and its 32x32 circular, pixel, and crater rules. Resource icons are manual-native tile-style identifiers based on each resource color and rarity.

CORE MECHANICS

How planetary mining works

SERVER-AUTHORITATIVE HOLD TIME

$$T = \text{clamp}(((700 + 140R + \min(650, 4H)) / (1 + 0.08(L-1))) \times 0.93^A, 420, 2400) \text{ ms}$$

R resource rarity, 1 through 8

H tile HP at the start of the mining hold

L character Mining level

A Excavation Matrix / Mining Array level, 0 through 10

DEPOSIT GENERATION

- Every normal planet map is 320 x 140 tiles.
- Each map adds 10-16 R3+ pockets at 70 HP.
- It also adds 8-14 R4+ pockets at 70 HP.
- It adds 3-6 R5+ rare pockets at 95 HP.
- Some biomes replace whole layers with extra seams.
- A seam chooses any planet-pool item meeting its rarity gate.

REWARD & RANGE

- Mining range: 185 world units.
- Terrain blocks yield 1 item.
- R3/R4 ore seams: 35% chance to yield 2, otherwise 1.
- R5+ rare seams: 55% chance to yield 2, otherwise 1.
- Mining XP: rarity x 2 per completed tile.
- Minimum possible hold: 0.42s; maximum: 2.40s.

HOW TO READ THE PLANET TABLES

The time printed beside each resource is the Level 1, no-Excavation-Matrix hold time across every deposit that can produce that resource on that planet. A range means the same item may appear in deposits with different starting HP. Times assume a fresh, full-durability tile.

Fixed yield pool does not mean every named item is visible in every layer. Low-rarity terrain resources come from their matching terrain blocks; R3+ items are selected by seeded ore seams. Each generated planet also receives 2-4 seed-specific procedural resources, and the final pool is de-duplicated and capped at 12 entries.

Asteroid note: the current asteroid generator places stone plus R4 and R5 deposits. Its resolver includes iron/copper at R3, but no R3 asteroid pockets are currently generated; practical fixed asteroid mining is stone, crystal, and gold.

REFERENCE TABLES

Mining times at a glance

Seconds per fresh deposit. Rarity and starting tile HP are both part of the formula.

STANDARD GENERATED POCKETS

Rarity	70 HP seam	95 HP rare	XP	Typical access
R1	-	-	2	terrain only
R2	-	-	4	terrain only
R3	1.40s	-	6	R3+
R4	1.54s	-	8	R3+/R4+
R5	1.68s	1.78s	10	all seam tiers
R6	1.82s	1.92s	12	all seam tiers
R7	1.96s	2.06s	14	all seam tiers
R8	2.10s	2.20s	16	all seam tiers

UPGRADE EFFECT EXAMPLE: R6 CRYSTAL IN A 95 HP RARE POCKET

Mining L1 Matrix L0 1.92s	Mining L5 Matrix L0 1.45s	Mining L10 Matrix L0 1.12s
Mining L1 Matrix L5 1.34s	Mining L5 Matrix L5 1.01s	Mining L10 Matrix L5 0.78s
Mining L1 Matrix L10 0.93s	Mining L5 Matrix L10 0.70s	Mining L10 Matrix L10 0.54s

The Excavation Matrix multiplies duration by 0.93 per level. Mining level divides duration by 1 + 0.08(L-1).

PLANNING RULE

Rarity determines whether a resource can enter a seam; HP determines how long that particular tile takes. The same R6 item can therefore have several valid times on one world.

QUICK INDEX

Nineteen landing environments

Spawn labels are relative to the code's weighted normal-planet catalogue; asteroid is a special landing type.

	Lush World	COMMON	Dirt, Grass Tuft, Stone, Copper, Iron, Crystal
	Desert World	COMMON	Sand, Dirt, Stone, Copper, Gold, Astral Salt
	Ice World	FREQUENT	Ice Block, Black Ice, Stone, Iron, Crystal
	Toxic World	FREQUENT	Toxic Sludge, Purple Miasma, Miasma Core, Dirt, Stone, Copper, Crystal
	Volcanic World	UNCOMMON	Lava Rock, Magma Core, Ember Quartz, Stone, Iron, Gold, Crystal
	Void Spawn	FREQUENT	Dark Obsidian, Purple Miasma, Void Ore, Dark Matter Shard, Stardust, Crystal, Stone,...
	Codex Neon World	FREQUENT	Neon Ore, Codex Shard, Silicon, Circuit Board, Quantum Core, Crystal, Gold, Stardust
	Crystal Forest	UNCOMMON	Crystal, Prism Ore, Ether Glass, Nano Fiber, Grass Tuft, Cobalt, Ice Block
	Storm World	UNCOMMON	Cobalt, Titanium, Plasma Cell, Ether Glass, Iron, Crystal
	Metallic World	UNCOMMON	Iron, Titanium, Alloy Frame, Gloom Steel, Copper, Silicon
	Obsidian World	RARE	Dark Obsidian, Charcoal Block, Gloom Steel, Void Ore, Stone, Dark Matter Shard
	Miasma World	RARE	Purple Miasma, Miasma Core, Toxic Sludge, Void Ore, Dark Obsidian, Stardust
	Charcoal World	RARE	Charcoal Block, Dark Obsidian, Stone, Iron, Ember Quartz
	Neon Reef	RARE	Neon Ore, Codex Shard, Ether Glass, Prism Ore, Silicon, Crystal
	Black Ice World	RARE	Black Ice, Dark Obsidian, Ice Block, Prism Ore, Crystal
	Ember Quartz World	RARE	Ember Quartz, Magma Core, Lava Rock, Gold, Plasma Cell
	Prism Moon	RARE	Prism Ore, Ether Glass, Astral Salt, Crystal, Stardust
	Gloom Steel World	RARE	Gloom Steel, Dark Obsidian, Titanium, Alloy Frame, Iron
	Asteroid	SPECIAL LANDING	Stone, Iron, Crystal, Gold

PLANET FILES 01-02

Biome records



Lush World

COMMON WEIGHT 2.30

FIELD LORE / ORIGIN

Verdant seed worlds left by the Greenwake terraforming fleets. Their soils kept evolving after the fleets vanished, turning abandoned gardens into entire continents.

