



Save over
100 seconds
each time you export
an audio file with the
**ASUS Chromebook
C434T***



Dell Chromebook 3100 with an
Intel Celeron N4000 processor



ASUS Chromebook C434T with an
Intel Core m3-8100Y processor

Save over
160 seconds
each time you export
an audio file with the
**Acer Chromebook
Spin 13****



Acer Chromebook Spin 13 with
an Intel Core i3-8130U processor

Finish creative school projects faster with Intel Core processor-powered Chromebooks

In our tests, Chromebooks powered by two types of Intel Core processors saved time on creative educational tasks

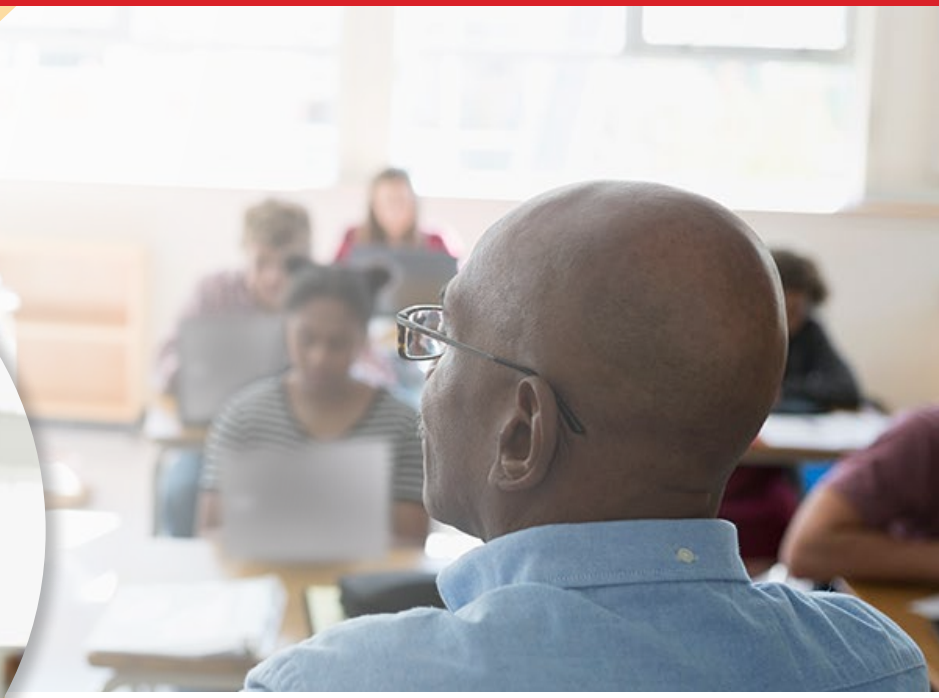
At Principled Technologies, we performed a set of tasks on three Intel processor-powered Chromebooks:

- Dell Chromebook 3100 powered by an Intel Celeron N4000 processor
- ASUS Chromebook C434T powered by an Intel Core m3-8100Y processor
- Acer Chromebook Spin 13 powered by an Intel Core i3-8130U processor

We then compared the time it took each device to complete each task. The Dell Chromebook 3100 set a good baseline, but the Intel Core m3-8100Y processor-powered Chromebook completed tasks faster, while the Chromebook powered by an Intel Core i3-8130U processor was the fastest for the tasks in this report.

With so many types of Chromebook available, how can you decide what's best for your school? There are lots of factors to consider, but the speed of the device is an important one. Fast, responsive devices can be more conducive to the focus required for classroom instruction, while slower devices can frustrate students and leave less time for learning.

*versus the Dell Chromebook 3100 with an Intel Celeron N4000 processor | **versus the ASUS Chromebook C434T with an Intel Core m3-8100Y processor



Chromebooks in the computer science classroom

Fictional scenario

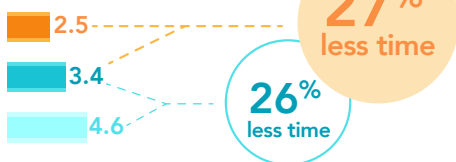
Hoff High School had three great Chromebooks to choose from for their one-to-one program. Did they make the right decision, picking the Intel Core i3 processor-powered Acer Chromebook Spin 13? Read the rest of this PT testing-based fictional scenario to find out.

With just a few weeks until the end of the school year, Mr. Diamond is looking for a fun and engaging way to test what his students have learned in his Fundamentals of Computer Science class. To enable the students to explore their own interests, he decides he'll let them loose on a free-form creative project where they'll self-organize and set their own goals with Mr. Diamond standing by to support them.

Mr. Diamond knows some laptops struggle with tasks in creative apps—but he has confidence that the school's recently purchased fleet of Intel Core i3 processor-powered Chromebooks can get the job done, especially considering how fast they were at straightforward coding tasks during the school year!

Create a new program with Code HS

Time (sec) | lower is better



- Acer Chromebook Spin 13 with an Intel Core i3-8130U processor
- ASUS Chromebook C434T with an Intel Core m3-8100Y processor
- Dell Chromebook 3100 with an Intel Celeron N4000 processor

CodeHS

CodeHS provides tools and lessons to facilitate computer science education in schools. Erin Berenton of Common Sense Media gave the CodeHS website 4 out of 5 stars, saying the program makes things "accessible for beginners."¹



Complete audio tasks faster

One of the student groups decides to write a song based on one of the more difficult topics they encountered this year: the concept of “for loops.” One of the students records herself singing the lyrics the group collaborated on, and she shares the file. It takes just 37 seconds to open the 50MB file in Lexis Audio Editor. The group makes a few changes based on feedback from Mr. Diamond, and renders the full recording in just 6 minutes, 17 seconds—up to 4 minutes, 26 seconds faster than the other Chromebooks the school had considered.

