The science behind the report:

Get a more responsive Windows laptop and help students tinker and create

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 Get a more responsive Windows laptop and help students tinker and create.

We concluded our hands-on testing on December 23, 2020. 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 December 21, 2020 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: Results of hand-timed tasks for each Microsoft Windows 10 laptop. Time is in seconds. Less time is better. Each result represents the median of three test runs.

Task	HP ProBook x360 11 G7 (pre-production unit) with an Intel® Pentium® N6000 processor	Dell™ Inspiron™ 3595 with an AMD A9-9425 processor	Intel processor-powered laptop percent less time
Opening a .PPTX document from OneDrive during a Microsoft Teams meeting	87.6	121.2	27%
Changing slides in a Microsoft PowerPoint Online presentation in Microsoft Edge browser during a Microsoft Teams meeting	5.7	7.4	23%
Copying and pasting a table in a PowerPoint Online presentation in Microsoft Edge browser during a Microsoft Teams meeting	7.1	8.7	18%
Batch-processing 140 photos in Adobe Photoshop Lightroom®	75.8	99.0	23%
Using the Copy and Tinker function for the Rally Car project in Autodesk® Tinkercad®	29.8	42.5	29%

Task	HP ProBook x360 11 G7 (pre-production unit) with an Intel® Pentium® N6000 processor	Dell™ Inspiron™ 3595 with an AMD A9-9425 processor	Intel processor-powered laptop percent less time
Rendering the 3D Rally Car asset in Autodesk Tinkercad	20.1	24.9	**19%**
Launching the Minecraft for Windows 10 game trial from Microsoft Store	18.4	25.0	**26%**
Launching the Minecraft Java Edition game demo from Minecraft Launcher	48.2	54.4	**11%**

Table 2: Results of the Speedometer 2.0 benchmarking test for each Windows 10 laptop. Higher score is better. Each result represents the median of three test runs.

Task	HP ProBook x360 11 G7 (pre-production unit) with an Intel Pentium N6000 processor	Dell Inspiron 3595 with an AMD A9-9425 processor	Intel processor-powered laptop percent higher score
Speedometer 2.0 score	68.1	43.4	56%

System configuration information

Table 3: The table below presents detailed information on the systems we tested.

System	HP ProBook x360 11 G7 (pre-production unit)	Dell Inspiron 3595
Processor	Intel Pentium N6000	AMD A9-9425
Processor frequency (GHz)	1.10	3.1
Processor cores	4	2
Memory (GB)	8	8
Storage (GB)	256	256
USB	1 x USB 3.1 Type-C 2x USB 3.1 Gen 1	3 x USB 3.1 Gen 1
Battery type	Lithium ion	Lithium ion
Battery capacity (Wh)	47	33
Display (in.)	11.6	15.6
Display resolution	1,366 x 768	1,366 x 768
OS (version)	Windows 10 Pro 1909	Windows 10 Pro 1909
System Weight (lbs.)	2.93	4.88

How we tested

Application testing

For each scenario, we downloaded, installed, and pinned the requisite apps to the taskbar. For applications that required accounts, we created test profiles and logged the users into their accounts on each device. We ran a total of three test runs for each task. Between each run, we reset the laptop.

Testing with Adobe Photoshop Lightroom

Batch-processing 140 photos with a filter preset

1. From the Adobe Lightroom home page, click the collection containing the test photos.
2. Click the first image.
3. Click the Adjustments icon.
4. To apply auto-adjustments, click Auto.
5. In the top-right, click the menu button, and select Copy Settings.
6. Leave the default Copy settings, and click OK.
7. To return to the collection view, click the back arrow.
8. Select all photos in the test collection.
9. Click the menu button, and select Paste Settings.
10. Simultaneously start the timer and click Apply.
11. When the processing dialog closes and the phrase "Changes applied to 140 photos" appears, stop the timer.

Testing with Autodesk Tinkercad

Using the Copy and Tinker function on the 3D Rally Car project

1. From the Microsoft Edge web browser, navigate to the test project at https://tinkercad.com/things/4x4r4zQvlbL.
2. Simultaneously start the timer and click Copy and Tinker.
3. When the 3D model has fully loaded, stop the timer.

Rendering the 3D Rally Car project

1. From the Microsoft Edge web browser, navigate to the test project at https://tinkercad.com/things/4x4r4zQvlbL.
2. Click Copy and Tinker.
3. When the test project has loaded, simultaneously start the timer and click the Bricks icon.
4. When the 3D Bricks view has fully loaded, stop the timer.

Testing with Minecraft for Windows 10

Launching the game

1. Launch the Microsoft Store.
2. Type `Minecraft for Windows 10` in the Search bar, and click the first result.
3. Simultaneously start the timer and click Play.
4. When the game's home screen fully loads, stop the timer.

Testing with Minecraft: Java Edition

Launching the game

1. Launch the Minecraft Launcher application.
2. Ensure that Minecraft: Java Edition is selected from the launcher app.
3. Simultaneously start the timer and click Play Demo.
4. When the game's home screen fully loads, stop the timer.

Testing with Browserbench.org

Running the Speedometer 2.0 benchmark test

1. From the Microsoft Edge web browser, navigate to http://browserbench.org/Speedometer2.0/.
2. Ensure the browser window fits the required view port size.
3. Click Start Test.
4. When the test completes, record the results.

Multitasking with Microsoft Teams

To conduct our multitasking testing, we opened Microsoft Teams in the Microsoft Edge web browser and joined a two-participant video meeting.

Joining the meeting

1. Open the Microsoft Edge web browser.
2. Navigate to https://teams.microsoft.com, and click Teams.
3. To join the meeting, click Meet.
4. Ensure that video is connected. For our testing, to ensure the video content was roughly the same across devices, we pointed each laptop's camera at a blank ceiling.
5. From the meeting host, share and begin playback of the following YouTube video: https://www.youtube.com/watch?v=4VQYiksNQFQ.
6. Complete the tasks in the following sections.

Opening a .PPTX file from OneDrive

1. From the Teams web interface, click Files.
2. Under Cloud storage, click OneDrive.
3. Navigate to the test file, right-click it, and hover over Open.
4. Simultaneously start the timer and click Open in browser.
5. When the presentation fully loads in Microsoft PowerPoint, stop the timer.

Changing a slide in PowerPoint Online

1. With the test presentation open, simultaneously start the timer and click the second slide.
2. When the second slide has fully loaded into the current slide preview, stop the timer.

Copying and pasting a table in PowerPoint Online

1. With the test presentation open, click a table column to select it.
2. Copy the table column.
3. Click the blank slide.
4. Simultaneously start the timer and paste the copied table.
5. When the copied content fully loads, stop the timer.

Read the report at http://facts.pt/6S4Qf8A ▶

This project was commissioned by Intel.

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