



The science behind the report:

Redefining productivity with Copilot+ PCs

This document describes what we tested and some information on how we tested and what we found. For more information on our results or methodologies, please contact info@principledtechnologies.com. To learn how these facts translate into real-world benefits, read the report [Redefining productivity with Copilot+ PCs](#).

We concluded our hands-on testing on August 31, 2025. 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 August 8, 2025 or earlier. Unavoidably, these configurations may not represent the latest versions available when this report appears.

Our results

We reviewed screen capture and video footage of the participants to capture both task completion rates and task completion times. We considered a task complete when the participant finished within 8 minutes with the correct answer(s). In our timing data, we only included times from completed tasks. Later in this document, we explore how we defined success for each specific task.

Table 1: Average time it took participants to complete tasks. Time in seconds. Less time is better.

	Copilot+ PC	MacBook Air M4	Windows 11 PC	% win vs MacBook Air M4	Time win vs MacBook Air M4 (sec)	% win vs Windows 11 PC	Time win vs Windows 11 PC
Editing an image	118	242	228	51.24%	124	48.2%	110
Creating a bulleted list	64	69	72	7.25%	5	11.1%	8
Finding a presentation you've lost track of	74	162	146	54.32%	88	49.3%	72
Revisiting a website	53	95	74	44.21%	42	28.4%	21
Finding and organizing images	80	75	176	-6.67%	-5	54.5%	96
Image editing workflow	68	204	122	66.67%	136	44.3%	54
PowerPoint creation workflow	199	280	253	28.93%	81	21.3%	54

Table 2: The number of participants who completed each task. Higher is better.

	Copilot+ PC	MacBook Air M4	Windows 11 PC
Editing an image	43	40	42
Creating a bulleted list	44	46	45
Finding a presentation you've lost track of	44	30	35
Revisiting a website	49	42	38
Finding and organizing images	49	50	41
Image editing workflow	47	42	44
PowerPoint creation workflow	32	20	30

Table 3: The percentage of participants who completed each task (see Table 2 for raw numbers). Higher is better.

	Copilot+ PC	MacBook Air M4	Windows 11 PC
Editing an image	86%	80%	84%
Creating a bulleted list	88%	92%	90%
Finding a presentation you've lost track of	88%	60%	70%
Revisiting a website	98%	84%	76%
Finding and organizing images	98%	100%	82%
Image editing workflow	94%	84%	88%
PowerPoint creation workflow	64%	40%	60%

Extrapolating our results

To examine how these time savings could scale as people repeated the same tasks over multiple days, we estimated how much time participants could save per week if they completed this workflow three times a day and if they completed it five times a day. While not everyone will rely on these precise workflows, these examples highlight the way new Copilot+ AI features can help save increasing amounts of time.

Table 4: Estimated total time per five-day work week, and then per month and year of five-day work weeks, to complete our image editing workflow for someone completing it three times per day and five times per day, extrapolated from the average time it took participants to complete the workflow once on each system. Time in hours, minutes, and seconds. Less time is better.

	Copilot+ PC	MacBook Air M4	Windows 11 PC	Time win vs MacBook Air M4	Time win vs Windows 11 PC
Total time per week—performing task 3x/day	0:17:00	0:51:00	0:30:30	34 min	13 min 30 sec
Total time per week—performing task 5x/day	0:28:20	1:25:00	0:50:50	56 min 40 sec	22 min 30 sec
Total time per month—performing task 5x/day, 5 days per week, for 48 weeks divided by 12 months	1:53:20	5:40:00	3:23:20	3 hrs 46 min 40 sec	1 hr 30 min 0 sec
Total time per year—performing task 5x/day, 5 days per week, for 48 weeks	22:40:00	68:00:00	40:40:00	45 hrs 20min 0 sec	18 hrs 0 min 0 sesc

Table 5: Estimated total time per five-day work week, and then per month and year of five-day work weeks, to complete our PowerPoint creation workflow for someone completing it three times per day and five times per day, extrapolated from the average time it took participants to complete the workflow once on each system. Time in hours, minutes, and seconds. Less time is better.

