

## COMPUTER SPECIFICATIONS 2018-19

### OVERVIEW

PLTW curricula utilize powerful, industry-based software. Ensure computer hardware meets or exceeds the specifications below. Please be sure to make this purchase in consultation with your IT department. Note the following are **not supported** for use in PLTW coursework:

- Chromebooks (most required pieces of software are not supported for use on Chromebooks)
- Open Office
- Google Docs
- Virtual Desktop Environments

### PLTW Engineering Specifications:

- **Each teacher must have a laptop (1:1 ratio)**
- **Each student must have a laptop or desktop computer (1:1 ratio)**
- **Each classroom needs a digital projector with screen and appropriate cables/adapters to connect the teacher laptop to the projector**

Specification	Minimum	Recommended (but not required)
Processor	Intel or AMD two+ core processor 2.0 Ghz +	Intel or AMD four+ core processor, 3.0 Ghz +
RAM	8 GB +	20 GB +
Hard Drive	500 GB +	1 TB +
Video Card	512 MB + dedicated RAM, Microsoft® Direct3D 10® capable graphics card or higher supporting 1280 x 1024 screen resolution*	1 GB + dedicated RAM, Microsoft® Direct3D 11® capable graphics card or higher supporting 1280 x 1024 screen resolution*
Optical Drive	Not required for PLTW Software	Not required for PLTW Software
Operating System	Windows 7, Windows 8, or Windows 10, 64 bit operating system or Apple device with OSX 10.9 +. Bootcamp required with one of the above Windows operating systems.	Windows 7, Windows 8, or Windows 10, 64 bit operating system or Apple device with OSX 10.10 +. Bootcamp required with one of the above Windows operating systems.
Network	Must have network connectivity (wireless and/or wired)	Must have network connectivity (wireless and/or wired)
<a href="#">Other Basic Software</a>	Internet Explorer 9 or later Current version of Firefox or Chrome is recommended for optimal utilization of myPLTW Adobe Flash Player 15 or later Microsoft Office, v. 2010 through 2016 for iComponents, thread customization, and spreadsheet-driven designs in Inventor	Internet Explorer 9 or later Current version of Firefox or Chrome is recommended for optimal utilization of myPLTW Adobe Flash Player 15 or later Microsoft Office, v. 2010 through 2016 for iComponents, thread customization, and spreadsheet-driven designs in Inventor

\***IMPORTANT:** Basic Intel graphic chipset or other chipsets with shared memory should not be used for video display. See the Autodesk certified graphics hardware page [here](#) as reference tool in selecting graphics hardware.

### PLTW Engineering - Printer Specifications:

Print speed: Up to 35 ppm  
 Resolution: 600X600 dpi, color not required  
 Memory: 128 MB min  
 Paper size: Letter, legal, 11X17 (required)  
 Network ready

**PLTW Biomedical Science Specifications:**

- A laptop is recommended for each student and teacher for PLTW Biomedical Science courses (1:1 ratio).
- Desktop computers are not suggested for use as they have limited mobility in a lab environment.
- Each classroom needs a digital projector with screen and appropriate cables/adapters to connect the teacher laptop to the projector

Specification	Minimum	Recommended
Processor	Intel® or AMD processor 2.0 Ghz +	Intel® or AMD processor 2.3 Ghz +
RAM	4 GB +	8 GB +
Hard Drive	250 GB +	250 GB +
Video	Graphics 128 MB +	Graphics 256 MB +
Operating System	Windows 7, Windows 8.1, or Windows 10 64 bit operating system or Apple device with OSX 10.7+	Windows 7, Windows 8.1, or Windows 10, 64 bit operating system or Apple device with OSX 10.11+
Network	Must have wireless network connectivity	Must have wireless network connectivity
<a href="#">Other Basic Software</a>	Current version of Firefox or Chrome is recommended for optimal utilization of myPLTW Adobe Flash Player 15 or later Microsoft Office, v. 2010 through 2016 or Office 365	Current version of Firefox or Chrome is recommended for optimal utilization of myPLTW Adobe Flash Player 15 or later Microsoft Office, v. 2010 through 2016 or Office 365