ATMOSPHERE & ENVIRONMENT

Humid, oxygen-rich air, frequent rain, soft ground, and broad bands of living grass. Excellent for first expeditions.

SURFACE Grass 20HP | SHALLOW Dirt 25HP | DEEP Stone 55HP

FIXED YIELD POOL

R / L1 TIME

Dirt	R1 / 0.94s Iron	R3 / 1.40s
Grass Tuft	R1 / 0.92s Crystal	R6 / 1.82-1.92s
Stone	R2 / 1.20s	
Copper	R3 / 1.40s	

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.



Desert World

COMMON WEIGHT 2.10

FIELD LORE / ORIGIN

These were once shallow ocean worlds. A long solar brightening boiled away their seas and left copper-bearing basins beneath drifting silica dunes.

ATMOSPHERE & ENVIRONMENT

Hot days, cold nights, abrasive winds, and very dry air. Open terrain makes surface navigation simple.

SURFACE Sand 18HP | SHALLOW Sand 22HP | DEEP Stone 50HP

FIXED YIELD POOL

R / L1 TIME

Sand	R1 / 0.91-0.93s Gold	R5 / 1.68-1.78s
Dirt	R1 / not placed Astral Salt	R4 / 1.54s
Stone	R2 / 1.18s	
Copper	R3 / 1.40s	

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.

PLANET FILES 03-04

Biome records



Ice World

FREQUENT WEIGHT 1.70

FIELD LORE / ORIGIN

Outer-system migrants formed when water-rich bodies were pushed into long cold orbits. Their buried mineral layers froze beneath expanding black-ice shelves.

ATMOSPHERE & ENVIRONMENT

Cryogenic plains, thin air, reflective horizons, and deep crevasses. Ice and black ice dominate the upper layers.

SURFACE Ice 30HP | SHALLOW Ice 35HP | DEEP Black ice 65HP

FIXED YIELD POOL

R / L1 TIME

Ice Block	R2 / 1.10-1.12s Crystal
Black Ice	R5 / 1.66-1.78s
Stone	R2 / not placed
Iron	R3 / 1.40s

R6 / 1.82-1.92s

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.



Toxic World

FREQUENT WEIGHT 1.50

FIELD LORE / ORIGIN

Failed biorefinery colonies seeded these worlds with self-sustaining chemical ecologies. Their old reactor basins now condense miasma cores.

ATMOSPHERE & ENVIRONMENT

Corrosive haze, acidic sludge, luminous spores, and unstable ground. Valuable, but hostile to unprepared suits.

SURFACE Toxic sludge 22HP | SHALLOW Dirt 28HP | DEEP Stone 60HP

FIXED YIELD POOL

R / L1 TIME

Toxic Sludge	R3 / 1.21-1.40s Stone
Purple Miasma	R5 / 1.68-1.78s Copper
Miasma Core	R8 / 2.10-2.20s Crystal
Dirt	R1 / 0.95s

R2 / 1.22s

R3 / 1.40s

R6 / 1.82-1.92s

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.

PLANET FILES 05-06

Biome records



Volcanic World

UNCOMMON WEIGHT 1.25

FIELD LORE / ORIGIN

Young planets still releasing the heat of formation. Pressure around their magma chambers grows ember quartz along fault walls.

ATMOSPHERE & ENVIRONMENT

Sulfurous ash, lava channels, furnace winds, and constant tremors. Surface blocks are tougher than on temperate worlds.

SURFACE Magma core 40HP | SHALLOW Lava rock 50HP | DEEP Stone 70HP

FIXED YIELD POOL

R / L1 TIME

Lava Rock	R3 / 1.32-1.40s	Iron	R3 / 1.40s
Magma Core	R4 / 1.42-1.54s	Gold	R5 / 1.68-1.78s
Ember Quartz	R5 / 1.68-1.78s	Crystal	R6 / 1.82-1.92s
Stone	R2 / 1.26s		

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.



Void Spawn

FREQUENT WEIGHT 1.45

FIELD LORE / ORIGIN

A gravitational fracture gathered dust, dead light, and exotic matter into a world-shaped knot. Obelisk cores appear where the fracture anchors itself.

ATMOSPHERE & ENVIRONMENT

Near-vacuum pockets, purple distortion, glass-black ground, and unpredictable local gravity. The richest fixed exotic pool in the atlas.

SURFACE Toxic sludge 36HP | SHALLOW Stone 58HP | DEEP R5+ seam 100HP

FIXED YIELD POOL

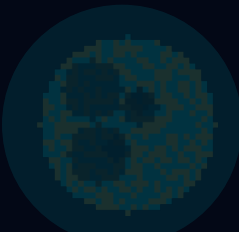
R / L1 TIME

Dark Obsidian	R6 / 1.82-1.94s	Stardust	R6 / 1.82-1.94s
Purple Miasma	R5 / 1.68-1.80s	Crystal	R6 / 1.82-1.94s
Void Ore	R7 / 1.96-2.08s	Stone	R2 / 1.21s
Dark Matter Shard	R7 / 1.96-2.08s	Obelisk Core	R8 / 2.10-2.22s

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.

PLANET FILES 07-08

Biome records



Codex Neon World

FREQUENT WEIGHT 1.50

FIELD LORE / ORIGIN

Ancient Codex arrays wrote conductive patterns through these planets until geology began behaving like a data lattice.

ATMOSPHERE & ENVIRONMENT

Ionized cyan-and-gold skies, electrical auroras, radiant seams, and high-energy deposits close to the surface.