	Copilot+ PC	MacBook Air M4	Windows 11 PC	Time win vs MacBook Air M4	Time win vs Windows 11 PC
Total time per week—performing task 3x/day	0:49:45	1:10:00	1:03:15	20 min 15 sec	13 min 30 sec
Total time per week—performing task 5x/day	1:22:55	1:56:40	1:45:25	33 min 45 sec	22 min 30 sec
Total time per month—performing task 5x/day, 5 days per week, for 48 weeks divided by 12 months	5:31:40	7:46:40	7:01:40	2 hrs 15 min 0 sec	1 hr 30 min 0 sec
Total time per year—performing task 5x/day, 5 days per week, for 48 weeks	66:20:00	93:20:00	84:20:00	27 hrs 0 min 0 sec	18 hrs 0 min 0 sec

Key findings from our post-test survey

We asked all our participants to take a survey after completing all the tasks. Where we have included quotes from participants in the body of the report, we have drawn them from this survey. Tables 6 through 9 present a summary of key data points. To learn more or see the complete survey we provided to participants, please reach out to info@principledtechnologies.com.

Table 6: We asked participants, "How would you describe your overall sentiment toward Copilot+ PCs after using the AI features on the Copilot+ PC in today's study?" and "How would you describe your overall sentiment toward MacBook Air laptops after using the AI features on the MacBook Air in today's study?" and offered them five options: Very negative, Somewhat negative, Neutral, Somewhat positive, and Very positive. This table shows the number of people who answered each option to this question.

	Copilot+ PC	MacBook Air M4
Very negative	1	0
Somewhat negative	2	5
Neutral	3	12
Somewhat positive	17	24
Very positive	27	9

Table 7: We asked participants to rank the devices in how efficient and productive they felt when completing tasks and how easy they were to use overall. This table shows the number of people who ranked each device the highest, the lowest, and neither the highest nor the lowest in efficiency/productivity and ease of use.

	Score	Copilot+ PC	MacBook Air M4	Windows 11 PC
Efficiency and productivity	Maximum	32	12	8
	Minimum	10	20	26
	Neither minimum nor maximum	8	18	16
Ease of use	Maximum	28	14	11
	Minimum	10	20	25
	Neither minimum nor maximum	12	16	14

Table 8: We asked participants to answer the following question with a scale of 1 to 5: "For each of the following AI-powered features, how much impact did the feature have on your ability to complete tasks more efficiently?" A score of 1 indicated "No impact" and a score of 5 indicated "Major impact." A score of 0 indicated "I do not remember using this feature."

Score	Copilot+ PC			MacBook Air M4		
	Recall	Click To Do	Improved Windows search	Photos	Spotlight	Writing Tools
0 (I do not remember using this feature)	1	6	1	1	4	13
1 (No impact)	0	1	2	2	1	4
2	2	4	1	5	9	2
3	5	7	7	6	14	9
4	10	11	16	8	14	10
5 (Major impact)	32	21	23	28	8	12

Table 9: We asked participants to answer the following question with a scale of 1 to 5: “For each of the following AI-powered features, how easy was the feature to use?” A score of 1 indicated “Not easy to use” and a score of 5 indicated “Extremely easy to use.” A score of 0 indicated “I do not remember using this feature.”

Score	Copilot+ PC			MacBook Air M4		
	Recall	Click To Do	Improved Windows search	Photos	Spotlight	Writing Tools
0 (I do not remember using this feature)	1	3	1	1	3	15
1 (Not easy to use)	0	4	1	2	2	0
2	1	1	1	9	10	3
3	6	3	6	4	10	7
4	14	17	15	9	14	12
5 (Extremely easy to use)	28	22	26	25	11	13

System configuration information

Table 10: Detailed information on the Copilot+ PCs we tested.

