Acer Chromebook R853T
(pre-production unit) with an Intel Celeron N5100 processor

Complete virtual classroom tasks faster with a Chromebook powered by Intel

While performing a set of timed tasks, an Intel Celeron N5100 processor-powered Chromebook was more responsive than a Chromebook powered by a MediaTek Helio P60T processor

At Principled Technologies, we tested the following Chromebooks, comparing the time required to complete tasks in creative classroom apps on each:

- Acer Chromebook™ R853T powered by an Intel® Celeron® N5100 processor
- Lenovo® CT-X636F powered by a MediaTek Helio P60T processor

The Intel Celeron N5100 processor-powered Chromebook enabled us to save time on various tasks, including on multitasking tests where we completed tasks while connected to a Google Meet™ call.

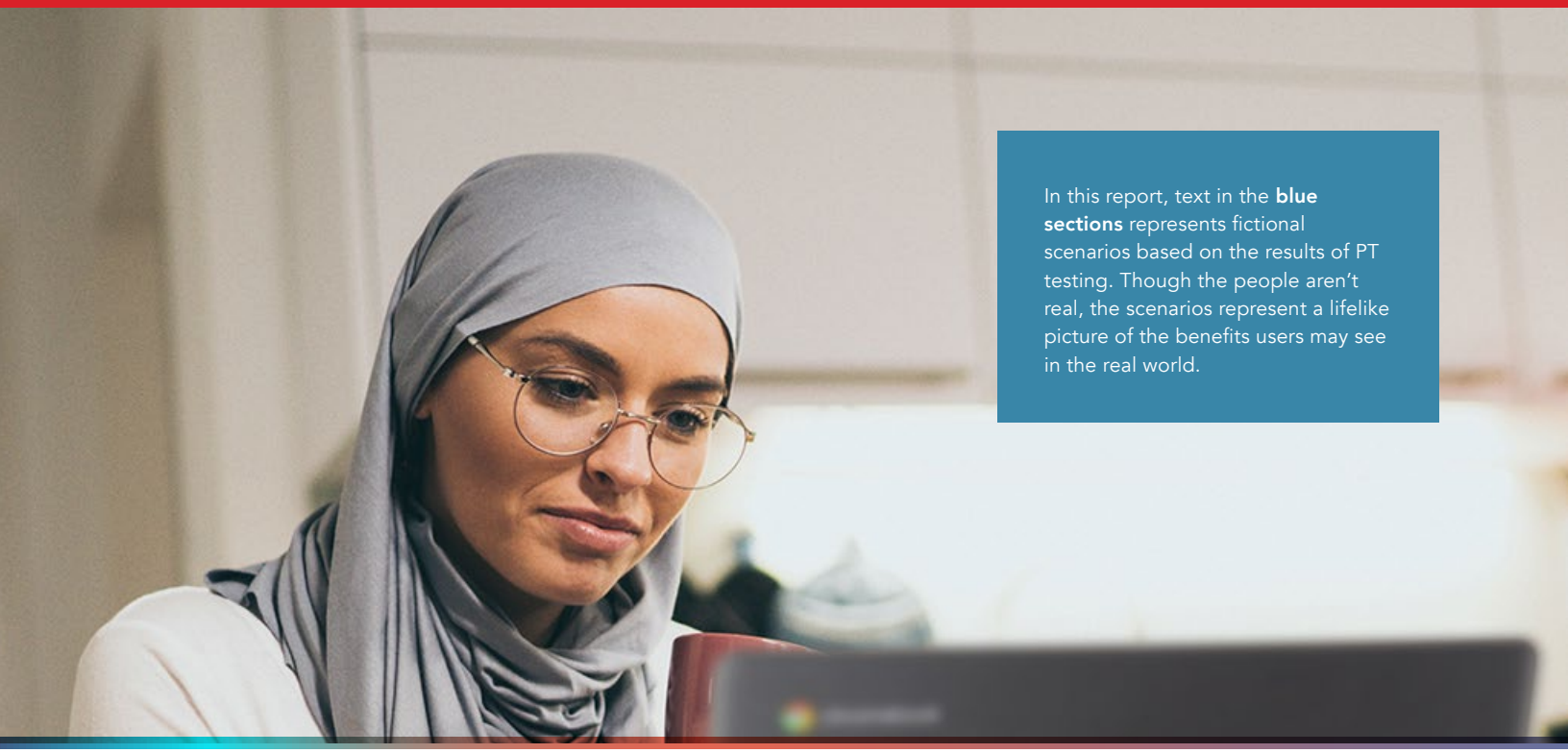
With students learning and working from home, it's important that their school-issued Chromebooks are able to handle being the primary medium of interaction between teachers and fellow students.

