



The science behind the report: **No SSDs? No problem.**

This document describes what we tested, how we tested, and what we found. To learn how these facts translate into real-world benefits, read the report [No SSDs? No problem.](#)

We concluded our hands-on testing on February 20, 2024. During testing, we determined the appropriate hardware and software configurations and applied updates as they became available. The results in this report reflect configurations that we finalized on November 30, 2023 or earlier. Unavoidably, these configurations may not represent the latest versions available when this report appears.

Our results

To learn more about how we have calculated the wins in this report, go to <http://facts.pt/calculating-and-highlighting-wins>. Unless we state otherwise, we have followed the rules and principles we outline in that document.

Table 1: Average time, in seconds, it took the Lenovo® 100w Gen 4 laptops to complete tasks in education apps. Less time is better.

	Lenovo 100w Gen 4 (with UFS 3.1 storage)	Lenovo 100w Gen 4 (with SSD storage)	Difference (seconds)	Difference (percentage)
Blender				
Launch Blender	3.7	3.6	-0.1	-2.47%
Bake data (fire simulation)	10.8	10.2	-0.6	-6.01%
Bake data (fluid simulation)	30.6	30.3	-0.4	-1.21%
Bake mesh (fluid simulation)	40.1	41.1	1.0	2.41%
Render 2D animation	600.0	605.1	5.1	0.85%
Render 3D image	1418.1	1599.2	181.1	11.32%
Labster				
Load Plate Tectonics module	34.0	36.6	2.6	7.11%
Load Impact on Climate Change module	44.6	47.3	2.6	5.57%
Load Cell Division module	32.5	34.0	1.4	4.19%

	Lenovo 100w Gen 4 (with UFS 3.1 storage)	Lenovo 100w Gen 4 (with SSD storage)	Difference (seconds)	Difference (percentage)
CoSpaces Edu				
Load Pirate Roller Coaster CoSpace	4.4	4.6	0.2	4.08%
Load End of Dinosaurs CoSpace	2.3	2.1	-0.2	-8.33%
Load At the Airport CoSpace	4.2	4.0	-0.2	-4.14%
Load Dinosaur Safari CoSpace	2.6	2.7	0.1	2.08%

Table 2: Average time, in seconds, it took the Lenovo 100w Gen 4 laptops to complete productivity tasks. Less time is better.

	Lenovo 100w Gen 4 (with UFS 3.1 storage)	Lenovo 100w Gen 4 (with SSD storage)	Difference (seconds)	Difference (percentage)
Time to boot	15.6	15.4	-0.2	-1.01%
Time to enter sleep	2.5	2.6	0.1	5.53%
Time to launch Microsoft Edge web browser	3.3	3.3	0.0	0.00%
Microsoft Office desktop app - Time to launch Microsoft Word	7.7	7.4	-0.2	-2.99%
Microsoft Office desktop app - Time to save a document in Microsoft Word	1.1	1.1	0.0	-1.02%
Microsoft Office desktop app - Time to launch Microsoft Excel	1.9	1.7	-0.2	-9.09%
Microsoft Office desktop app - Time to save a file in Microsoft Excel	73.2	75.0	1.8	2.36%
Time to join a Microsoft Teams Meeting	4.3	4.3	-0.1	-2.09%
Time to edit a 1-minute video	61.6	59.4	-2.2	-3.63%
Microsoft Office web app - Time to launch Microsoft Word	1.7	1.6	-0.1	-4.20%
Microsoft Office web app - Time to export an Excel file to PDF	5.1	5.3	0.2	3.95%
Time to transfer a large file	24.2	23.8	-0.4	-1.77%
Time to transfer multiple large image files	13.0	12.9	-0.1	-0.78%

Table 3: Average time, in seconds, it took the Lenovo 300w Yoga Gen 4 laptops to complete tasks in education apps. Less time is better.