System configuration information	Copilot+ PC: Microsoft Surface Pro 11 th edition	Copilot+ PC: ASUS ProArt P16 (H7606W)	Copilot+ PC: Microsoft Surface Laptop 7 th edition (2107)
Processor			
Vendor	Qualcomm	AMD	Intel®
Model number	Snapdragon® X Elite	Ryzen™ AI 9 HX 370	Core™ Ultra 7 268V
Core frequency (GHz)	3.4–4.0	2.0–5.1	2.2–5.0
Number of cores	12	12	8
Number of threads	12	24	8
Memory			
Amount (GB)	16	32	32
Type	LPDDR5	LPDDR5x	LPDDR5x
Graphics			
Vendor	Qualcomm	AMD	Intel
Model number	Adreno X1-85 GPU	Radeon™ 890M	Arc 140V GPU
Storage			
Amount (GB)	1,000	2,000	1,000
Connectivity/expansion			
Wireless internet	Qualcomm FastConnect 7800 Mobile Connectivity System	Wi-Fi 7	Wi-Fi 7
Battery			
Rated capacity (Whr)	53	90	54
Display			
Size (in.)	13	16	13.8
Resolution	2,880 x 1,920	3,840 x 2,400	2,304 x 1,536
Operating system			
Vendor	Microsoft	Microsoft	Microsoft
Name	Windows 11 Enterprise	Windows 11 Pro	Windows 11 Pro
Version	24H2 (Build 26120.5733)	24H2 (Build 26120.5733)	24H2 (Build 26120.5733)
Dimensions			
Height (in.)	8.2	9.72	8.67
Width (in.)	11.3	13.97	11.85
Depth (in.)	0.37	0.68	0.69
Weight (lb.)	1.97	4.08	3.67

Table 11: Detailed information on the non-Copilot+ PCs we tested.

System configuration information	Apple MacBook Air M4: Apple MacBook Air model A3240	Windows 11 PC: HP Spectre x360 2-in-1 Laptop 14-ef2023dx
Processor		
Vendor	Apple	Intel
Model number	M4	Core i7-1355U
Core frequency (GHz)	2.9–4.4	3.7–5.0
Number of cores	10	10
Number of threads	10	12
Memory		
Amount (GB)	24	16
Type	LPDDR5X	LPDDR4x
Graphics		
Vendor	Apple	Intel Iris Xe®
Model number	M4 Integrated Graphics	Iris Xe graphics
Storage		
Amount (GB)	512	1,000
Connectivity/expansion		
Wireless internet	Wi-Fi 6E	Intel Wi-Fi 6E AX211
Battery		
Rated capacity (Whr)	53.8	66
Display		
Size (in.)	13.6	13.5
Resolution	2,560 x 1,664	3,000 x 2,000
Operating system		
Vendor	Apple	Microsoft
Name	macOS® Sequoia	Windows 11 Home
Version	15.6	24H2 (Build 26100.6584)
Dimensions		
Height (in.)	8.46	8.68
Width (in.)	11.97	11.73
Depth (in.)	0.44	0.67
Weight (lb.)	2.7	3.01

How we tested

We recruited participants for the study from our communities by reaching out with a message describing the study without naming the client or the Copilot+ PC. We required all participants to have worked with both Apple macOS and Microsoft Windows in the past. We relied on participant self-reporting for that information. Our final group of participants comprised 27 women, 21 men, and 2 non-binary people across a range of ages; for more detail on their ages, see the report.

Before testing, we set up all the devices and preloaded all devices with the same corpus of Microsoft-provided data, which added up to a workweek of user history. On the Copilot+ PC, we also visited various websites and opened various files, below, to build Recall snapshots for our work week of user history (toggling off the setting Filter sensitive information in Recall Settings).

We set up two identical rooms for testing, including setting up a camera on a tripod to capture the activity occurring on the three computer screens. Before the participant entered the room for a test session, we plugged in all the devices, set up each device with an external mouse, ensured the devices were on, opened the training videos on each device, and ensured that the devices had screen recording software in progress. We labeled each device. Beside each device, we placed the prompts for the tasks and some data about passwords/PINs that the participants would need to complete some tasks. We tested using three different Copilot+ PCs, attempting to get an equal number of test runs on all three Copilot+ PCs, and so for some test runs, we swapped the Copilot+ PC in the room.

