



LDD

Basic Mining Tutorial

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Purpose

Through this tutorial, players are taught the proper approach to Mining, ore detection via the Scanner and Directional Scanner and proper use of the Flattening Tool. This should position them to be able to participate in the economy as well as be able to craft their own goods.

Layout

This tutorial will take place on a **Tutorial Planet**.

The player needs very little here, as we want to ensure their inventory is not crammed full of goods and keep them focused on digging. For the purposes of this tutorial, we should ensure that the Tutorial Planet has rich veins somewhat near the surface to keep players engaged and the mining trip short.

Text-to-speech will be present to guide players, as well as strategic use of sayWithUI accompanying these speech blocks where necessary.

We need only a single structure on this tutorial planet, and it needs to contain nothing more than a teleportation node, an object to set as the entry point, and some decoration. Any further constructs are simple waypoint markers (composed of an antennae and a few other odds and ends on an XS core).

Step 1: Scanner

This tutorial begins by teaching a player how to locate ore by using the Scanner Tool. This can prove to be a complicated process for the uninitiated, so care must be taken to explain each element. We waste no time, and get right to scanning:

1-1:	Activate the Scanner
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Start :	Player enters the Tutoplanet via teleporter
Aphelia :	“Welcome to the Basic Mining Tutorial. I am Aphelia, your guide. In this tutorial you will learn how to locate and mine ores. To continue, select the Scanner tool ([action]SELECT_TOOL_BAR_3[/action]).” edit: “Welcome to the Basic Mining Tutorial. I am Aphelia, your guide. In this tutorial you will learn how to locate and mine ore. Found underground, it requires the use of specialized tools to acquire. Through this training module, you’ll be taught how to use these tools to scan for, dig up, and gather it.”
Special	The player is alerted to this tool via a flashing HUD element. The icon should be highlighted.
Completed By	Player activates the Scanner Tool

1-2:

Scanner Explanation



Start :	Player has activated the Scanner tool
Aphelia :	<p>“You’ve activated the Scanner. This piece of technology will pinpoint ore at a distance. It is your primary tool for locating profitable veins of ore.”</p> <p>“On the right hand side is the distance, in meters, at which you can scan. Using this you’ll narrow down your search.” [Highlight Right Graph]</p> <p>Edit: On the right hand side is the distance, in meters, at which you can scan. Using this you’ll narrow down your search. Your starting scanner has a range limit of 200 meters. This can be expanded through acquiring Talents</p> <p>“The center graph reveals any detected ores. Each ore is represented by their own color.” [Highlight the Center Graph]</p> <p>Edit: The center graph reveals any detected ores. Each detected ore appears as a point on the graph, positioned at the distance at which it has been detected. As you get closer or further away the position will update, moving the previous detection point left and creating a trace that will form a line.</p> <p>“Your starting scanner has a range limit of 200 meters. This can be expanded through acquiring Talents.”</p>



Fig 1: Various highlights for the events in this step. (From top left): Right Graph (Range), Left Graph (Ores)

Special	The right side of the scanner graph should Highlight, as well as the LEft Side, in sequence with a time of approximately 15 seconds between them. This should provide enough time, visually, for players to notice the highlights.
Completed By	Aphelia finishes talking.

1-3:	Reach the Waypoint
Start :	Aphelia completed speech
Aphelia :	<p>“I’ve gone ahead and marked a waypoint for you to reach. Move towards it while letting your Scanner do its work.”</p> <p>“Notice that as you walk the scanner pulses. This happens automatically every few meters. When this occurs, it will update the graph on the scanner, giving you a real-time view on how far veins of ore are relative to your position.”</p> <p>Edit: Notice that as you walk the scanner pulses. This happens automatically every few meters. When this occurs, it will update the graph on the scanner, giving you a real-time view on how far veins of ore are relative to your position. By default your scanner will check for any available ores and show them all on your scanner.</p> <p>Your goal is to get close to one of these detected ores by ‘moving’ the line down as closely as possible.</p>
Special	Set tag_waypoint_1