SURFACE Grass 24HP | SHALLOW R3+ seam 58HP | DEEP R5+ seam 95HP

FIXED YIELD POOL

R / L1 TIME

Neon Ore	R5 / 1.63-1.78s	Quantum Core	R7 / 1.91-2.06s
Codex Shard	R7 / 1.91-2.06s	Crystal	R6 / 1.77-1.92s
Silicon	R3 / 1.35-1.40s	Gold	R5 / 1.63-1.78s
Circuit Board	R4 / 1.49-1.54s	Stardust	R6 / 1.77-1.92s

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.



Crystal Forest

UNCOMMON WEIGHT 1.25

FIELD LORE / ORIGIN

Silicate organisms learned to grow by vibration, building forests that store storm energy as crystal and ether glass.

ATMOSPHERE & ENVIRONMENT

Cold mist, chiming crystal growth, reflective canopies, and grass-covered shelves above dense prism-bearing strata.

SURFACE Grass 24HP | SHALLOW Ice 45HP | DEEP R5+ seam 90HP

FIXED YIELD POOL

R / L1 TIME

Crystal	R6 / 1.82-1.92s	Grass Tuft	R1 / 0.94s
Prism Ore	R6 / 1.82-1.92s	Cobalt	R4 / 1.54s
Ether Glass	R6 / 1.82-1.92s	Ice Block	R2 / 1.16s
Nano Fiber	R5 / 1.68-1.78s		

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.

PLANET FILES 09-10

Biome records



Storm World

UNCOMMON WEIGHT 1.15

FIELD LORE / ORIGIN

Dense metallic dust and a charged mantle lock these planets into permanent electrical weather.

ATMOSPHERE & ENVIRONMENT

Heavy clouds, violent lightning, conductive rain, and exposed cobalt-titanium seams. Visibility can change without warning.

SURFACE Stone 32HP | SHALLOW Stone 54HP | DEEP R4+ seam 82HP

FIXED YIELD POOL

R / L1 TIME

Cobalt	R4 / 1.54-1.59s Iron	R3 / 1.40s
Titanium	R5 / 1.68-1.78s Crystal	R6 / 1.82-1.92s
Plasma Cell	R5 / 1.68-1.78s	
Ether Glass	R6 / 1.82-1.92s	

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.



Metallic World

UNCOMMON WEIGHT 1.25

FIELD LORE / ORIGIN

Stripped protoplanetary cores, exposed after ancient collisions removed their lighter mantles.

ATMOSPHERE & ENVIRONMENT

Little atmosphere, conductive dust, hard grey terrain, and unusually concentrated structural metals and manufactured-looking deposits.

SURFACE Stone 40HP | SHALLOW Stone 62HP | DEEP R3+ seam 88HP

FIXED YIELD POOL

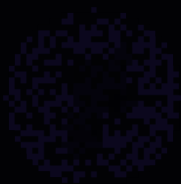
R / L1 TIME

Iron	R3 / 1.40-1.47s Copper	R3 / 1.40-1.47s
Titanium	R5 / 1.68-1.78s Silicon	R3 / 1.40-1.47s
Alloy Frame	R6 / 1.82-1.92s	
Gloom Steel	R6 / 1.82-1.92s	

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.

PLANET FILES 11-12

Biome records



Obsidian World

RARE WEIGHT 1.05

FIELD LORE / ORIGIN

A cooled magma shell formed around old void faults. Each tectonic cycle turns another layer into black glass and gloom steel.

ATMOSPHERE & ENVIRONMENT

Airless or extremely thin, mirror-dark terrain, violet auroras, razor ridges, and the toughest deep layer in the standard catalogue.

SURFACE Stone 50HP | SHALLOW Dark obsidian 80HP | DEEP R5+ seam 115HP

FIXED YIELD POOL

R / L1 TIME

Dark Obsidian	R6 / 1.82-2.00s Stone	R2 / 1.18s
Charcoal Block	R2 / not placed Dark Matter Shard	R7 / 1.96-2.14s
Gloom Steel	R6 / 1.82-2.00s	
Void Ore	R7 / 1.96-2.14s	

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.



Miasma World

RARE WEIGHT 1.05

FIELD LORE / ORIGIN

Moons rich in reactive organics were transformed by leaking reactors and survived as closed violet chemistries.

ATMOSPHERE & ENVIRONMENT

Dense poisonous fog, corrosive pools, low visibility, and concentrated toxic and void-adjacent materials.

SURFACE Toxic sludge 34HP | SHALLOW Dirt 60HP | DEEP R5+ seam 105HP

FIXED YIELD POOL

R / L1 TIME

Purple Miasma	R5 / 1.68-1.82s Dark Obsidian	R6 / 1.82-1.96s
Miasma Core	R8 / 2.10-2.24s Stardust	R6 / 1.82-1.96s
Toxic Sludge	R3 / 1.26-1.40s	
Void Ore	R7 / 1.96-2.10s	

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.

PLANET FILES 13-14

Biome records



Charcoal World

RARE WEIGHT 0.95

FIELD LORE / ORIGIN

Runaway firestorms baked forest planets until their biospheres became layered carbon archives.

ATMOSPHERE & ENVIRONMENT

Soot-heavy air, low light, brittle crust, and buried obsidian. Early industry values these worlds for carbon and stone.

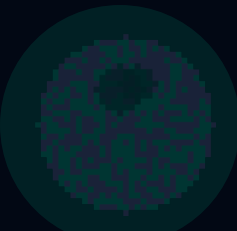
SURFACE Dirt 24HP | SHALLOW Stone 44HP | DEEP R4+ seam 76HP

FIXED YIELD POOL

R / L1 TIME

Charcoal Block	R2 / not placed	Ember Quartz	R5 / 1.68-1.78s
Dark Obsidian	R6 / 1.82-1.92s		
Stone	R2 / 1.16s		
Iron	R3 / 1.40s		

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.