**PLTW Biomedical Science Printer Specifications:**

Print speed: Up to 35ppm  
 Resolution: 600X600 dpi minimum, Color not required  
 Memory: 128 MB min  
 Paper size: Letter, Legal  
 Network ready

**PLTW Gateway Specifications:**

- A laptop or desktop is recommended for each student and teacher for PLTW Gateway courses (1:1 ratio)
- Each classroom needs a digital projector with screen and appropriate cables/adapters to connect the teacher laptop to the projector
- If you will be offering the App Creators unit, please see the tablet and computer specifications on the PLTW Computer Science page of this document as this hardware will be required.
- Green Architecture (GA) requires the use of Autodesk Revit software. Please refer to the PLTW Engineering computer specifications if you are offering GA.

**PLTW Gateway Printer Specifications:**

Specification	Minimum	Recommended
Processor	Intel® or AMD processor 2.0 Ghz +	Intel® or AMD processor 2.3 Ghz +
RAM	4 GB +	8 GB +
Hard Drive	250 GB +	250 GB +
Video *	Graphics 512 MB +	Graphics 1 GB +
Operating System	Windows 7, Windows 8.1, or Windows 10 64 bit operating system. Apple device with OSX 10.7+ and Bootcamp for AR and FS.	Windows 7, Windows 8.1, or Windows 10, 64 bit operating system or Apple device with OSX 10.11+ and Bootcamp for AR and FS.
Network	Must have network connectivity (wireless and/or wired)	Must have network connectivity (wireless and/or wired)
<a href="#">Other Basic Software</a>	Internet Explorer 9 or later Current version of Firefox or Chrome is recommended for optimal utilization of myPLTW Adobe Flash Player 15 or later Microsoft Office, v. 2010 through 2016 or Office 365	Internet Explorer 9 or later Current version of Firefox or Chrome is recommended for optimal utilization of myPLTW Adobe Flash Player 15 or later Microsoft Office, v. 2010 through 2016 or Office 365

Print speed: Up to 35ppm

Resolution: 600X600 dpi minimum, Color not required

Memory: 128 MB min

Paper size: Letter, Legal

Network ready

\* SketchUp does not recommend using Intel-based graphics cards at this time. SketchUp is software used in the PLTW Gateway Design and Modeling (DM) unit. SketchUp states that the graphics card must be compatible with OpenGL 3.0+.

**PLTW Computer Science Specifications:**

- **Android tablets AND computers (laptop or desktop) are required.**
- **iPads are not supported for use in PLTW Computer Science coursework**
- **Android tablets are required for each teacher (1:1 ratio) and no more than a 2:1 ratio for students.**
- **A computer (laptop or desktop) is required for each teacher and each student (1:1 ratio)**
- **Each classroom needs a digital projector with screen and appropriate cables/adapters to connect the teacher laptop to the projector**

<b>Android Tablet Specifications</b>	
<b>Processor</b>	1 Ghz +
<b>RAM</b>	1 GB +
<b>On Board Storage</b>	16 GB +
<b>Screen Size</b>	7 inches +
<b>Operating System</b>	Android v4.4.2 +
<b>Network</b>	WIFI enabled (no cellular required) ; Must have wireless network connectivity*
<b>Other Required Embedded Hardware</b>	Front or Rear facing camera (having both is recommended) Accelerometer Microphone Bluetooth® USB Drivers must be available for the device

\* Under many circumstances an 802.11 wireless router may be needed in the classroom in order to use MIT App Inventor with Android tablets and computers. Please test your unique classroom environment to ensure adequate wireless access is in place. If you do need to make a wireless router purchase, please verify the selected router will allow adequate simultaneous connections by contacting the manufacturer and discussing the number of devices that will be concurrently used.