Completed By	Player reaches the marked waypoint.
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1-4:	Lock the HUD
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Start :	Player reached tag_waypoint_1
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Aphelia :	“You can also filter the ores the scanner detects. Press ([action]TAB[/action]) to learn how.”
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Special	NA
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Completed By	Player presses TAB to lock the hud.
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1-5:	Click the Scanner Graph
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Start :	The HUD has been locked
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Aphelia :	“Pressing ([action]TAB[/action]) locks the HUD so you can interface directly with the Scanner. Click on the graph to continue.” [Highlight entire Scanner graph]
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Fig 1: Entire scanner area is highlighted

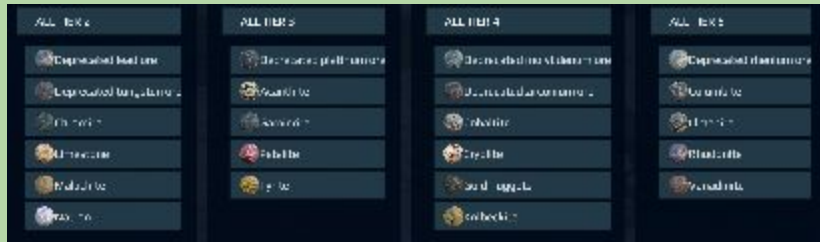
Special	Activate highlight on entire Scanner Graph
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Completed By	Player clicks the UI for the Scanner Graph
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1-6:	Learn about Filters
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Start :	The UI has been clicked, opening the Scanner Calibration screen
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Aphelia :	“This is the Scanner Calibration Screen. Through this menu you’ll be able to customize exactly how your Scanner will behave by adjusting the Filtering options.” In this tutorial we will only be scanning for Tier 1 ores. To continue, click on the other Tier columns to disable them.” [Highlight each of the columns in sequence]
Special	NA
Completed By	Player has clicked on each of the columns for materials over Tier 1, disabling them.



1-7:	Filter your Scannable Ores
Start :	Player has disabled all tier 2+ ores
Aphelia :	<p>“Now that you have disabled those tiers they will not be appearing on the scanner. You can customize the filtering options as you like to target specific materials.”</p> <p>“Try it yourself. Let’s refine your search even further: Disable Quartz to continue. You’ll note that when you Filter it it vanishes directly off of your Scanner Graph.”</p>
Special	NA
Completed By	Player has disabled Carbon in their Filter

1-8:	Learn about Short Range
Start :	Player has disabled Carbon.
Aphelia :	“Now take a look above the Tier columns at the RANGE options.” [Highlight the Range bar]

	<div style="border: 2px solid green; padding: 5px; display: flex; justify-content: space-around; align-items: center;"> SHORT RANGE LONG RANGE </div> <p>“By clicking LONG or SHORT range, you will swap the scan range of your Scanner. We’ll be using that later when we are closer to some ore.”</p>
Special	NA
Completed By	Aphelia has completed talking and 2 additional seconds have elapsed

1-9:	Close the Scanner HUD
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Start :	Aphelia has finished speaking.
Aphelia :	“Now close the Scanner Calibration Screen with [action]TAB[action].”
Special	NA
Completed By	Player has pressed TAB

1-10:	Reach Waypoint 2
Start :	Player has disabled the Scanner Calibration Screen

Aphelia :	<p>“You’ll notice that your displayed scanner now has an additional row of icons underneath it. This represents all of the materials you disabled on your Filter. Adjusting that Filter will likewise change the displayed materials in this row.”</p> <p>[Highlight this row for 10 seconds]</p> <p>“Head towards the next waypoint to continue.”</p>  <p><i>Fig 1: Active filter displaying shown and hidden ores</i></p>
Special	<p>Set a waypoint at tag_waypoint_2</p> <p>When activated, the highlight on the Filtered ores should be displayed for approximately 10-15 seconds to be sure the player notices it.</p>
Completed By	Player reaches tag_waypoint_2

1-11:	Manually Scan for Ore
Start :	Tag_waypoint_2 has been reached
Aphelia :	<p>“You can also trigger a pulse manually. This can be useful when stationary or in tight confines. To continue, trigger a pulse by holding ([action]ALT[/action]) and pressing ([action]LMB[/action])”</p>
Special	NA
Completed By	Pressing ALT + LMB with the Scanner active

1-12:	Reach Waypoint 3
Start :	Manual Scan has been completed
Aphelia :	<p>“Using manual scan will typically be most useful when underground and orienting yourself.”</p> <p>Let’s continue: Move to the next waypoint.”</p>

Special	Set a waypoint to tag_waypoint_3
Completed By	Reach waypoint 3

Step 2: Mining Tool

The player is now tasked with digging at the approximate spot where they have found ore. This step will be relatively short, as the mining tool needs very little explanation.