Neon Reef

RARE WEIGHT 1.10

FIELD LORE / ORIGIN

Former ocean worlds mineralized into luminous reef structures after their seas became supersaturated with exotic salts.

ATMOSPHERE & ENVIRONMENT

Humid electrostatic mist, bright cyan-magenta terrain, glassy reefs, and excellent optics and circuitry resources.

SURFACE Grass 22HP | SHALLOW R3+ seam 54HP | DEEP R5+ seam 90HP

FIXED YIELD POOL

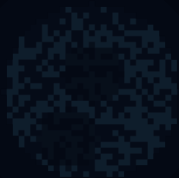
R / L1 TIME

Neon Ore	R5 / 1.62-1.78s	Silicon	R3 / 1.34-1.40s
Codex Shard	R7 / 1.90-2.06s	Crystal	R6 / 1.76-1.92s
Ether Glass	R6 / 1.76-1.92s		
Prism Ore	R6 / 1.76-1.92s		

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.

PLANET FILES 15-16

Biome records



Black Ice World

RARE WEIGHT 0.95

FIELD LORE / ORIGIN

Shadow matter seeped into ordinary cryoworlds and changed how their ice absorbs light.

ATMOSPHERE & ENVIRONMENT

Freezing hydrocarbon winds, dark slick plains, sudden fractures, and prism-bearing deep seams.

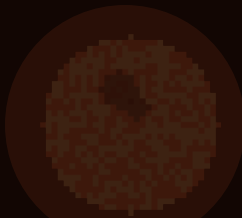
SURFACE Ice 38HP | SHALLOW Black ice 62HP | DEEP R5+ seam 100HP

FIXED YIELD POOL

R / L1 TIME

Black Ice	R5 / 1.65-1.80s	Crystal	R6 / 1.82-1.94s
Dark Obsidian	R6 / 1.82-1.94s		
Ice Block	R2 / 1.13s		
Prism Ore	R6 / 1.82-1.94s		

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.



Ember Quartz World

RARE WEIGHT 0.95

FIELD LORE / ORIGIN

Tectonic pressure fused continent-scale quartz beds around persistent magma veins.

ATMOSPHERE & ENVIRONMENT

Furnace air, glowing dust, lava shelves, and heat-stressed terrain rich in reactor and weapon materials.

SURFACE Lava rock 42HP | SHALLOW Magma core 62HP | DEEP R5+ seam 105HP

FIXED YIELD POOL

R / L1 TIME

Ember Quartz	R5 / 1.68-1.82s	Plasma Cell	R5 / 1.68-1.82s
Magma Core	R4 / 1.51-1.54s		
Lava Rock	R3 / 1.29-1.40s		
Gold	R5 / 1.68-1.82s		

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.

PLANET FILES 17-18

Biome records



Prism Moon

RARE WEIGHT 0.90

FIELD LORE / ORIGIN

Fragments of a shattered moon reassembled around a crystal seed, preserving the impact energy as refracted light.

ATMOSPHERE & ENVIRONMENT

Almost airless, low gravity, hard ice, blinding refraction, and premium shield-optics materials.

SURFACE Ice 30HP | SHALLOW R3+ seam 58HP | DEEP R5+ seam 96HP

FIXED YIELD POOL

R / L1 TIME

 Prism Ore	R6 / 1.77-1.92s  Stardust
 Ether Glass	R6 / 1.77-1.92s
 Astral Salt	R4 / 1.49-1.54s
 Crystal	R6 / 1.77-1.92s

R6 / 1.77-1.92s

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.



Gloom Steel World

RARE WEIGHT 0.90

FIELD LORE / ORIGIN

Industrial planets collapsed inward after their foundries outlived their builders. Ore, factories, and mantle became one alloyed crust.

ATMOSPHERE & ENVIRONMENT

Dim skies, metallic dust, immense magnetic fields, and exceptionally hard defensive materials.

SURFACE Stone 46HP | SHALLOW Stone 70HP | DEEP R4+ seam 106HP

FIXED YIELD POOL

R / L1 TIME

 Gloom Steel	R6 / 1.82-1.96s  Iron
 Dark Obsidian	R6 / 1.82-1.96s
 Titanium	R5 / 1.68-1.82s
 Alloy Frame	R6 / 1.82-1.96s

R3 / 1.40s

Plus 2-4 seed-specific procedural resources. 'Not placed' means pool-listed but unreachable in the current terrain generator.

SPECIAL LANDING FILE 19

Asteroid operations



Asteroid

SPECIAL LANDING 150 x 82 TILES

FIELD LORE / ORIGIN

Fragments of shattered parent bodies drift close enough to board. Each preserves a small cross-section of the body it came from.

ATMOSPHERE & ENVIRONMENT

Airless, low gravity, compact 150 by 82 tile maps, and no atmosphere to soften impacts. Treat edges as navigational hazards.

SURFACE Stone 58HP | SHALLOW Stone edge 42HP | DEEP R5+ seam 100HP

FIXED YIELD POOL

R / L1 TIME

 Stone	R2 / 1.15-1.21s
 Iron	R3 / not placed
 Crystal	R6 / 1.85-1.94s
 Gold	R5 / 1.71-1.80s

Practical generated deposits: stone, crystal, gold. Iron is resolver-listed but no R3 asteroid seam is placed.

ASTEROID-SPECIFIC MECHANICS

- Map size is 150 x 82 tiles, smaller than a normal planet's 320 x 140.
- Ordinary interior stone starts at 58 HP; edge stone starts at 42 HP.
- Generated R4 nodes start at 78 HP and select crystal or gold.
- Generated R5 nodes start at 100 HP and also select crystal or gold.
- The resolver contains iron/copper for R3 nodes, but the current asteroid generator does not place R3 nodes.
- At Level 1 with no Matrix: 58 HP stone takes 1.21s; 42 HP stone takes 1.15s; R5 gold at 78-100 HP takes 1.71-1.80s; R6 crystal takes 1.85-1.94s.