	Lenovo 300w Yoga Gen 4 (with UFS 3.1 storage)	Lenovo 300w Yoga Gen 4 (with SSD storage)	Difference (seconds)	Difference (percentage)
Blender				
Launch Blender	3.7	3.5	-0.2	-6.03%
Bake data (fire simulation)	10.7	10.2	-0.5	-5.25%
Bake data (fluid simulation)	27.0	27.8	0.9	3.08%
Bake mesh (fluid simulation)	37.3	39.0	1.7	4.39%
Render 2D animation	614.7	614.3	-0.4	-0.07%
Render 3D image	1495.5	1426.1	-69.4	-4.87%
Labster				
Load Plate Tectonics module	39.3	36.9	-2.4	-6.42%
Load Impact on Climate Change module	45.0	45.8	0.8	1.79%
Load Cell Division module	32.6	35.7	3.1	8.56%
CoSpaces Edu				
Load Pirate Roller Coaster CoSpace	5.3	6.1	0.8	13.11%
Load End of Dinosaurs CoSpace	2.3	2.6	0.3	11.21%
Load At the Airport CoSpace	5.7	7.4	1.7	22.79%
Load Dinosaur Safari CoSpace	3.5	3.9	0.4	11.05%

Table 4: Average time, in seconds, it took the Lenovo 300w Yoga Gen 4 laptops to complete productivity tasks. Less time is better.

	Lenovo 300w Yoga Gen 4 (with UFS 3.1 storage)	Lenovo 300w Yoga Gen 4 (with SSD storage)	Difference (seconds)	Difference (percentage)
Time to boot	17.1	16.6	-0.5	-2.81%
Time to enter sleep	2.8	2.9	0.1	4.60%
Time to launch Microsoft Edge web browser	3.8	3.6	-0.2	-4.27%
Microsoft Office desktop app - Time to launch Microsoft Word	7.4	7.2	-0.2	-2.77%
Microsoft Office desktop app - Time to save a document in Microsoft Word	1.2	1.1	-0.1	-7.77%
Microsoft Office desktop app - Time to launch Microsoft Excel	1.8	2.0	0.1	7.30%
Microsoft Office desktop app - Time to save a file in Microsoft Excel	74.0	77.8	3.8	4.93%
Time to join a Microsoft Teams Meeting	3.6	4.0	0.3	8.71%
Time to edit a 1-minute video	63.2	60.1	-3.2	-5.25%

	Lenovo 300w Yoga Gen 4 (with UFS 3.1 storage)	Lenovo 300w Yoga Gen 4 (with SSD storage)	Difference (seconds)	Difference (percentage)
Microsoft Office web app - Time to launch Microsoft Word	1.6	1.5	-0.1	-7.25%
Microsoft Office web app - Time to export an Excel file to PDF	4.8	5.0	0.2	3.58%
Time to transfer a large file	25.3	24.7	-0.6	-2.34%
Time to transfer multiple large image files	13.8	13.5	-0.4	-2.64%

System configuration information

Table 5: Detailed information on the systems we tested.

System	Lenovo 100w Gen 4 (with UFS 3.1 storage)	Lenovo 100w Gen 4 (with SSD storage)
Processor		
Vendor	Intel®	Intel
Model number	N100	N100
Core frequency (GHz)	0.8 – 3.4	0.8 – 3.4
Number of cores	4	4
Memory		
Amount (GB)	4	4
Type	LPDDR5-4800	LPDDR5-4800
Graphics		
Vendor	Intel	Intel
Model number	UHD Graphics	UHD Graphics
Storage		
Model	Samsung KLUDG4UHGC-BOE1	System 1: UMIS RPJTJ128MKP1MDY Systems 2 and 3: Samsung MZALQ128HCHQ-00BL1
Amount (GB)	128	128
Type	UFS 3.1	SSD M.2 2242 PCIe® 3.0 x4 – NVMe®
Connectivity/expansion		
Wireless internet	Intel Wi-Fi 6 AX201	Intel Wi-Fi 6 AX201
Bluetooth	5.1	5.1
USB	1x USB-C™ 3.2 Gen 1 1x HDMI® 1.4 2x USB-A 3.2 Gen 1 1x audio jack	1x USB-C 3.2 Gen 1 1x HDMI 1.4 2x USB-A 3.2 Gen 1 1x audio jack
Battery		
Type	Integrated lithium-polymer	Integrated lithium-polymer
Rated capacity (Whr)	47	47
Display		
Size and type	11.6" HD TN Non-touch	11.6" HD TN Non-touch
Resolution	1366 x 768	1366 x 768
Operating system		
Vendor	Microsoft	Microsoft
Name	Windows 11 Pro	Windows 11 Pro
Version	23H2 Build 22631.2715	23H2 Build 22631.2715