2-1a: Find a Good Spot to Dig

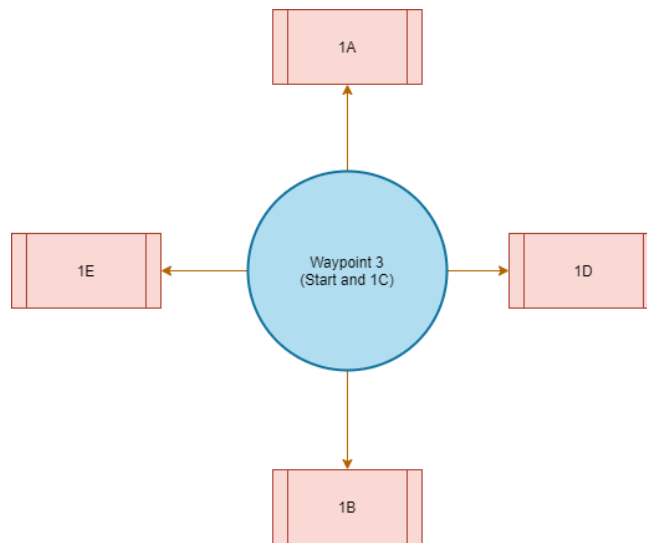


Fig 1: A rough approximation of waypoint positions from the player. The core unit at Waypoint 3 acts as a fulcrum for all waypoints set in this objective. They are offset from this position.

Start :	Tag_waypoint_3 has been reached
Aphelia :	<p>“Think of scanning for ore as a game of hot and cold. You’re trying to find the best location by investigating your region to locate the strongest potential place to dig.”</p> <p>“Doing so is most easily accomplished by picking a spot, and then checking the cardinal directions around it. Start by heading towards the waypoint I’ve set to the North and I’ll demonstrate.”</p>
Special	onCompleted:: set waypoint tag_north_point
Completed By	Aphelia has completed speaking

2-1b:	Reach North Waypoint
Start :	Aphelia completed speaking
Aphelia :	“Start by heading towards the waypoint I've set to the North.”
Special	Set a waypoint to tag_north_point
Completed By	Reach tag_north_point

2-1c:	Reach South Waypoint
Start :	Previous waypoint was reached
Aphelia :	“As you travel, monitor your Scanners Graph to keep an eye on the relative position of the ore you're hunting. You can see here we're just over 100 meters from the ore. Head to the southern waypoint next.”
Special	Set a waypoint to tag_south_point
Completed By	Reach tag_south_point

2-1d:	Head to Waypoint 3
Start :	Previous waypoint was reached
Aphelia :	“Now that you're back at your starting location, head to the waypoint I've set to the East of you.”
Special	Set a waypoint to tag_south_point
Completed By	Reach tag_waypoint_3

2-1e:	Reach East Waypoint
Start :	Previous waypoint was reached
Aphelia :	“It seems you're now even further away from the ore. Head to the Western waypoint and see if we can get closer to it.”
Special	Set a waypoint to tag_east_point