RESOURCE TAXONOMY

Reading the material catalogue

WHAT EACH RESOURCE CARD TELLS YOU

Rarity controls seam eligibility, mining XP, and part of the mining timer. Base value is the economy's baseline item value before dynamic pricing. 'Named uses' lists concrete recipes or systems in the current code; general contracts and trade remain valid even when a material is not consumed by a named player recipe.

TERRAIN

Dirt, Stone, Sand

ORGANIC

Grass Tuft

METAL

Copper, Iron, Gold, Cobalt, Titanium, Gloom Steel

CRYSTAL

Crystal, Ember Quartz, Prism Ore, Ether Glass

EXOTIC

Astral Salt, Black Ice, Miasma Core, Dark Obsidian, Stardust

VOLATILE

Ice Block

CHEMICAL

Toxic Sludge, Purple Miasma

THERMAL

Lava Rock, Magma Core

VOID

Void Ore, Dark Matter Shard, Obelisk Core

ENERGY

Neon Ore, Quantum Core, Plasma Cell

DATA

Codex Shard

INDUSTRIAL

Silicon, Circuit Board, Nano Fiber, Alloy Frame, Charcoal Block

IMPORTANT

Circuit Board, Alloy Frame, Quantum Core, Plasma Cell, and similar industrial items can be selected as mineable deposits because they appear directly in fixed planet pools. Treat that as current game behavior, even when the item name sounds manufactured.

MATERIALS 01-03

Resource dossiers



Dirt

R1

TERRAIN

BASE 1

Loose planetary soil and the foundation of the earliest repair chemistry.

WHERE TO MINE

Lush World, Desert World, Toxic World

NAMED USES IN THIS BUILD

Hull Patch I; basic building and low-value station orders.

L1 / no Matrix: 0.94s

2 XP / tile



Grass Tuft

R1

ORGANIC

BASE 1

A hardy bundle of surface vegetation that binds soils on living worlds.

WHERE TO MINE

Lush World, Crystal Forest

NAMED USES IN THIS BUILD

Hull Patch I and Bio Sprayer; early contracts.

L1 / no Matrix: 0.92-0.94s

2 XP / tile



Stone

R2

TERRAIN

BASE 3

Common structural rock found in many crusts and asteroid interiors.

WHERE TO MINE

Lush World, Desert World, Ice World, Toxic World, Volcanic World, Void Spawn, Obsidian World, Charcoal World; Asteroid

NAMED USES IN THIS BUILD

Hull Patch I, construction, station orders, and general trade.

L1 / no Matrix: 1.15-1.26s

4 XP / tile

MATERIALS 04-06

Resource dossiers



Copper

R3

METAL

BASE 9

A conductive base metal used wherever power and control signals meet.

WHERE TO MINE

Lush World, Desert World, Toxic World, Metallic World

NAMED USES IN THIS BUILD

Arc Pulser, Combat Focus, modules, repairs, ships, and electronics.

L1 / no Matrix: 1.40-1.47s

6 XP / tile



Iron

R3

METAL

BASE 10

The backbone of hulls, station hardware, turrets, and ordinary machinery.

WHERE TO MINE

Lush World, Ice World, Volcanic World, Storm World, Metallic World, Charcoal World, Gloom Steel World; Asteroid

NAMED USES IN THIS BUILD

Hull Patch II, ship and turret frames, attachment modules, and station work.

L1 / no Matrix: 1.40-1.47s

6 XP / tile



Crystal

R6

CRYSTAL

BASE 60

Energy-responsive crystal used in shields, optics, weapons, and high-tier control systems.

WHERE TO MINE

Lush World, Ice World, Toxic World, Volcanic World, Void Spawn, Codex Neon World, Crystal Forest, Storm World, Neon Reef, Black Ice World, Prism Moon; Asteroid

NAMED USES IN THIS BUILD

Aegis Burst, Mega Laser, shield gear, advanced weapons, ships, and modules.

L1 / no Matrix: 1.76-1.94s

12 XP / tile

MATERIALS 07-09

Resource dossiers



Sand

R1

TERRAIN

BASE 2

Fine silica grains left by erosion and evaporated seas.

WHERE TO MINE

Desert World

NAMED USES IN THIS BUILD

Shield Cell I, refinement, glassmaking, and early trade.

L1 / no Matrix: 0.91-0.93s

2 XP / tile



Gold

R5

METAL

BASE 40

Rare conductive metal valued for precision contacts and premium construction.

WHERE TO MINE

Desert World, Volcanic World, Codex Neon World, Ember Quartz World; Asteroid

NAMED USES IN THIS BUILD

Sunflare Cannon, Mega Laser, advanced ships, and high-value station recipes.

L1 / no Matrix: 1.63-1.82s

10 XP / tile



Astral Salt

R4

EXOTIC

BASE 72

Glittering salt crystal with strong trade and refinement value.

WHERE TO MINE

Desert World, Prism Moon

NAMED USES IN THIS BUILD

Trade quests, refinement, luxury orders, and procedural formulas.

L1 / no Matrix: 1.49-1.54s

8 XP / tile

MATERIALS 10-12

Resource dossiers



Ice Block

R2

VOLATILE

BASE 4

Stable water ice recovered from cold crusts and crystal forests.

WHERE TO MINE

Ice World, Crystal Forest, Black Ice World

NAMED USES IN THIS BUILD

Frost Shard, Hull Patch II, Shield Cell I, and life-support trade.

L1 / no Matrix: 1.10-1.16s

4 XP / tile



Black Ice

R5

EXOTIC

BASE 130

Frozen shadow crystal that absorbs light and stores cold unusually well.