<b>Computer Specifications</b>		
<b>Specification</b>	<b>Minimum</b>	<b>Recommended</b>
Processor	Intel® or AMD processor 2.0 Ghz +	Intel® or AMD processor 3.0 Ghz +
RAM	4 GB +	8 GB +
Hard Drive	250 GB +	250 GB +
Video	Graphics, 128 MB +	Graphics, 256 MB +
Operating System	Windows 7, Windows 8, or Windows 10, 64 bit operating system or Apple device with OSX 10.11+	Windows 7, Windows 8, or Windows 10, 64 bit operating system or Apple device with OSX 10.11+
Display	21" or greater external monitor per computer is recommended for coding and viewing small text	21" or greater external monitor per computer is recommended for coding and viewing small text
Network*	Must have wireless network connectivity*	Must have wireless network connectivity*
<a href="#"><u>Other Basic Software</u></a>	Current version of Firefox or Chrome is recommended for optimal utilization of myPLTW Adobe Flash Player 15 or later Microsoft Office, v. 2010 through 2016 or Office 365	Current version of Firefox or Chrome is recommended for optimal utilization of myPLTW Adobe Flash Player 15 or later Microsoft Office, v. 2007 through 2013 or Office 365

**PLTW Launch Specifications:**

- iPad or Android tablets are required for students at no more than a 4:1 student to tablet ratio
- iPads are supported for use in ALL PLTW Launch Modules. Android devices are supported for use in 20 out of the 24 total Launch modules (3.1, 3.4, 5.2, and 5.4 are not supported)
- Each teacher requires a laptop computer **AND** a tablet
- Chromebooks and Windows tablets are **NOT** supported for use in any PLTW Launch modules since many required apps are not available on these platforms.
- See our required [App listing](#) for PLTW Launch or the [PLTW iTunes page](#) (link will only work on Mac or iOS devices)
- Whether using an iPad or Android tablet, each teacher will need the ability to display their device in the classroom via a projector; work with your IT department to ensure that the appropriate adapter cable is available

Android Tablet Specifications	
Screen Size	7 inch +
On Board Storage	16 GB +
Operating System	Android v4.4.2 +
Network	WIFI enabled (cellular not required) ; Must have wireless network connectivity*

<a href="#">iPad Specifications</a>	
Supported Models	Third generation iPad (mini or full size) or newer
Screen Size	7.9 inch +
On Board Storage	16 GB +
Operating System	iOS 9 +
Network	WIFI enabled (cellular not required) ; Must have wireless network connectivity*

- **NOTE: Please consult with your IT department on how your school currently manages (or plans manage) iPad and/or Android App installations.**

Teacher Laptop Specifications		
Specification	Minimum	Recommended
Processor	Intel® or AMD processor 2.0 Ghz +	Intel® or AMD processor 2.3 Ghz +
RAM	4 GB +	4 GB +
Hard Drive	250 GB +	250 GB +
Video	Graphics 128 MB +	Graphics 256 MB +
Operating System	Windows 7, Windows 8, or Windows 10, 64 bit operating system or Apple device with OSX 10.11+	Windows 7, Windows 8, or Windows 10, 64 bit operating system or Apple device with OSX 10.11+
Network	Must have wireless network connectivity*	Must have wireless network connectivity*
<a href="#">Other Basic Software</a>	Current version of Firefox or Chrome is recommended for optimal utilization of myPLTW Adobe Flash Player 15 or later Microsoft Office, v. 2007 through 2013 or Office 365	Current version of Firefox or Chrome is recommended for optimal utilization of myPLTW Adobe Flash Player 15 or later Microsoft Office, v. 2007 through 2013 or Office 365

\* Under many circumstances an 802.11 wireless router may be needed in the classroom. Please test your unique classroom environment to ensure adequate wireless access is in place. If you do need to make a wireless router purchase, please verify the selected router will allow adequate simultaneous connections by contacting the manufacturer and discussing the number of devices that will be concurrently used.