A few days later, the music group has assembled guitar, drums, synths, and an updated vocal track. As they prepare to fit everything together, it takes less than 6 seconds to enter the Soundtrap studio and get to work on their creation.

Open an audio file with Lexis Audio Editor

Time (sec) | lower is better



Export an edited audio file with Lexis Audio Editor

Time (sec) | lower is better



Create a new project with Soundtrap

Time (sec) | lower is better



Lexis Audio Editor

Lexis Audio Editor is an app that enables fast editing of audio recordings. Features include normalization, noise reduction, a 10-band equalizer, a compressor, and more.²

Soundtrap®

Soundtrap is a web application for creating digital audio creations such as music, podcasts, language studies, and more.³ According to Soundtrap, more than 10,000 teachers worldwide trust their educational program.⁴

- Acer Chromebook Spin 13 with an Intel Core i3-8130U processor
- ASUS Chromebook C434T with an Intel Core m3-8100Y processor
- Dell Chromebook 3100 with an Intel Celeron N4000 processor



Complete video tasks faster

Another student group has decided they want to make a music video that demonstrates how code and computer science help run our society. From science and medicine to transportation and urban planning, code is now the backbone of the world. It's clear to the students that their interest in computer science today could lead to any number of professions in the future.

The students want to open their video on a shot of an expansive city skyline. To get that impressive shot with the technology they have on hand, they turn to computer-generated graphics. It takes just 20 seconds to open a 3D model of a city in Tinkercad. The students tweak the model to suit their needs, and set to work on the rest of their video.

As they iterate and develop drafts within the Lomotif app, they can preview how their video will look in less than 3 seconds, enabling them to quickly judge and make adjustments that will make their finished project shine.

The weekend before presentation day, the group gets together for a final discussion and watch party. They didn't expect it, but they get a little teary-eyed as the credits roll. They've all learned so much this year, and they've grown as students and grown closer as friends.

The group puts their hands in a pile above the Chromebook, and chant their group name before pressing the Export button all at once. Eleven seconds later, their video is complete.

Process a video with Lomotif

Time (sec) | lower is better



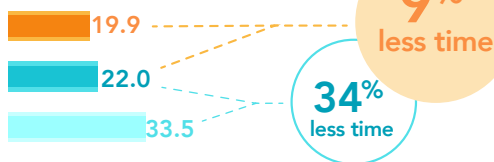
Export a video with Lomotif

Time (sec) | lower is better



Open a model with Tinkercad

Time (sec) | lower is better



- Acer Chromebook Spin 13 with an Intel Core i3-8130U processor
- ASUS Chromebook C434T with an Intel Core m3-8100Y processor
- Dell Chromebook 3100 with an Intel Celeron N4000 processor

Tinkercad

Tinkercad is a browser-based program for computer-aided design.⁵ Common Sense Education® gave Tinkercad a 4/5-star rating, enthusiastic about the app's pedagogical implications.⁶

Lomotif

Lomotif is a video editor that enables students to join video clips in a music video collage and share it with the world.⁷



Acer Chromebook Spin 13 with an Intel Core i3-8130U processor

Conclusion

Presentation day rolls around and each group of students fights over who gets to present first. It's clear they are proud of the work they've done, and Mr. Diamond is stunned by how much they've accomplished in the last few weeks of class. With the right Chromebook in the classroom, you could be stunned as well. In our tests, an Intel Core i3-8130U processor-powered Chromebook saved time over a Chromebook powered by the Intel Core m3-8100Y processor and a Chromebook powered by the Intel Celeron N4000 processor. Though all of the devices completed tasks in good time, classrooms may get more mileage out of the Intel Core i3 processor-powered device. When students can complete tasks quickly, it can leave more room for iteration, collaboration, and above all, learning.

- 1 Erin Berenton, "CodeHS Website Review," accessed June 24, 2019, <https://www.commonsemmedia.org/website-reviews/codehs>
- 2 "Lexis Audio Editor – Apps on Google Play Store," accessed June 24, 2019, <https://play.google.com/store/apps/details?id=com.pamsys.lexisaudioeditor>
- 3 "Soundtrap – Make Music Online – Google Play Store," accessed June 24, 2019, <https://play.google.com/store/apps/details?id=com.soundtrap.studioapp>
- 4 "Soundtrap – Make Music Online," accessed June 24, 2019, <https://www.soundtrap.com/edu/>
- 5 "Tinkercad – Chrome Web Store," accessed June 24, 2019, <https://chrome.google.com/webstore/detail/tinkercad/bhggmehigifnplpbkdfcjiafcgjidn>
- 6 "Tinkercad Review for Teachers | Common Sense Education," accessed June 24, 2019, <https://www.commonsense.org/education/website/tinkercad>
- 7 "Lomotif – Music Video Editor," accessed June 24, 2019, <https://play.google.com/store/apps/details?id=com.lomotif.android>

Read the science behind this report at <http://facts.pt/7fetavc> ►



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