System	Lenovo 100w Gen 4 (with UFS 3.1 storage)	Lenovo 100w Gen 4 (with SSD storage)
BIOS		
BIOS name and version	Lenovo L3CN30WW (10/24/2023)	Lenovo L3CN30WW (10/24/2023)
Dimensions		
Height (in.)	0.75	0.75
Width (in.)	11.3	11.3
Depth (in.)	7.9	7.9
Weight (lb.)	2.56	2.56

Table 6: Detailed information on the systems we tested.

System	Lenovo 300w Yoga Gen 4 (with UFS 3.1 storage)	Lenovo 300w Yoga Gen 4 (with SSD storage)
Processor		
Vendor	Intel	Intel
Model number	N100	N100
Core frequency (GHz)	0.8 – 3.4	0.8 – 3.4
Number of cores	4	4
Memory		
Amount (GB)	4	4
Type	LPDDR5-4800	LPDDR5-4800
Graphics		
Vendor	Intel	Intel
Model number	UHD Graphics	UHD Graphics
Storage		
Model	Samsung KLUJG4UHG-C-B0E1	Samsung MZALQ128HCHQ-00BL1
Amount	128 GB	128 GB
Type	UFS 3.1	SSD M.2 2242 PCIe 3.0 x4 – NVMe
Connectivity/expansion		
Wireless internet	Intel Wi-Fi 6 AX201	Intel Wi-Fi 6 AX201
Bluetooth	5.1	5.1
USB	1x USB-C 3.2 Gen 1 1x HDMI 1.4 2x USB-A 3.2 Gen 1 1x audio jack	1x USB-C 3.2 Gen 1 1x HDMI 1.4 2x USB-A 3.2 Gen 1 1x audio jack
Battery		
Type	Integrated lithium-polymer	Integrated lithium-polymer
Rated capacity (Whr)	47	47

System	Lenovo 300w Yoga Gen 4 (with UFS 3.1 storage)	Lenovo 300w Yoga Gen 4 (with SSD storage)
Display		
Size	11.6" HD IPS Touch	11.6" HD IPS Touch
Resolution	1366 x 768	1366 x 768
Operating system		
Vendor	Microsoft	Microsoft
Name	Windows 11 Pro	Windows 11 Pro
Version	23H2 Build 22631.3007	23H2 Build 22631.3007
BIOS		
BIOS name and version	Lenovo L3CN30WW (10/24/2023)	Lenovo L3CN30WW (10/24/2023)
Dimensions		
Height (in.)	0.74	0.74
Width (in.)	11.3	11.3
Depth (in.)	7.9	7.9
Weight (lb.)	2.82	2.82 lbs.

How we tested

Setting up the systems

Setting up and updating the OEM image

1. Boot the system.
2. Follow the on-screen instructions to complete installation, using the default selections when appropriate.
3. Set the Windows (plugged in) Power Mode to Best Performance.
4. Set Screen and Sleep options to Never:
 - Right-click the desktop, and select Display settings.
 - From the left column, select System.
 - Click Power & Battery.
 - For all power options listed under Screen and Sleep, select Never.
5. Disable User Account Control notifications:
 - Select Windows Start, type UAC, and press Enter.
 - Move the slider control to Never notify, and click OK.
6. Download and install the latest BIOS from www.lenovo.com.
7. Run Windows Update, and install all updates available.
8. Verify the date and time are correct, and synchronize the system clock with the time server.
9. Pause Automatic Windows Updates:
 - Click the Windows Start button.
 - Type Windows Update settings and press Enter.
 - From the Pause updates drop-down menu, select Pause for 5 weeks.

