

# Multitasking in the Virtual Classroom

Multitasking and Zoom-based Virtual Learning on Chromebooks and Windows Notebooks in K-12 Education



## Less Waiting, Fewer Disruptions, and More Time Learning with Intel-based Devices

When tested against AMD\* and MediaTek\*-based devices during learning scenarios that realistically simulate virtual teaching and learning, notebooks with Intel® Core™ and Intel® Celeron® processors repeatedly outperformed their competitors with faster processing speeds, more ability to multitask across applications without disruptions, and better video quality both when engaging in video conferencing and screen sharing live streaming content.



### Read the Full Report

Download the full report online at the [K-12 Blueprint](#) website.



### High School Principles of Engineering

Engineering Solutions to Real-world Problems with 3D Modeling and Simulation

While multitasking on video calls to live stream and use 3D modeling and simulation applications, Intel® Core™ and Intel® Celeron®-based Chromebooks perform an average of 2.5 seconds faster than those powered by AMD\* and MediaTek\* processors.



#### Learning Skills

- Simulation and Modeling
- Digital Communication & Collaboration
- Digital Content Creation
- Design Thinking



#### Featured Applications

- Zoom
- Zoom Whiteboard
- Tinkercad
- YouTube
- 3D Object Maker\*
- Google Poly\*
- Google Drawings\*

#### Total Scenario Times

Device Type	Processor	Time (secs)	Device Type	Processor	Time (secs)
Windows-based Devices	10th Generation Intel® Core™ i5-10210U	8.5 secs	Chromebook Devices	10th Generation Intel® Core™ i5-10210U	6.2 secs
	10th Generation Intel® Core™ i3-10110U	22.4 secs		10th Generation Intel® Core™ i3-10110U	12.2 secs
	Intel® Celeron® N4020	29.8 secs		Intel® Celeron® N4020	13.7 secs
	AMD* A4-9120	115.7 secs		AMD* A4-9120C	24.9 secs
	AMD* A6-9220E	102.7 secs		AMD* A6-9220C	18.8 secs
			MediaTek* Helio P60T	18.2 secs	



### Middle School Computer Science Discovery

Programming Machines Using the Physics of Minecraft: Education Edition

While multitasking on video calls to do live streaming in-game play in Minecraft: Education Edition, Intel® Core™-based Windows devices perform an average of 6x faster than devices powered by AMD\* processors.



#### Learning Skills

- Game-based learning
- Computational Thinking
- Digital Content Creation
- Digital Communication & Collaboration



#### Featured Applications

- Zoom
- Minecraft: Education Edition
- Twitch
- Google Chat\*
- Google Classroom
- Google Drive\*
- Google Slides\*

#### Total Scenario Times

Device Type	Processor	Time (secs)	Device Type	Processor	Time (secs)
Windows-based Devices	10th Generation Intel® Core™ i5-10210U	8.3 secs	Chromebook Devices	10th Generation Intel® Core™ i5-10210U	8.0 secs
	10th Generation Intel® Core™ i3-10110U	18.9 secs		10th Generation Intel® Core™ i3-10110U	12.5 secs
	Intel® Celeron® N4020	75.4 secs		Intel® Celeron® N4020	16.0 secs
	AMD* A4-9120	101.2 secs		AMD* A4-9120C	26.1 secs
	AMD* A6-9220E	144.7 secs		AMD* A6-9220C	18.8 secs
			MediaTek* Helio P60T	17.5 secs	

## Key Takeaways

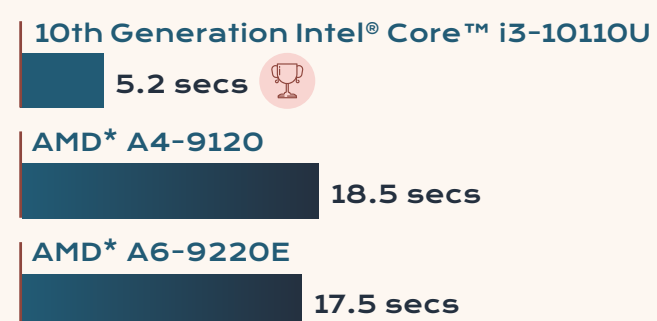
1

When joining a Zoom video call, Intel®-based Windows\* notebooks and Chromebooks\* outperform competitors, with devices powered by Intel® Core™ i3 technology performing **up to 71.8% faster**.



### Joining a Zoom Video Call

Windows-based Devices



2

While multitasking on video calls to do live streaming in-game play in Minecraft: Education Edition, Intel® Core™-based Windows\* devices perform **an average of 6x faster** than devices powered by AMD\* processors.



### Multitasking While Joining Breakout Rooms (averages)

Windows-based Devices



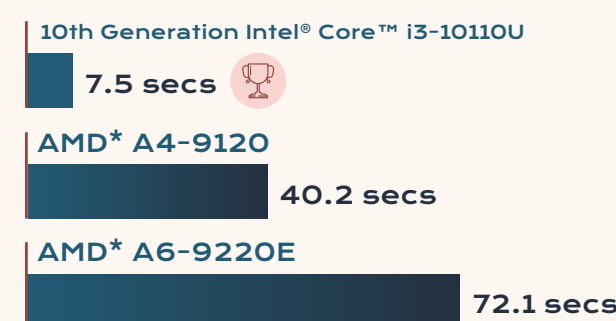
3

When leaving a breakout room to rejoin the main room in a Zoom video call, Intel® Core™ i3-based Windows devices outperformed AMD\*-based devices with speeds **up to 89.5% faster**. Likewise, Intel® Core™ i3-based Chromebooks performed **up to 60.8% faster** than those powered by AMD\* technology.

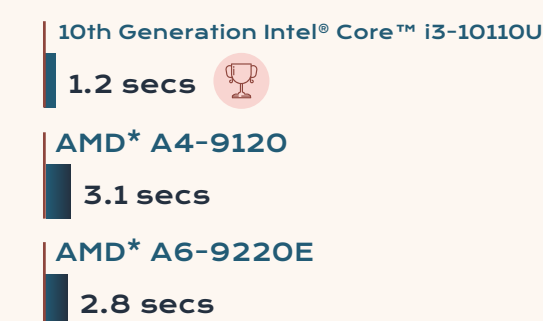


### Rejoining Main Room

Windows-based Devices



Chromebooks



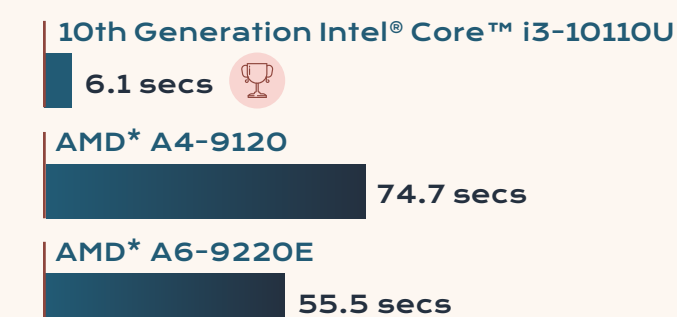
4

Intel®-based Windows notebooks and Chromebooks are able to enter a Zoom breakout room faster and with fewer delays compared to competitors.



### Joining a Zoom Breakout Room

Windows-based Devices



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