63%
less time
to export photos†Δ

52%
less time
to open a presentation while video conferencing†Δ

47%
less time
to render a 3D object†Δ

†Acer Chromebook R853T (pre-production unit) with an Intel Celeron N5100 processor compared to a Lenovo CT-X636F with a MediaTek Helio P60T processor
ΔSee the science behind this report for detailed system configurations and benchmark results.



In this report, text in the **blue sections** represents fictional scenarios based on the results of PT testing. Though the people aren't real, the scenarios represent a lifelike picture of the benefits users may see in the real world.

How we tested

For each Chromebook, we hand-timed a series of common tasks in a variety of classroom and creative apps and compared the results. For the Google Slides™ and Google Drive™ task, we tested while each Chromebook was connected to a two-way call in Google Meet. This represents a use case where a student or teacher is multitasking by working in other apps during class time. Multitasking is ubiquitous but often puts extra stress on a device, so getting a Chromebook that can handle this added load is important. To simulate a student or teacher working outside the classroom, we performed the Adobe Lightroom® and Autodesk® Tinkercad® tasks individually, without being connected to a video call. We also tested each Chromebook with a web browser-based benchmark test called Speedometer 2.0. This test measures the responsiveness of web applications by simulating user actions in a demo app and measuring the time required to complete those actions. To learn more, visit https://browserbench.org/Speedometer2.0.

[Δ]See **the science behind this report** for detailed system configurations and benchmark results.

The high school students in Mrs. Karimi's technology and design class definitely miss seeing each other in person, but are still having fun learning from their favorite teacher.

This year, the students have new Chromebooks powered by the Intel Celeron N5100 processor. How does the experience compare to their previous MediaTek Helio P60T processor-powered Chromebooks? Read on to find out.

Note: Each of the graphs in this report uses a different x axis in order to keep to a consistent size. Please be mindful of each graph's data range as you compare.

Take care of multiple tasks in less time

In our multitasking tests with Google Drive and Google Slides, the Intel Celeron N5100 processor-powered Chromebook saved time opening a Google Slides presentation while connected to a two-way Google Meet call. The Intel Celeron N5100 processor-powered Chromebook saved 52% of the time required of the MediaTek Helio P60T processor-powered Chromebook.

Save 33.1 seconds opening a presentation during a Google Meet call
with Google Slides, Google Drive, and Google Meet
Time (sec)

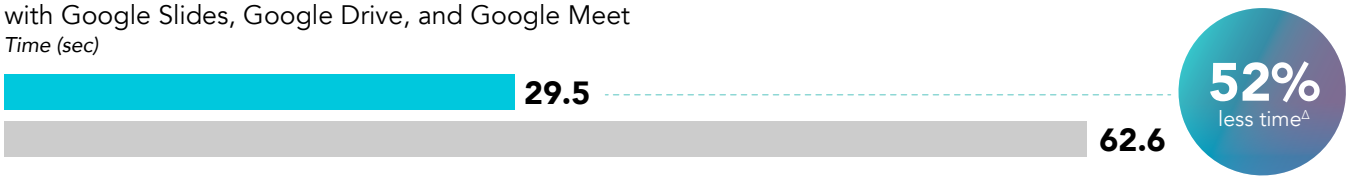


Figure 1: Time (in seconds) to open a Google Slides presentation while connected to a two-way call. Less time is better. Source: Principled Technologies.