Completed By	Reach tag_east_point
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2-1e:	Reach West Waypoint
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Start :	Previous waypoint was reached
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Aphelia :	“It seems you're now even further away from the ore. Head to the Western waypoint and see if we can get closer to it.”
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Special	Set a waypoint to tag_west_point
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Completed By	Reach tag_west_point
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2-2a:	Your Ore Hotspot
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Start :	The player has reached the West point above.
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Aphelia :	“ We're less than 100 meters from the ore now, making this a good candidate for a digging spot..<break time='1.5s'/>. Now we'll teach you how to orient yourself via angles and altitude.”
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Special	NA
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Completed By	Aphelia is finished speaking
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2-2b:	Activate Flashlight
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Start :	The player has reached the West point above.
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Aphelia :	“When you're ready to continue, activate your Flashlight ([actionTOGGLE_FLASHLIGHT[/action]).
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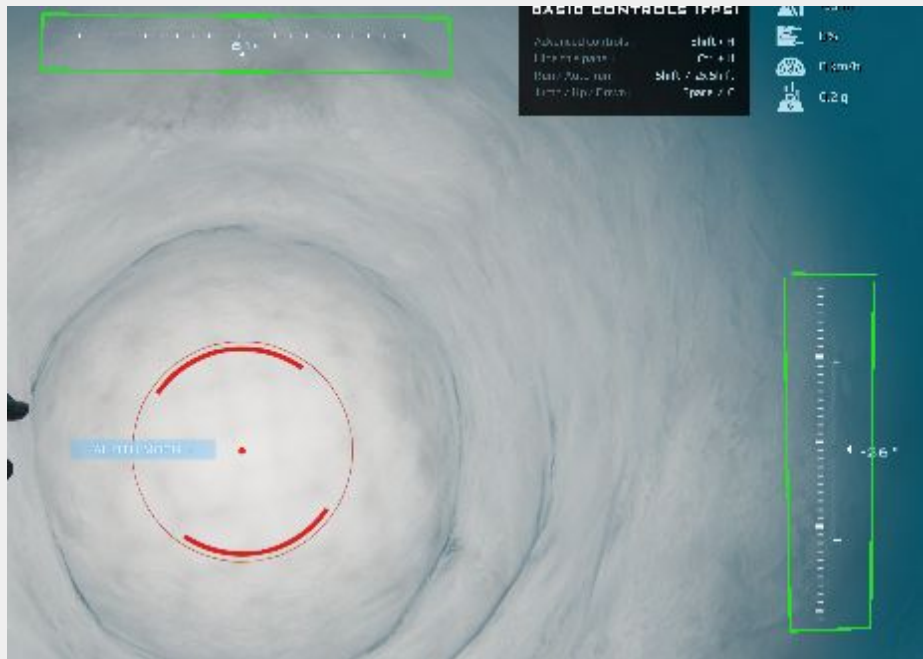
Special	NA
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Completed By	Player activates the Flashlight
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2-2c:	Flashlight Explanation
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Start :	Player has activated their Flashlight
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Aphelia :	“When your flashlight is activated, you will be able to gauge your relative position using the arrows it displays on your HUD.” [Highlight Arrows]
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“This can help you to precisely orient yourself to a heading and keep your digging organised.”


“You’ll want to keep yourself angled to about 60 degrees when you dig to ensure you’ll be able to get back aboveground easily later, and the Flashlight makes this task a breeze.”

Special	Highlight the Top and Right panes of the Flashlight for 15 seconds.
Completed By	Aphelia has finished speaking

2-3:	Altitude
Start :	Player has activated the Mining Tool
Aphelia :	“Before you start digging, there’s an important metric to be aware of. Note the highlighted data in the top-right of your screen : That represents your current altitude. This will help you determine how far to dig, and to know your current depth underground.”
Special	Highlight the Altitude meter
Completed By	Aphelia completes speaking

2-4:	Dig a Hole
Start :	The player has activated the Mining Tool
Aphelia :	<p>“When digging it is important to do so on an angle.
 You'll want to keep yourself angled to about 60 degrees when you dig to ensure you'll be able to get back aboveground easily later, and the Flashlight makes this task a breeze.</p> <p>You can dig the Scanner Tool [action]SELECT_TOOL_BAR_3[/action], Directional Scanner Tool [action]SELECT_TOOL_BAR_4[/action] or the Mining Tool [action]SELECT_TOOL_BAR_2[/action] in hand. Feel free to swap between them as needed while you dig. Go ahead and dig yourself a hole by clicking or holding your mouse button [action]LEFT_BUTTON[/action].”</p>
Special	Player must dig to 50 meters deep to complete this Objective.
Completed By	Player reaches 50 meters depth.

2-5:	Open your Inventory
Start :	Player is at 50 meters depth.
Aphelia :	“Let’s take a break from digging for a moment. We’re going to try out a new tool. When you’re ready to continue, open your [action]INVENTORY[/action]. ”
Special	NA
Completed By	Player opens their Inventory

2-6:	Equip the Flatten Tool
Start :	Inventory has been opened
Aphelia :	<p>“Locate the icon for the Flattening Tool within your inventory. Click ([action]LEFT_BUTTON[/action]) and drag it to the tool slot and drop it into slot 9, which should currently be empty.” [Highlight Slot 9]</p>
	

Special	Highlight the Tool Bar
Completed By	Player drops the tool into the 9th slot (Perhaps we can somehow lock them from doing this with any other slot?)