We directed the participants to start at a different machine for each participant, so that participants did not consistently go to one device first. (Over the course of the 50 participants, we used every possible order several times.) We moved the camera around to several different pre-set angles during the session to capture what was occurring onscreen.

Between each participant, we extracted screen recording files from the test systems and video files from the phones we had recording the participants. From these files, we gathered our timing and completion data. We reset the room back to its original state between each participant.

We had a proctor accompany each participant and direct them through the process. The proctors followed a strict, standardized script. To review this script, please email info@principledtechnologies.com.

Our test prompts

We provided the following test prompts to our participants on paper, with a separate page for each prompt. Please note that the “Applications or features you could use to complete this task” sections are at the end of the prompts in this document, but on the sheets we gave participants, that section was in its own dedicated box near the top of the page.

Note that the tasks here appear in a different order than they do in the report.

Copilot+ PC test prompts

Notes for all scenarios

- When you’ve completed each task, please let the proctor know.
- If any task takes more than 5 minutes, the proctor may ask you to go to the next task.
- It is always ok to reference the training video to refresh your memory on what feature to use.
- You do not need to download or use Adobe Acrobat Reader.

Task 1: Using search features to find and re-organize images

Imagine that you’re searching for two photos you recently took and imported to your laptop, but don’t remember the file names or dates. You only remember what was in the photos: one of the photos included a paintbrush with green paint and one included a piano.

Search for the two photos, again, knowing just that one included a piano, and one included a paintbrush with green paint. As you find the images, select them, copy them, and then finally paste them onto the desktop.

Try to use the search feature that we demonstrated in the intro video to accomplish this task on this device.

When you’ve found the images and copied them onto the desktop, tell the proctor you’ve completed the task.

Applications or features you could use to complete this task:

- File Explorer
- Improved Windows Search

Task 2: Summarize text and create a bulleted list

Imagine that you have a long PDF file. You need to find a section in the PDF, and then you need to summarize that section using a bulleted list. You would prefer not to read the full excerpt and create the bulleted list manually—that is only a last resort if the machine has no features to help you.

Double-click the file on the desktop labeled Integrating Hydroponics.pdf to open it. The third section in the document, located on page 3, is titled “Statistical insight.” This is the relevant excerpt that you need to summarize with a bulleted list.

Try to use the AI features demonstrated in the video to create a bulleted list that summarizes this section.

Create the bulleted list.

Applications or features you could use to complete this task:

- File Explorer
- Edge
- Click to Do

Task 3: Edit an image in a PDF

In the document you used in Task 2, imagine you need to make changes to the image on page 1, which has a logo in it. This task is to erase the logo in the image while keeping the background image intact, and save that background image into a new, separate image file without the logo.

The image is a picture of a bamboo forest, and the logo on the bottom left of it has a logo for Contoso: a “C” in purple and blue and the word Contoso. The image looks like this:



If you do not already have the file open from Task 2, re-open the file by double-clicking the file on the desktop labeled Integrating Hydroponics.pdf. You’ll see the image with the logo on page 1.

Use the features demonstrated in the video to erase the logo and save the image of the bamboo—without the logo—as a new image. It’s okay if the image doesn’t look perfect.

Applications or features you could use to complete this task:

- File Explorer:
- Edge
- Click to Do
- Windows Photos

Task 4: Locate a presentation from your recent work

Imagine that you worked on a PowerPoint presentation in the recent past, and you need to find that presentation file and edit a slide in it. You don’t remember the file name, but you do recall that one of the slides had red handwriting.

Try to use the relevant AI feature that we demonstrated in the intro video to locate the correct PowerPoint file. You may use other methods if you cannot figure out the AI feature.

Note: If the system prompts you for a PIN, use 0111.

When you locate the file in Recall, let the proctor know.

Applications you could use to complete this task:

- Recall
- File Explorer
- PowerPoint

Task 5: Revisit a website you recently visited

Imagine that you visited a website a few days ago looking for a map of attractions, and you need to go back to that website. Ideally, you don't want to search through long internet browser history.

You don't recall the name of the website, but you do remember that it featured a map.