Capturing an image

1. Connect an external HDD to the system.
2. Click Windows Menu button, and type Control Panel in the search bar. Click Control Panel→System and Security→Backup and Restore (Windows 7)→Create a system image.
3. Verify that the external HDD is selected as the save drive, and click Next.
4. Verify that all drives are selected to back up, and click Next.
5. Click Start backup.
6. At Do you want to create a system repair disc, select No, and close the dialogs.

Restoring an image

1. Connect an external HDD to the system.
2. Press and hold the Shift key while Restarting the system.
3. Select Troubleshoot.
4. Select Advanced options.
5. Select See more recovery options.
6. Select System image recovery.
7. Select the User account.
8. Enter the system password, and click Continue.
9. At the Restore system files and settings screen, select Next.
10. Verify that the external HDD is selected, and click Next.
11. Once the recovery has completed, click Finish.

Performing hand-timed tests

A stopwatch is necessary for timing purposes.

1. Once per 24-hour period (before any testing), perform a Windows Defender full virus scan, which will prevent a virus scan from running during the assessment:
 - a. Boot the system.
 - b. Select Windows Start.
 - c. Type `Windows Security`, and press Enter.
 - d. Click Virus & threat protection.
 - e. Click Scan options.
 - f. Select Full scan, and click the Scan now button.
 - g. Wait for the scan to complete before moving on to the ProcessIdleTasks step below.
2. Once per 24-hour period (before any testing), perform the the ProcessIdleTask command, which will prevent the maintenance tasks from running during the assessment:
 - a. Select Windows Start.
 - b. To launch an administrative command prompt, type `cmd`, and press Ctrl+Shift+Enter.
 - c. Type `Cmd.exe /c start /wait Rundll32.exe advapi32.dll,ProcessIdleTasks`. Do not interact with the system until the command completes.
 - d. After the command completes, wait 5 minutes before running any assessments.

Booting the system

1. Simultaneously start the timer and press the power button.
2. Stop the timer when the Windows Taskbar appears.
3. Record the result.
4. Allow the system to remain booted for 2 minutes.
5. Shut down the system.
6. Repeat steps 1 through 5 two more times.

Entering sleep mode

1. Boot the system, and allow the system to remain booted for 2 minutes.
2. Simultaneously start the timer and enter the system into Sleep mode.
3. Stop the timer when the system is in Sleep mode, as indicated by the light located on the power button pulsing.
4. Record the result.
5. To wake the system from sleep mode, press the power button.
6. Shut down the system.
7. Repeat steps 1 through 6 two more times.

Launching the Microsoft Edge web browser

Setting up the test

1. Open the Microsoft Edge web browser, and set the homepage to <https://www.microsoft.com/en-us/>.
2. In the top right corner of the Edge web browser, click the three-dot menu.
3. Select Settings.
4. In the left column, select Start, home, and new tabs.
5. Select Open these pages, and click Use all open tabs.
6. Close Microsoft Edge, and re-open to verify that the web page that opens is <https://www.microsoft.com/en-us/>.

Running the test

1. Simultaneously start the timer and launch Microsoft Edge.
2. Stop the timer once the web page fully loads, as indicated by the spinning Microsoft icon becoming solid.
3. Record the result.
4. Repeat steps 1 through 3 two more times.

Launching Microsoft Word and saving a document (desktop app)

Setting up the test

1. Install a licensed version of Microsoft 365.
2. Copy the 89.8MB test Word file document to the Documents directory.
3. Launch Microsoft Word, and verify that the correct account is logged in and that there are no first run pop-ups to respond to.
4. Browse to the test Word file document, and open it.
5. Close Microsoft Word.