Step 3: Flattening Tool

Now the player is briefed on using the Flattening tool to make the most out of Mining. This step is solely to flatten out an area, and teach them how useful this can be to extend a digging pattern as needed.

3-1: Activate the Flatten Tool



Start :	Player has equipped the Flattening Tool to a slot
Aphelia :	“This tool works by flattening the terrain at the target reticle location, providing a completely flat plane on which you can walk. This drastically increases the speed at which you can dig horizontally, and will improve your efficiency. Activate it now ([action]SELECT_TOOL_BAR_9[/action]).”
Special	NA
Completed By	Player activates the Flattening tool.

3-2: Flatten some Terrain



Start :	Player has equipped the Flatten Tool to a slot
Aphelia :	“With wisely chosen talents,the Flattening Tool can make larger tunnels than the mining tool on its own, and can keep your tunnels perfectly flat. Go ahead and flatten some terrain.<break time='1.5s'/> I recommend turning this area into a larger cavern so that you can find your way back to the surface without getting lost. Landmarks make for useful orientation points. We'll continue once you've flattened enough ground.”
Special	Player must flatten X volume of terrain (unsure on suitable value, this will need to be massaged carefully)
Completed By	Player has flattened enough terrain


3-3:	Tool Explanation
Start :	Player has flattened X volume of terrain
Aphelia :	“Through use of this tool, you'll be able to create massive and organised mining tunnels. Using the flattening tool by aligning yourself to one of the cardinal directions on your minimap makes it both fast and easy to locate ore and to set up your own tunnels without becoming lost and confused.”
Special	Load UI with speech and image. Image should show a crisscrossing section of tunnels from above, with the cardinal directions represented.
Completed By	Speech completes

3-4:	Dig to the Waypoint
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Start :	Aphelia has briefed the player on the Flatten Tool
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Aphelia :	“Now combine using your Scanner Tool ([action]SELECT_TOOL_BAR_3[/action]) and Flatten Tool ([action]SELECT_TOOL_BAR_9[/action]) to get as close as possible to the waypoint buoy”
Special	Place a waypoint at tag_waypoint_4, a distance X meters from player. This should be placed where the ore is located.
Completed By	Player reaches tag_waypoint_4

3-5:	Open the Scanner Graph
Start :	Player has reached Waypoint 4
Aphelia :	“We’re quite close to the ore now, so please activate the Scanner Tool ([action]SELECT_TOOL_BAR_3[/action]), press Tab and click ([action]LEFT_BUTTON[/action])the Scanner Graph.” 
Special	Highlight the Short/Long range bar
Completed By	Player clicks on Short Range button.

3-6:	Activate Short Range
Start :	Short Range scanning has been activated
Aphelia :	“Next, activate Short Range mode.<break time='1.5s'/> Click Short Range to continue.”
Special	NA
Completed By	Aphelia has completed speaking

3-7a:	Short Range Explanation
Start :	Short Range scanning has been activated

Aphelia :	“The Short Range mode of the Scanner is extremely useful when you have narrowed down the distance to your target. It's maximum range is a mere 50 meters, which allows for much greater precision and efficiency. You can also quickly change range outside of the UI by simply holding the modifier key [action]MODIFIER_ALT[/action] and using the mouse wheel [action]WHEEL[/action].”
Special	NA
Completed By	Aphelia has completed speaking

3-7b:	Short Range Explanation 2
Start :	Short Range scanning has been activated
Aphelia :	“Press TAB to unlock your HUD and let's see if you can get even closer. Try wandering a few meters and then scan manually for Ores by holding the Modifier key [action]MODIFIER_ALT[/action] and clicking the mouse button [action]LEFT_BUTTON[/action].”
Special	NA
Completed By	Aphelia has completed speaking

Step 4: Directional Scanner

4-1:

Activate the Directional Scanner



Start :	Aphelia has completed speaking.
Aphelia :	“Now that we've closed in on some ore, we'll need to pinpoint its exact location. For this we need the Directional Scanner Tool ([action]SELECT_TOOL_BAR_3[/action]). When you have it equipped, ore within 35 meters in the direction you aim will be detected.<break time='1.5s'/> With talents active, the range can be increased to 50 meters. Let's give the tool a try. Activate your Directional Scanner with ([action]SELECT_TOOL_BAR_4[/action]).”
Special	NA
Completed By	Player activates the Directional Scanner tool