Note: If the system prompts you for a website password, use CC1480.

Try to use the AI feature that we demonstrated in the intro video to find the website with the map. You may use other methods if you cannot figure out the AI feature.

Applications you could use to complete this task:

- Recall
- Edge

Task 6: Complete an image editing workflow

Imagine that you took some photos at a barbecue recently, one of which is an overhead photo of some hot coals in a grill. You want to remove the background from that coals photo so you can more easily use it for a family photo project. But you don't remember the file name of the photo.

Find the photo containing the hot coals, edit it to remove the background, and save that image as a new file in the pictures folder. You can use any built-in tools on the machine, including photo applications. How much of the background to remove is up to you, and it's okay if the image doesn't look perfect. (Once you've started editing the photo, please don't spend more than 5 minutes working on the edits.)

Try to use the AI feature that we demonstrated in the intro video to find the grill photo and edit it. You may use other methods if you cannot figure out the AI features.

Applications or features you could use to complete this task:

- File Explorer
- Improved Windows Search
- Click to Do
- Windows Photos

Task 7: Complete a productivity workflow

In this task we combine a few tasks that you've already completed. Try to use the AI features that we demonstrated in the intro video. You may need to use several of the features for this task. You may use other methods if you cannot figure out the AI features.

Imagine that you need to:

- Edit an image in a PDF file,
- Save that modified image to a separate file, and finally
- Add that new image to a PowerPoint slide deck.

First, let's edit and save a new image from a source image in a PDF. Open the PDF "Sustainable Planning Practices in Architecture.pdf", which contains the image you want to use. Try to use the AI tools we demonstrated the video to remove the logo labeled "Contoso" from the image on the first page of the PDF, which includes a building with plants.

Once you've removed the logo from the image, save the newly edited image of the building with plants—without the logo—to the pictures folder. It's okay if the image doesn't look perfect.

Now—on to the PowerPoint. You can't remember the PowerPoint file name or its folder location, but you do remember that the PowerPoint file contained an image of a spiral staircase. Find the PowerPoint, open it, and navigate to the slide that says "Still need image". Now find the image you modified earlier and add it to the slide that says "Still need image". (You can put the image anywhere on the slide.)

Applications or features you could use to complete this task:

- File Explorer
- Edge
- Click to Do
- Recall
- Windows Photos
- PowerPoint

MacBook Air M4 test prompts

Notes for all scenarios

- When you've completed each task, please let the proctor know.
- If any task takes more than 5 minutes, the proctor may ask you to go to the next task.
- It is always ok to reference the training video to refresh your memory on what feature to use.
- You do not need to download or use Adobe Acrobat Reader.

Task 1: Using search features to find and re-organize images

Imagine that you're searching for two photos you recently took and imported to your laptop, but don't remember the file names or dates. You only remember what was in the photos: one of the photos included a paintbrush with green paint and one included a piano.

Search for the two photos, again, knowing just that one included a piano, and one included a paintbrush with green paint.

Try to use the photos search feature that we demonstrated in the intro video to accomplish this task on this device. You may also use other methods.

As you find the images, select them, copy them, and then finally paste them onto the desktop.

Applications or features you could use to complete this task:

- Photos app
- Finder

Task 2: Summarize text and create a bulleted list

Imagine that you have a long PDF file. You need to find a section in the PDF, and then you need to summarize that section using a bulleted list. You would prefer not to read the full excerpt and create the bulleted list manually—that is only a last resort if the machine has no features to help you.

Double-click the file on the desktop labeled Integrating Hydroponics.pdf to open it. The third section in the document, located on page 3, is titled "Statistical insight." This is the relevant excerpt that you need to summarize with a bulleted list.

Try to use the AI features demonstrated in the video to create a bulleted list that summarizes this section.

Note: Check the top menu in Preview for additional options.

Create the bulleted list.

Applications or features you could use to accomplish this task:

- Preview
- Finder
- Writing Tools

Task 3: Edit an image in a PDF

In the document you used in Task 2, imagine you need to make changes to the image on page 1, which has a logo in it. This task is to extract the image from the PDF, erase the logo in the image while keeping the background image intact, and save that background image into a new, separate image file without the logo.