Running the test

1. Simultaneously start the timer and launch Microsoft Word.
2. Stop the timer once Word loads, as indicated by the Word Template home screen appearing and the mouse cursor ceasing to spin.
3. Record the result.
4. In the left column, click the Open icon, and navigate to the test Word file document.
5. Click Open.
6. To bring up the Find/Replace dialog box, press Ctrl+H.
7. In the Find what field, type OR, and in the Replace with field, type TEST. Click Replace All.
8. At the We made 803 replacements dialog screen, click OK, and close the Find/Replace dialog box.
9. Click File→Save As, and give the file a unique name.
10. Simultaneously start the timer and click Save.
11. Stop the timer when the file is saved, as indicated by Saved appearing in the top menu bar.
12. Close Microsoft Word.
13. Repeat steps 1 through 12 two more times.

Launching Microsoft PowerPoint and saving a file (desktop app)

Setting up the test

1. Install a licensed version of Microsoft 365.
2. Copy the test 180MB PowerPoint file to the Documents directory.
3. Launch Microsoft PowerPoint, and verify that the correct account is logged in and that there are no first run pop-ups to respond to.
4. Browse to the test PowerPoint file, and open the test.
5. Close Microsoft PowerPoint.

Running the test

1. Simultaneously start the timer and launch Microsoft PowerPoint.
2. Stop the timer once PowerPoint loads, as indicated by the PowerPoint Template home screen appearing and the mouse cursor ceasing to spin.
3. Record the result.
4. In the left column, click the Open icon, and navigate to the test PowerPoint file.
5. Click Open.
6. To bring up the Find/Replace dialog box, press Ctrl+H.
7. In the Find what field, type OR, and in the Replace with field, type TEST. Click Replace All.
8. At the PowerPoint made 156 replacements dialog screen, click OK, and close the Find/Replace dialog box.
9. Click File→Save As, and give the file a unique name.
10. Simultaneously start the timer and click Save.
11. Stop the timer when the file is saved, as indicated by Saved to this PC appearing in the top menu bar.
12. Close Microsoft PowerPoint.
13. Repeat steps 1 through 12 two more times.

Joining a Microsoft Teams meeting

Setting up the test

1. Install a licensed version of Microsoft 365.
2. Launch Microsoft Teams, and sign into the test account on the system under test (SUT).
3. Close Microsoft Teams.
4. To have a two-way video conference, set up Teams on a second laptop.

Running the test

1. On both the SUT and the second laptop, launch Teams.
2. On the second laptop, at the top of the screen, click the Meet icon. Click the Start meeting button.
3. In the Invite people to join you dialog box, type the SUT Teams account name, and click Call.
4. On the SUT, accept the Call notification.
5. Simultaneously start the timer and click Join now.
6. Stop the timer when the SUT has joined the meeting, as indicated by the webcam video displaying on the SUT.
7. Close Microsoft Teams.
8. Repeat steps 1 through 7 two more times.

Editing a 1-minute video in Microsoft Clipchamp

Setting up the test

1. Copy the 5-minute 600MB 1080p test video file to the Documents directory.
2. Launch Microsoft Clipchamp, and sign into the test Microsoft account.
3. Close Microsoft Clipchamp.

Running the test

1. Launch Microsoft Clipchamp.
2. Click Create a new video.
3. Click Import media, select the test video file, and click Open.
4. Highlight the newly imported video, and click the green + icon to add to timeline.
5. Move the timeline scrub bar to the beginning of the timeline.
6. Click the 5-second skip button to advance the timeline scrub bar to 30 seconds.
7. Click the Split button.
8. Click the Transitions button, and select Heart transition, and drag and drop it between the newly split sections.
9. Continue to click the 5-second skip button to advance the timeline scrub bar to 1 minute.
10. Click the Split button.
11. Right-click on the remaining portion of the video, and click Delete.
12. Click the Export button.
13. Simultaneously start the timer and select 1080p High quality.
14. Stop the timer when the video has been exported as indicated by the progress bar disappearing.
15. Repeat steps 1 through 14 two more times.