4-2:

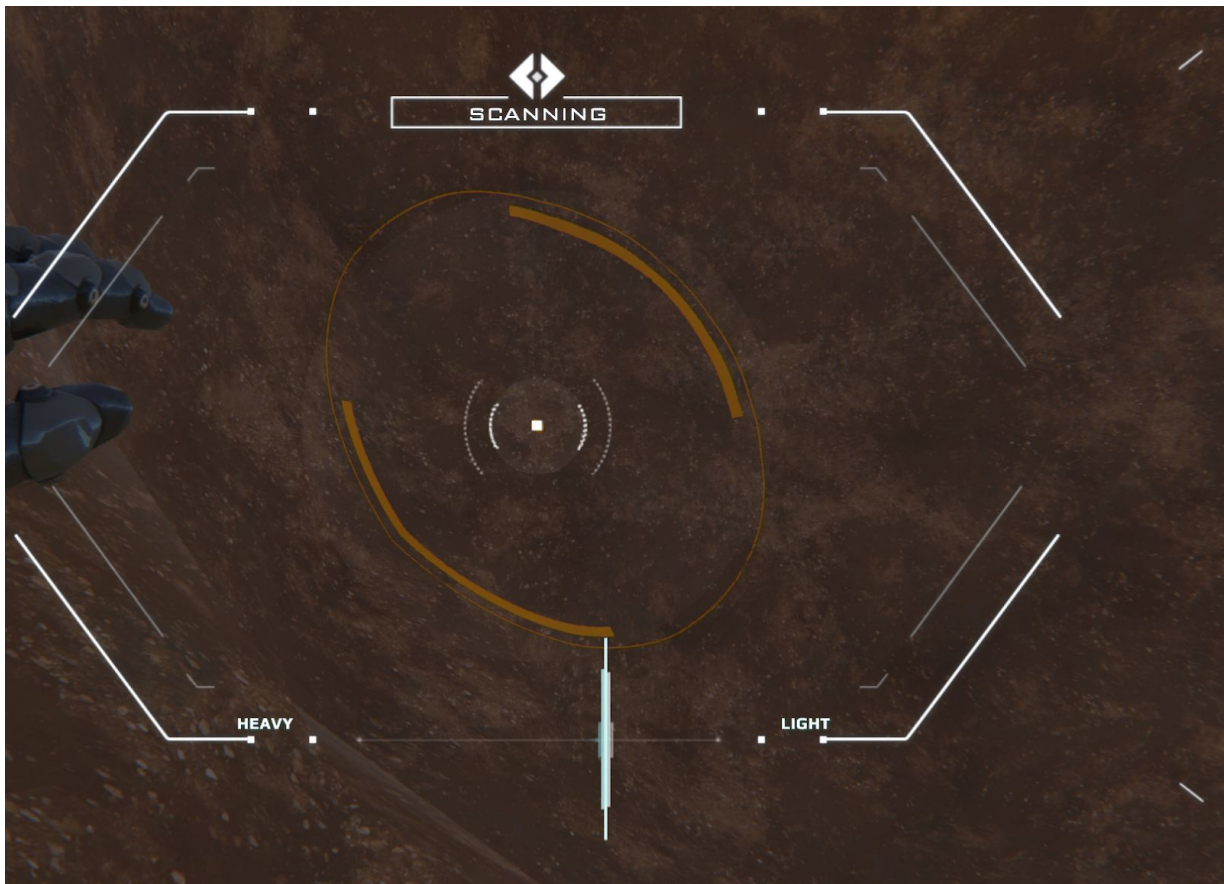
Learn about the Directional Scanner



Start :	Directional scanner is active
Aphelia :	“When underground and at close range to your target ore it can often be difficult to tell precisely which direction to dig to locate your ore. That’s where the Directional Scanner comes into play.”
Special	Load a SayWithUI element for this step.
Completed By	Speech has completed

4-3:

Locate Ore with the Directional Scanner



Start :	Previous speech has completed
Aphelia :	<p>“As you move the targeting reticle around, you’ll eventually notice bars that shrink and grow on your scanner graph, and a telltale sound of static. This indicates there is Ore in the direction you are currently pointing. The larger the graph peak, the closer it is.”</p> <p>“A tip: try to scan slowly, and in a zigzag pattern. This is more efficient than randomly pointing in different directions and will have a higher degree of success. We’ll continue when you’ve detected a source of ore.”</p>
Special	Player has detected ore in their scanner. As soon as it appears on the scanner, we load the next objective(unless the speech has not yet completed. The event must wait for that before it completes.)
Completed By	Player detects some ore successfully.