The image is a picture of a bamboo forest, and the logo on the bottom left of it has a logo for Contoso: a “C” in purple and blue and the word Contoso. The image looks like this:



If you do not already have the file open from Task 2, re-open the file by double-clicking the file on the desktop labeled Integrating Hydroponics.pdf. You'll see the image with the logo on page 1.

Note: You can use a keyboard shortcut to capture a portion of the screen (the image with the logo). Pressing Shift+Command+4 simultaneously will allow you to use the mouse to drag and drop an area of your screen to capture, which produces an image file on your desktop that you can then edit.

Use the features demonstrated in the video to erase the logo and save the image of the bamboo—without the logo—as a new image. It's okay if the image doesn't look perfect.

Applications or features you could use to accomplish this task:

- Preview
- Photos app
- Finder

Task 4: Locate a presentation from your recent work

Imagine that you worked on a PowerPoint presentation in the recent past, and you need to find that presentation file and edit a slide in it. You don't remember the file name, but you do recall that one of the slides had red handwriting.

Find the correct PowerPoint file with that slide among the files on this system.

You may use any search methods from the video or your knowledge to find the file.

Applications or features you could use to accomplish this task:

- PowerPoint
- Finder
- Spotlight Search

Task 5: Revisit a website you recently visited

Imagine that you visited a website a few days ago looking for a map of attractions, and you need to go back to that website.

You don't recall the name of the website, but you do remember that it featured a map.

To browse history on the Safari browser, open Safari, use the History menu on the top task bar, then choose the options or pages you wish to check.

Using the tools available to you on this machine, such as browser history, to find the website.

Note: If the websites prompt you for a website password, use CC1480.

Applications or features you could use to accomplish this task:

- Safari

Task 6: Complete an image editing workflow

Imagine that you took some photos at a barbecue recently, one of which is an overhead photo of some hot coals in a grill. You want to remove the background from that coals photo so you can more easily use it for a family photo project. These files are in the Photos app, but you don't remember the file name of the photo.

Find the photo containing the hot coals, edit it to remove the background, and save that image as a new file to the pictures folder. If you need to move the photo or create copies, that's okay. You can use any built-in tools on the machine, including the Photos app, Preview, or any right-click shortcuts you see. How much of the background to remove is up to you, and it's okay if the image doesn't look perfect.

You can use any features that we demonstrated in the intro video to accomplish this task on this device. You may also use other methods.

Applications or features you could use to accomplish this task:

- Finder
- Photos app
- Preview

Task 7: Complete a productivity workflow

In this task, we combine a few tasks that you've already completed. Try to use the search and AI features that we demonstrated in the intro video to complete this workflow. You may use other methods if you cannot figure out the AI features. You may also need to use several applications for this task, including Photos, Preview, screen capture keyboard shortcuts, or other Mac tools.

Imagine that you need to:

- Edit an image in a PDF file,
- Save that modified image to a separate file, and finally
- Add that new image to a PowerPoint slide deck.

First, let's edit and save a new image from a source image in a PDF. Open the PDF "Sustainable Planning Practices in Architecture.pdf", which contains the image you want to use. Using the tools on this machine (as you did in Task 3), remove the logo labeled "Contoso" from the image on the first page of the PDF, which includes a building with plants.

Note: You can use a keyboard shortcut to capture a portion of the screen (the image with the logo). Pressing Shift+Command+4 simultaneously will allow you to use the mouse to drag and drop an area of your screen to capture, which produces an image file on your desktop that you can then edit.

Once you've removed the logo from the image, save the newly edited image of the building with plants—without the logo—to the pictures folder. It's okay if the image doesn't look perfect.

Now—on to the PowerPoint. You can't remember the PowerPoint file name or its folder location, but you do remember that the PowerPoint file contained an image of a spiral staircase. Find the PowerPoint, open it, and navigate to the slide that says "Still need image".

Now find the image you modified earlier and add it to the slide that says "Still need image". (You can put the image anywhere on the slide.)