WHERE TO MINE

Ice World, Black Ice World

NAMED USES IN THIS BUILD

Cryo Suppressor and shield/void contracts.

L1 / no Matrix: 1.65-1.80s

10 XP / tile



Toxic Sludge

R3

CHEMICAL

BASE 8

Reactive surface sludge produced by unstable planetary chemistry.

WHERE TO MINE

Toxic World, Miasma World

NAMED USES IN THIS BUILD

Bio Sprayer, toxic research, contracts, and trade.

L1 / no Matrix: 1.21-1.40s

6 XP / tile

MATERIALS 13-15

Resource dossiers



Purple Miasma

R5

CHEMICAL

BASE 145

A violet vapor-block mineral with toxic and exotic-reactor affinities.

WHERE TO MINE

Toxic World, Void Spawn, Miasma World

NAMED USES IN THIS BUILD

Miasma contracts, exotic reactors, station stock, and trade.

L1 / no Matrix: 1.68-1.82s

10 XP / tile



Miasma Core

R8

EXOTIC

BASE 520

A condensed miasma heart and one of the catalogue's rarest fixed materials.

WHERE TO MINE

Toxic World, Miasma World

NAMED USES IN THIS BUILD

Surface Weapon Amplifier upgrades from level 4; late contracts and trade.

L1 / no Matrix: 2.10-2.24s

16 XP / tile



Lava Rock

R3

THERMAL

BASE 12

Recently cooled volcanic stone that retains useful heat-resistant minerals.

WHERE TO MINE

Volcanic World, Ember Quartz World

NAMED USES IN THIS BUILD

Forge work, thermal orders, general crafting, and trade.

L1 / no Matrix: 1.29-1.40s

6 XP / tile

MATERIALS 16-18

Resource dossiers



Magma Core

R4

THERMAL

BASE 22

Dense, heat-bearing material taken from active magma layers.

WHERE TO MINE

Volcanic World, Ember Quartz World

NAMED USES IN THIS BUILD

Sunflare Cannon, Inferno Battery, Obelisk Carrier, and reactor work.

L1 / no Matrix: 1.42-1.54s

8 XP / tile



Ember Quartz

R5

CRYSTAL

BASE 150

Fiery quartz grown under tectonic heat and pressure.

WHERE TO MINE

Volcanic World, Charcoal World, Ember Quartz World

NAMED USES IN THIS BUILD

Combat Focus; cannons, reactors, forge quests, and defense orders.

L1 / no Matrix: 1.68-1.82s

10 XP / tile



Dark Obsidian

R6

EXOTIC

BASE 210

Glass-black volcanic stone used where ordinary hull materials fail.

WHERE TO MINE

Void Spawn, Obsidian World, Miasma World, Charcoal World, Black Ice World, Gloom Steel World

NAMED USES IN THIS BUILD

Heavy hull work, void quests, high-value contracts, and trade.

L1 / no Matrix: 1.82-2.00s

12 XP / tile

MATERIALS 19-21

Resource dossiers



Void Ore

R7

VOID

BASE 310

Dense shadow ore formed near gravitational fractures.

WHERE TO MINE

Void Spawn, Obsidian World, Miasma World

NAMED USES IN THIS BUILD

Void weapons, advanced contracts, and high-value trade.

L1 / no Matrix: 1.96-2.14s

14 XP / tile



Dark Matter Shard

R7

VOID

BASE 260

A stabilized fragment of exotic mass used in gravity and capital systems.

WHERE TO MINE

Void Spawn, Obsidian World

NAMED USES IN THIS BUILD

Graviton Burst, Void Spinner, Titan Bloom, and advanced module gates.

L1 / no Matrix: 1.96-2.14s

14 XP / tile



Stardust

R6

EXOTIC

BASE 145

Fine high-energy particulate captured in unusual planetary crusts.

WHERE TO MINE

Void Spawn, Codex Neon World, Miasma World, Prism Moon

NAMED USES IN THIS BUILD

Void Spinner, Titan Bloom, Navigation Chip, Resource Magnet upgrades, and trade.

L1 / no Matrix: 1.77-1.96s

12 XP / tile

MATERIALS 22-24

Resource dossiers



Obelisk Core

R8

VOID

BASE 800

A rare anchor core recovered from Void Spawn geology.

WHERE TO MINE

Void Spawn

NAMED USES IN THIS BUILD

Obelisk Carrier, Vanguard Fighter III, Titan Bloom, and Void Spinner.

L1 / no Matrix: 2.10-2.22s

16 XP / tile



Neon Ore

R5

ENERGY

BASE 160

Bright conductive ore associated with Codex and reef biomes.

WHERE TO MINE

Codex Neon World, Neon Reef

NAMED USES IN THIS BUILD

Circuitry, signs, energy tools, contracts, and station trade.

L1 / no Matrix: 1.62-1.78s

10 XP / tile



Codex Shard

R7

DATA

BASE 360

A golden-cyan data crystal that carries persistent structured signals.

WHERE TO MINE

Codex Neon World, Neon Reef

NAMED USES IN THIS BUILD

Codex-neon crafting, advanced contracts, and premium trade.

L1 / no Matrix: 1.90-2.06s

14 XP / tile

MATERIALS 25-27

Resource dossiers



Silicon

R3

INDUSTRIAL

BASE 18

...

Semiconductor feedstock found in metallic, Codex, and reef deposits.

WHERE TO MINE

Codex Neon World, Metallic World, Neon Reef

NAMED USES IN THIS BUILD

Nebula Freighter, Navigation Chip, Gyroscope Array, electronics, and station work.

L1 / no Matrix: 1.34-1.47s

6 XP / tile



Circuit Board

R4

INDUSTRIAL

BASE 80

....

An integrated control board that occurs as a mineable game resource on select worlds.

WHERE TO MINE

Codex Neon World

NAMED USES IN THIS BUILD

Weapons, turrets, modules, repairs, Kinetic Drive, and planet systems.