Launching Microsoft Word (web app)

1. Open the Microsoft Edge web browser, go to www.office.com, and sign into the test Microsoft 365 account.
2. Simultaneously start the timer and from the left column, launch Microsoft Word.
3. Stop the timer once Word loads, as indicated by the Word Template home screen appearing.
4. Record the result.
5. Close the Microsoft Edge web browser.
6. Repeat steps 1 through 5 two more times.

Exporting an Excel file to PDF

1. Open the Microsoft Edge web browser, go to www.office.com, and sign into the test Microsoft 365 account.
2. From the left column, launch Microsoft Excel.
3. Open the test file.
4. Click File→Export.
5. Simultaneously start the timer and click Download as PDF.
6. Stop the timer when the file is exported to PDF, as indicated by PDF displaying after export.
7. Close the Microsoft Edge web browser.
8. Repeat steps 1 through 7 two more times.

Transferring a large video file from an external drive

Setting up the test

1. For this test, you will need a 2.1GB MP4 file on an external USB drive.

Running the test

1. Attach the external USB drive to the system under test.
2. Browse to the large test file, right-click the file, and select Copy.
3. Simultaneously start the timer and paste the test file to the Video directory.
4. Stop the timer once the file has finished copying, as indicated by the progress bar disappearing.
5. Record the result.
6. Repeat steps 1 through 5 two more times.

Transferring 50 large file image files from an external drive

Setting up the test

1. For this test, you will need 50 large NEF RAW image files totaling 1.0 GB on an external USB drive.

Running the test

1. Attach the external USB drive to the system under test.
2. Open the test file directory, and to select all 50 images, press Ctrl+A.
3. To copy all 50 images, press Ctrl+C.
4. Simultaneously start the timer and paste the 50 images to the Pictures directory.
5. Stop the timer once the image files have been copied, as indicated by the progress bar disappearing.
6. Record the result.
7. Repeat steps 1 through 6 two more times.

Timing Blender tasks

Setting up the test

1. Go to www.blender.org, and download and install Blender v4.0.1.
2. Go to <https://www.blender.org/download/demo-files/>, and download the following four test files:
 - Fire simulation
 - Saucy viscosity
 - (Anim) ForYou2014
 - Car demo

Launching the Blender application

1. Simultaneously start the timer and launch Blender.
2. Stop the timer when Blender fully loads and the splash screen appears.
3. Repeat steps 1 and 2 two more times.

Baking data for a fire simulation

1. Open the fire simulation.blend Blender test file.
2. On the right panel, click the Physics Properties tab.
3. In the Cache drop-down menu, verify that the Frame Start time is set to 1 and the End time is set to 300.
4. Scroll up the Physics tab, and simultaneously start the timer and click Bake Data. (Note: If there is no Bake Data button, click the Free Data button, which will then change to the Bake Data option.)
5. Stop the timer when the bake data process is complete, as indicated by the bottom progress bar disappearing.
6. Repeat steps 1 through 5 two more times.

Baking data for a fluid simulation

1. Open the saucy viscosity.blend Blender test file.
2. On the right panel, click the Physics Properties tab.
3. In the Cache drop-down menu, verify that the Frame Start time is set to 1 and the End time is set to 300.

4. Scroll up the Physics tab, and simultaneously start the timer and click Bake Data. (Note: If there is no Bake Data button, click the Free Data button, which will then change to the Bake Data option.)
5. Stop the timer when the bake data process is complete, as indicated by the bottom progress bar disappearing.
6. Repeat steps 1 through 5 two more times.

Baking a mesh for a fluid simulation

1. With the saucy viscosity Blender test file still open after running the bake data process, in the Physics Properties tabm expand the Mesh drop-down menu.
2. Simultaneously start the timer and click Bake Mesh.
3. Stop the timer when the bake mesh process is complete, as indicated by the bottom progress bar disappearing.
4. Repeat steps 1 through 3 two more times.