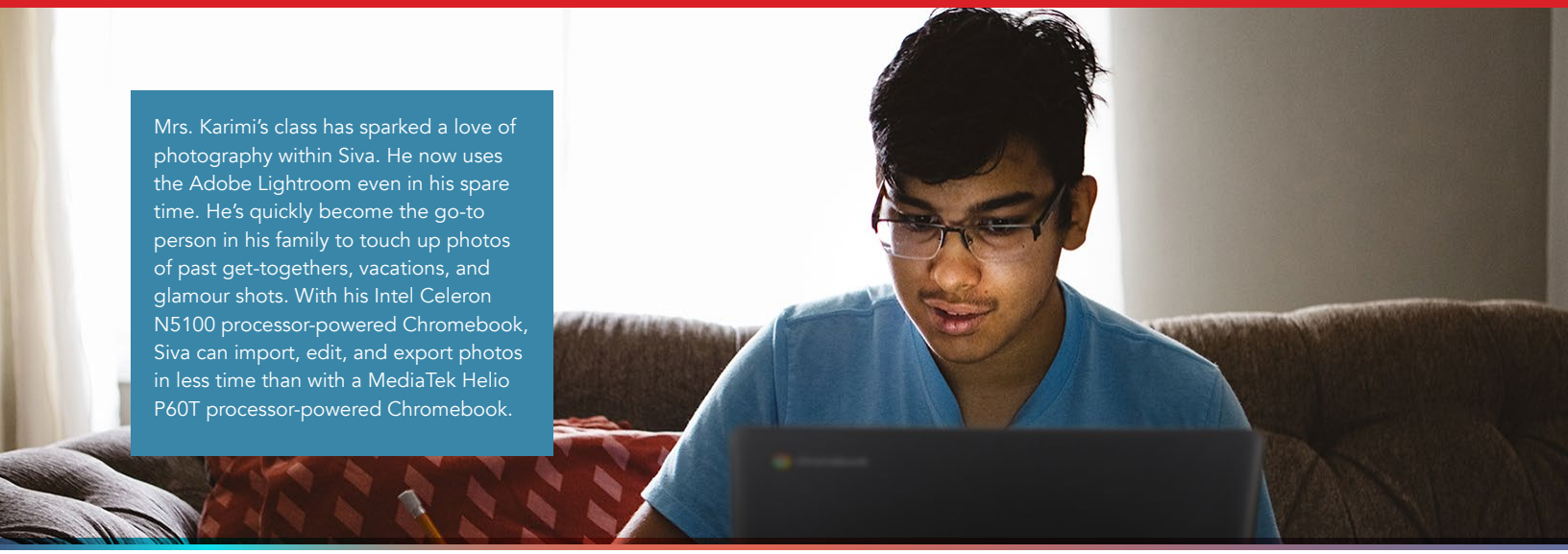
Google Meet

Google has made their premium video conferencing product free and available to the general public. According to Google, the app is used in schools, governments, and companies worldwide.[1]

Google Workspace

In October 2020, Google rebranded its G Suite app offerings as Google Workspace—but you'll still get the same productivity and collaboration tools you've used in the past, including Google Docs™, Google Slides, Google Meet, Google Drive, and more.[2]

△See the science behind this report for detailed system configurations and benchmark results.



Mrs. Karimi's class has sparked a love of photography within Siva. He now uses the Adobe Lightroom even in his spare time. He's quickly become the go-to person in his family to touch up photos of past get-togethers, vacations, and glamour shots. With his Intel Celeron N5100 processor-powered Chromebook, Siva can import, edit, and export photos in less time than with a MediaTek Helio P60T processor-powered Chromebook.

Save time in Adobe Lightroom

We timed three tasks in Adobe Lightroom without being connected to a Google Meet call. The Intel Celeron N5100 processor-powered Chromebook saved more than two minutes of the time required for the MediaTek Helio P60T processor-powered Chromebook to import a set of 140 photos; saved nearly a minute on batch-processing the photos; and saved two and a half minutes exporting them.

Save 126.4 seconds importing 140 photos with a filter preset
with Adobe Lightroom
Time (sec)

Save 58.2 seconds batch-processing 140 photos with a filter preset
with Adobe Lightroom
Time (sec)

Save 149.8 seconds exporting 140 photos
with Adobe Lightroom
Time (sec)

Acer Chromebook R853T (pre-production unit) with an Intel Celeron N5100 processor
Lenovo CT-X636F with a MediaTek Helio P60T processor

Figure 2: Time (in seconds) to complete tasks in Adobe Lightroom. Less time is better. Source: Principled Technologies.

Adobe Lightroom

Adobe Lightroom is a free photo editing and camera app that enables you to use customizable filters and other options to create your next photography project.[3]

△See the science behind this report for detailed system configurations and benchmark results.