L1 / no Matrix: 1.49-1.54s

8 XP / tile



Quantum Core

R7

ENERGY

BASE 320

.....

A compact exotic processor and power regulator.

WHERE TO MINE

Codex Neon World

NAMED USES IN THIS BUILD

Graviton Burst, Aegis Spear, Titan Bloom, Sentinel Matrix, Mega Laser, and level 7 module gates.

L1 / no Matrix: 1.91-2.06s

14 XP / tile

MATERIALS 28-30

Resource dossiers



Prism Ore

R6

CRYSTAL

BASE 230

Prismatic shield mineral that divides and redirects energy.

WHERE TO MINE

Crystal Forest, Neon Reef, Black Ice World, Prism Moon

NAMED USES IN THIS BUILD

Shield Cell III, Sentinel Matrix, Excavation Matrix upgrades, and luxury orders.

L1 / no Matrix: 1.76-1.94s

12 XP / tile



Ether Glass

R6

CRYSTAL

BASE 205

Translucent sensor glass prized for handling and optical systems.

WHERE TO MINE

Crystal Forest, Storm World, Neon Reef, Prism Moon

NAMED USES IN THIS BUILD

Life Support and Resource Magnet upgrades; optics, agile parts, contracts, and trade.

L1 / no Matrix: 1.76-1.92s

12 XP / tile



Nano Fiber

R5

INDUSTRIAL

BASE 95

High-strength flexible fiber used where mass and motion matter.

WHERE TO MINE

Crystal Forest

NAMED USES IN THIS BUILD

Frost Shard, Bio Sprayer, repairs, Engine Core, thrusters, fins, and Kinetic Drive.

L1 / no Matrix: 1.68-1.78s

10 XP / tile

MATERIALS 31-33

Resource dossiers



Cobalt

R4

METAL

BASE 55

A durable blue metal used in shield chemistry and precision mechanisms.

WHERE TO MINE

Crystal Forest, Storm World

NAMED USES IN THIS BUILD

Arc Pulsar, Frost Shard, shield cells, shield modules, brake systems, and planet modules.

L1 / no Matrix: 1.54-1.59s

8 XP / tile



Titanium

R5

METAL

BASE 70

Light, strong structural metal for high-performance hulls and turrets.

WHERE TO MINE

Storm World, Metallic World, Gloom Steel World

NAMED USES IN THIS BUILD

Hull Patch III, Hull Surge, ships, Rail Spear, bulkheads, and suit plating.

L1 / no Matrix: 1.68-1.82s

10 XP / tile



Plasma Cell

R5

ENERGY

BASE 120

A contained high-energy cell used by weapons and shields.

WHERE TO MINE

Storm World, Ember Quartz World

NAMED USES IN THIS BUILD

Advanced weapons, Prism Beam Array, abilities, shield repairs, and module systems.

L1 / no Matrix: 1.68-1.82s

10 XP / tile

MATERIALS 34-36

Resource dossiers



Alloy Frame

R6 INDUSTRIAL BASE 180

A precision structural frame that joins hull, turret, and reactor assemblies.

WHERE TO MINE

Metallic World, Gloom Steel World

NAMED USES IN THIS BUILD

Ships, Inferno Battery, Hull Patch III, Cargo Pod, Brake Servo, and bulkheads.

L1 / no Matrix: 1.82-1.96s

12 XP / tile



Gloom Steel

R6 METAL BASE 240

Heavy twilight alloy with strong armor and braking affinities.

WHERE TO MINE

Metallic World, Obsidian World, Gloom Steel World

NAMED USES IN THIS BUILD

Vitality Weave upgrades, heavy hulls, defense orders, and high-value trade.

L1 / no Matrix: 1.82-2.00s

12 XP / tile



Charcoal Block

R2 INDUSTRIAL BASE 12

Compressed carbon block for early heat and industry.

WHERE TO MINE

Obsidian World, Charcoal World

NAMED USES IN THIS BUILD

Smelting, early crafting, station orders, fuel-adjacent contracts, and trade.

L1 / no Matrix: no current matching deposit

4 XP / tile

BEYOND FIXED YIELDS

The supporting material chain

These catalogue items matter to crafting and survival but do not appear in the fixed planet pools listed in this manual.

Battery Pack**FUEL/ENERGY SUPPLY**

Crafting input for Kinetic Drive, engines, thrusters, turrets, and ships. It is not in any fixed planet yield pool.

Gas Canister**CONSUMABLE SUPPLY**

A catalogue resource used by the economy and inventory systems, not a fixed planetary yield.

Oxygen Tank**LIFE-SUPPORT SUPPLY**

Feeds CO2 Scrubber Core upgrades and surface logistics; not a fixed planetary yield.

Reinforced Hull Plate**CRAFTED ATTACHMENT**

Adds hull durability. Crafted from iron and titanium, then reused in ships, repairs, and upgrades.

Engine Core**CRAFTED ATTACHMENT**

Improves thrust. Crafted from copper, fuel, and nano fiber; required by ships, turrets, and Kinetic Drive.

Shield Matrix**CRAFTED ATTACHMENT**

Raises shield capacity and recovery. Built from crystal, cobalt, and circuit boards.

Weapon Array**CRAFTED ATTACHMENT**

Amplifies damage. Built from iron, plasma cells, and circuit boards; used in weapons, abilities, ships, and turrets.

Storage Pod**CRAFTED ATTACHMENT**

Utility storage module built from iron, copper, and alloy frames; used by cargo ships.

Navigation Chip**CRAFTED ATTACHMENT**

Improves travel efficiency. Built from silicon, circuit boards, and stardust.

Brake Servo**CRAFTED ATTACHMENT**

Improves braking; built from cobalt, alloy frames, and fuel.

Shield Capacitor / Regen Coil**CRAFTED SHIELD MODULES**

Capacity and recharge modules used directly in the Sentinel Matrix recipe.