Rendering a 2D animation

1. Open the (Anim) ForYou 2014.blend test file.
2. To open the render drop-down menu, click Render.
3. Simultaneously start the timer and click Render Animation.
4. Stop the timer when the render process is complete, as indicated by frames 1336/1336 being rendered.
5. Repeat steps 1 through 4 two more times.

Rendering a 3D image

1. Open the bmw27_cpu.blend test file.
2. To open the render drop-down menu, click Render.
3. Simultaneously start the timer and click Render Image.
4. Stop the timer when the render process is complete, as indicated by Sample 1225/1225 being rendered and the bottom progress bar disappearing.
5. Repeat steps 1 through 4 two more times.

Timing Labster tasks

Setting up the tests

1. Create a Labster account at <https://www.labster.com/>.

Loading the Plate Tectonics module

1. Open the Edge browser, and navigate to <https://www.labster.com/>.
2. Click Login, and log into your account.
3. Click Catalog.
4. Click Simulations.
5. Navigate to the Plate Tectonics: Boundaries and crustal features module.
6. Simultaneously start the timer and click Play.
7. Stop the timer once the module fully loads, as indicated by the progress bar reaching 100%.
8. Repeat steps 1 through 7 two more times.

Loading the Human Impact on Climate Change module

1. Open the Edge browser, and navigate to <https://www.labster.com/>.
2. Click Login, and log into your account.
3. Click Catalog.
4. Click Simulations.
5. Navigate to the Human Impact on Climate Change: Balance human emissions and a growing population module.
6. Simultaneously start the timer and click Play.
7. Stop the timer once the module fully loads, as indicated by the progress bar reaching 100%.
8. Repeat steps 1 through 7 two more times.

Loading the Cell Division module

1. Open the Edge browser, and navigate to <https://www.labster.com/>.
2. Click Login, and log into your account.
3. Click Catalog.

4. Click Simulations.
5. Navigate to the Cell Division (Principles): Mitosis and Meiosis module.
6. Simultaneously start the timer and click Play.
7. Stop the timer once the module fully loads, as indicated by the progress bar reaching 100%.
8. Repeat steps 1 through 7 two more times.

Timing CoSpaces Edu tasks

Load the Pirate Roller Coaster CoSpace

1. Open the Edge browser, and navigate to <https://edu.CoSpaces.io/Universe>.
2. Navigate to the Pirate Roller Coaster CoSpace.
3. Simultaneously start the timer and click the Pirate Roller Coaster CoSpace.
4. Stop the timer when the animation fully loads, as indicated by the Play button appearing.
5. Clear the cache in the Edge browser.
6. Repeat steps 1 through 5 two more times.

Load the End of Dinosaurs CoSpace

1. Open the Edge browser, and navigate to <https://edu.CoSpaces.io/Universe>.
2. Navigate to the End of Dinosaurs CoSpace.
3. Simultaneously start the timer and click the End of Dinosaurs CoSpace.
4. Stop the timer when the animation fully loads, as indicated by the Play button appearing.
5. Clear the cache in the Edge browser.
6. Repeat steps 1 through 5 two more times.

Loading the At the Airport CoSpace

1. Open the Edge browser, and navigate to <https://edu.CoSpaces.io/Universe>.
2. Navigate to the At the Airport CoSpace.
3. Simultaneously start the timer and click the At the Airport CoSpace.
4. Stop the timer when the interactive environment fully loads, as indicated by the Play button appearing.
5. Clear the cache in the Edge browser.
6. Repeat steps 1 through 5 two more times.

Loading the Dinosaur Safari CoSpace

1. Open the Edge browser, and navigate to <https://edu.CoSpaces.io/Universe>.
2. Navigate to the Dinosaur Safari CoSpace.
3. Simultaneously start the timer and click the Dinosaur Safari CoSpace.
4. Stop the timer when the interactive environment fully loads, as indicated by the Play button appearing.
5. Clear the cache in the Edge browser.
6. Repeat steps 1 through 5 two more times.

Read the report at <https://facts.pt/ytFHR8v>



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