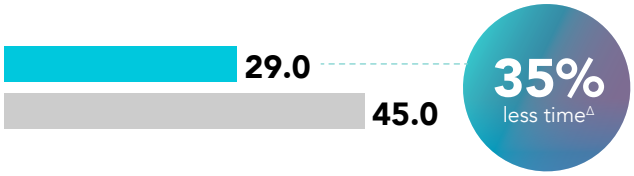
Gabby is loving her time with Autodesk Tinkercad. She's been drawing and painting since kindergarten, but she never even thought about making art in a 3D space. Sure, her 3D designs are pretty basic—for now. But using Tinkercad makes her feel as if she's unlocked an entirely different part of her brain. It's the feeling of stepping inside a canvas and discovering what lies on the other side.

With her Intel Celeron N5100 processor-powered Chromebook, Gabby can manipulate 3D graphics in less time than with a MediaTek Helio P60T processor-powered Chromebook.

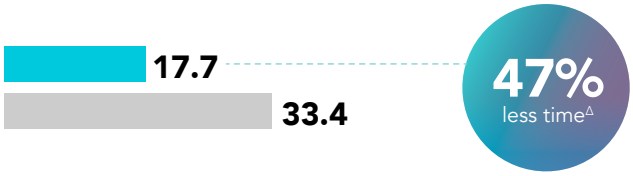
Save time in Tinkercad

We timed two tasks in Autodesk Tinkercad without being connected to a Google Meet call. The Intel Celeron N5100 processor-powered Chromebook saved 16 seconds on using the app's Copy and Tinker function, and saved 15 seconds rendering a 3D object.

Save 16.0 seconds using the Copy and Tinker function
with Autodesk Tinkercad
Time (sec)



Save 15.7 seconds rendering a 3D object
with Autodesk Tinkercad
Time (sec)



Acer Chromebook R853T (pre-production unit) with an Intel Celeron N5100 processor | Lenovo CT-X636F with a MediaTek Helio P60T processor

Figure 3: Time (in seconds) to complete tasks in Autodesk Tinkercad. Less time is better. Source: Principled Technologies.

As Figure 4 shows, the Intel Celeron N5100 processor-powered Chromebook also achieved a higher score on the Speedometer 2.0 web-app benchmark compared to the MediaTek Helio P60T processor-powered Chromebook.

Achieve better browser responsiveness
with with the Speedometer 2.0 benchmark
Higher is better

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Figure 4: Speedometer 2.0 scores. Higher score is better. Source: Principled Technologies.

Autodesk Tinkercad

Tinkercad is a browser based program for computer aided design.[4] Common Sense Education® gave Tinkercad a 4 out of 5 star rating, citing the app's pedagogical implications.[5]

△See **the science behind this report** for detailed system configurations and benchmark results.

Conclusion

In our tests, an Intel Celeron N5100 processor-powered Chromebook allowed us to complete common tasks in educational and creative apps in less time than a MediaTek Helio P60T processor-powered Chromebook. This includes multitask scenarios where we performed tasks while connected to a two-way Google Meet call, and single-task scenarios where we performed tasks in isolation. The Intel Celeron N5100 processor-powered Chromebook also achieved a higher score on the Speedometer 2.0 web-app responsiveness benchmark test.

For more information on Intel processor-powered Chromebooks, visit https://www.intel.com/content/www/us/en/education/right-device/chromebooks-for-education.html.

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1 Javier Soltero, "Google Meet premium video meetings—free for everyone," accessed January 24, 2021, https://www.blog.google/products/meet/bringing google meet to more people/.

2 "Introducing Google Workspaces and a new set of offerings to better meet your needs," accessed January 24, 2021, https://workspaceupdates.googleblog.com/2020/10/introducing google workspace.html.

3 "Adobe Lightroom," accessed January 24, 2021, https://play.google.com/store/apps/details?id=com.adobe.lrmobile&hl=en_US.

4 Chrome web store, "Tinkercad," accessed January 24, 2021, https://chrome.google.com/webstore/detail/tinkercad/bhggmehigifnpflipbkdfcjiacpcgidn.

5 Marianne Rogowski, "Tinkercad Review for Teachers," accessed January 24, 2021, https://www.commonsense.org/education/website/tinkercad.

Read the science behind this report at http://facts.pt/wI3SKtH ▶

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