Bulkhead / Fins / Predictor / Thruster**CRAFTED SPECIALIST MODULES**

High-tier hull, handling, weapon, and engine attachments made from the mined resource chain.

SEED-SPECIFIC MATERIALS

The 28-resource procedural pool

HOW THE POOL IS BUILT

The client creates 28 resources from 12 prefixes, 12 suffixes, 12 possible affinity stats, rarity R3-R8, a seeded hue, and a seeded base value. The server reproduces the browser generator and also retains legacy server-only keys for saved-inventory compatibility.

PREFIXES

Astra	Ember
Void	Gloom
Neon	Ether
Miasma	Nova
Codex	Quantum
Prism	Obsidian

SUFFIXES

Ore	Glass
Shard	Fiber
Bloom	Pearl
Crystal	Coal
Core	Spore
Salt	Alloy

AFFINITIES

attack	handling
damage	craft
shield	trade
regen	quest
speed	energy
braking	armor

PLANET ASSIGNMENT

- Each normal planet draws 2, 3, or 4 procedural keys from the finite pool using its planet seed.
- Duplicate draws are removed; fixed and procedural entries are combined, filtered to supported resource keys, and capped at 12 total.
- Procedural resources enter R3/R4/R5 seams according to their generated rarity. They are not tied to one biome type across every galaxy seed.
- Their stated use is station contracts, trading, and advanced crafting formulas; the generated affinity fields describe their design intent.
- For mining time, use the same rarity/HP table on page 4. R3-R8 at 70 HP takes 1.40-2.10s; R5-R8 at 95 HP takes 1.78-2.20s at Level 1 with no Matrix.

Route planning rule: scan the actual generated planet's resource list before committing to a procedural-resource run. Biome alone cannot guarantee its procedural bonus.

CROSS-REFERENCE 1/2

Fixed yield matrix

Dots mark exact membership in the fixed biome pool. Procedural bonuses are excluded.

	Dirt	Grass_Tuft	Stone	Copper	Iron	Crystal	Sand	Gold	Astral_Salt	Ice_Block	Black_Ice	Toxic_Sludge	Purple_Miasma	Miasma_Core	Lava_Rock	Magma_Core	Ember_Quartz	Dark_Obsidian
Lush World																		
Desert World																		
Ice World																		
Toxic World																		
Volcanic World																		
Void Spawn																		
Codex Neon World																		
Crystal Forest																		
Storm World																		
Metallic World																		
	Void_Ore	Dark_Matter_S	StarDust	Obelisk_Core	Neon_Ore	Codex_Shard	Silicon	Circuit_Board	Quantum_Core	Prism_Ore	Ether_Glass	Nano_Fiber	Cobalt	Titanium	Plasma_Cell	Alloy_Frame	Gloom_Steel	Charcoal_Bloc
Lush World																		
Desert World																		
Ice World																		
Toxic World																		
Volcanic World																		
Void Spawn																		
Codex Neon World																		
Crystal Forest																		
Storm World																		
Metallic World																		

CROSS-REFERENCE 2/2

Fixed yield matrix

Dots mark exact membership in the fixed biome pool. Procedural bonuses are excluded.

	Dirt	Grass_Tuft	Stone	Copper	Iron	Crystal	Sand	Gold	Astral_Salt	Ice_Block	Black_Ice	Toxic_Sludge	Purple_Miasma	Miasma_Core	Lava_Rock	Magma_Core	Ember_Quartz	Dark_Obsidian
Obsidian World			•															•
Miasma World												•	•	•				•
Charcoal World			•		•												•	•
Neon Reef						•												
Black Ice World						•				•	•							•
Ember Quartz World								•							•	•	•	
Prism Moon						•			•									
Gloom Steel World					•													•
Asteroid			•		•	•		•										
	Void_Ore	Dark_Matter_S	Stardust	Obelisk_Core	Neon_Ore	Codex_Shard	Silicon	Circuit_Board	Quantum_Core	Prism_Ore	Ether_Glass	Nano_Fiber	Cobalt	Titanium	Plasma_Cell	Alloy_Frame	Gloom_Steel	Charcoal_Bloc
Obsidian World	•	•															•	•
Miasma World	•		•															
Charcoal World																		•
Neon Reef					•	•	•			•	•							
Black Ice World										•								
Ember Quartz World															•			
Prism Moon			•							•	•							
Gloom Steel World														•		•	•	
Asteroid																		

CLOSING REFERENCE

Route planning & quick index

BEST FIXED TARGETS BY GOAL**STARTER REPAIR**

Lush for dirt, grass, stone, copper, and iron.

THERMAL WEAPONS

Volcanic or Ember Quartz World.

INDUSTRIAL FRAMES

Metallic or Gloom Steel World.

SHIELD CHAIN

Crystal Forest, Storm, Prism Moon, and Black Ice World.

VOID TECHNOLOGY

Void Spawn, Obsidian, or Miasma.

CIRCUITS AND CORES

Codex Neon; supplement with Neon Reef.

THREE-PASS EXPEDITION METHOD**1****SCAN**

Read the generated planet's actual resource list. Confirm any procedural bonus before landing.

2**MATCH**

Choose a world whose fixed pool contains several materials needed by the same recipe chain.

3**TIME**

Use rarity plus HP to estimate holds; upgrade Mining level and Excavation Matrix for rare-deposit runs.

SOURCE & VERSION NOTE

- Source package: Space-Eco-v4.0.22-Update / space-eco.html / server.js.
- The planet pool contains 18 weighted normal types plus asteroid landing support.
- All numeric tables in this manual use the full-durability tile values and formula present in the supplied build.
- Future balance changes to resource pools, tile HP, rarity, or Mining Array effects will change the calculated times.
- The short histories are original field-lore summaries created for this manual; mechanics and names remain source-derived.