4-4:	Learn about the Directional Scanner
Start :	Ore has been detected with the Directional Scanner
Aphelia :	<p>“There it is! You've found the direction to mine. Scan and dig until you see a green outline on some terrain. This represents the Ore you are here to mine”</p> <p>“To collect Ore, switch to your Mining Tool [action]SELECT_TOOL_BAR_2[/action] with its hotkey. This is usually 2. Clearing terrain around the ore will reveal more of the vein..”</p>
Special	NA
Completed By	Player changes to their Mining Tool

4-5:

Locate the Ore



Start :	Player has reached tag_waypoint_5
Aphelia :	To gather ore, place your targeting reticle on the highlighted vein. Then, hold down the mouse button [action]LEFT_BUTTON[/action]. Your brush will start purple, and slowly increase in size. When you are happy with the radius simply let go of the mouse button [action]LEFT_BUTTON[/action] and the ore will be collected if you have room in your Nanopack. If you are out of room, no ore will be harvested. Veins can get quite large, and will sometimes require several trips to completely collect. ”
Special	NA
Completed By	Speech completes

Step 5: Collecting Ore

5-1:	Resize Your Brush
Start :	The player has reached a depth of 20 meters
Aphelia :	“You can adjust the size of your digging brush. Larger brushes allow you to carve chunks out of terrain at a much faster pace when precision is not needed. To resize your brush, press the modifier key [action]MODIFIER_CTRL[/action] and use the Mousewheel [action]WHEEL[/action].”
Special	NA
Completed By	Player resizes their digging brush

5-2:	Collect the Ore
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Start :	Player has activated the Mining Tool
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Aphelia :	<p>“To collect ore, place your targeting reticle on the highlighted vein. Then, hold down the [action]LEFT MOUSE[/action] button. Your brush will start purple, and slowly increase in size. When you are happy with the radius...simply let go of the [action]LEFT MOUSE[/action] button and the ore will be collected if you have room in your Nanopack. If you are out of room, no ore will be harvested.”</p> <p>“Go ahead and collect a volume of 500 from the vein in front of you.”</p>
Special	NA
Completed By	Player collects 500 ore

5-2:	Complete Tutorial
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Start :	Player has collected 500L of ore
Aphelia :	“You've proven you're able to locate and harvest raw minerals efficiently, and it is my judgement that you are ready to tackle this for real. To exit this module, head back to the surface and use the teleporter. I've marked it for you..”
Special	Set waypoint to tag_exit_teleporter
Completed By	Reaching the waypoint

5-3:	Exit
Start :	Player has reached exit teleporter waypoint
Aphelia :	“Good luck using your new found mining skills, and don't forget that improving your mining talents will improve your performance immensely.”
Special	NA
Completed By	Player uses teleporter

Schedule

Element	Count	Element	Count
XS Core (Entrance)	1	Teleportation Node	1
Round Carpet	1	Antennae(small)	4
Miscellaneous Decorations	As Needed	XS Core (Waypoints)	4

Glossary

[action]: Denotes a reference to virtual_inputs.js keypress designations.

Detection : Scanning results in detection if ores are present.

Digging : Removing terrain via the mining tool.

Directional Scanner Tool : A tool that excels at locating ore in the direction of its raycast.

Flattening Tool : A tool used to rapidly make terrain flat, which is ideal for mining and building.

Graph: A visible graphical representation of Scanner Tool or Directional Scanner results.

Mining Tool : A tool used exclusively for digging and collecting ore.

Mining : The act of Digging in terrain.

Ore : Exploitable resources located underground.

Scanning Tool : Used to locate ore based on distance from the players present location.

Scanner Calibration Screen: The screen where a player can manually adjust the Scanner Tool to search for specific types of ores or swap from Long to Short range.

Targeting Reticle : The central cursor on the players screen.