Applications or features you could use to accomplish this task:

- Finder
- Spotlight Search
- Photos app
- Preview
- PowerPoint

Windows 11 test prompts

Notes for all scenarios

- When you've completed each task, please let the proctor know.
- If any task takes more than 5 minutes, the proctor may ask you to go to the next task.
- It is always ok to reference the training video to refresh your memory on what feature to use.
- You do not need to download or use Adobe Acrobat Reader.

Task 1: Using search features to find and re-organize images

Imagine that you're searching for two photos you recently took and imported to your laptop, but don't remember the file names or dates. You only remember what was in the photos: one of the photos included a paintbrush with green paint and one included a piano.

Search for the two photos, again, knowing just that one included a piano, and one included a paintbrush with green paint. As you find the images, select them, copy them, and then finally paste them onto the desktop.

Use any methods you'd like to accomplish this task on this device.

When you've found the images and copied them onto the desktop, tell the proctor you've completed the task.

Applications or features you could use to complete this task:

- File Explorer

Task 2: Summarize text and create a bulleted list

Imagine that you have a long PDF file. You need to find a section in the PDF, and then you need to summarize that section using a bulleted list. You would prefer not to read the full excerpt and create the bulleted list manually—that is only a last resort if the machine has no features to help you.

Double-click the file on the desktop labeled Integrating Hydroponics.pdf to open it. The third section in the document, located on page 3, is titled "Statistical insight." This is the relevant excerpt that you need to summarize with a bulleted list.

You may use any AI applications present on this machine to create a bulleted list that summarizes this section.

Create the bulleted list.

Applications or features you could use to complete this task:

- File Explorer
- Edge
- Copilot or online AI tools

Task 3: Edit an image in a PDF

In the document you used in Task 2, imagine you need to make changes to the image on page 1, which has a logo in it. This task is to extract the image from the PDF, erase the logo in the image while keeping the background image intact, and save that background image into a new, separate image file without the logo.

The image is a picture of a bamboo forest, and the logo on the bottom left of it has a logo for Contoso: a "C" in purple and blue and the word Contoso. The image looks like this:



If you do not already have the file open from Task 2, re-open the file by double-clicking the file on the desktop labeled Integrating Hydroponics.pdf. You'll see the image with the logo on page 1.

Note: You can use the Snipping Tool app—which you can also access by simultaneously pressing WindowsKey+Shift+S—to capture a portion of the screen.

Using the applications available on this machine, erase the logo and save the image of the bamboo—without the logo—as a new image. You may wish to use the Snipping tool, the Windows Photos app, or other applications on this device. It's okay if the image doesn't look perfect.

Applications or features you could use to complete this task:

- File Explorer
- Edge
- Snipping Tool
- Windows Photos

Task 4: Locate a presentation from your recent work

Imagine that you worked on a PowerPoint presentation in the recent past, and you need to find that presentation file and edit a slide in it. You don't remember the file name, but you do recall that one of the slides had red handwriting.

Use any methods you'd like to accomplish this task on this device. If there's not a shortcut, you may need to open a number of files to find the one you're looking for.

Note: If the system prompts you for a PIN, use 0111.

Find the correct PowerPoint file with that slide among the files on this system.

Applications or features you could use to complete this task:

- File Explorer
- PowerPoint

Task 5: Revisit a website you recently visited

Imagine that you visited a website a few days ago looking for a map of attractions, and you need to go back to that website.

You don't recall the name of the website, but you do remember that it featured a map.

To browse history on the Edge browser, open Edge, use the ellipses menu in the upper right, choose History, then use the next ellipses (...) menu, then choose Open history page.

Note: If the websites prompt you for a website password, use CC1480.

Using the tools available to you on this machine, such as browser history, to find the website.

Applications or features you could use to complete this task:

- Edge

Task 6: Complete an image editing workflow

Imagine that you took some photos at a barbecue recently, one of which an overhead photo of some hot coals in a grill. You want to remove the background from that coals photo so you can more easily use it for a family photo project. But you don't remember the file name of the photo.

Find the photo containing the hot coals, edit it to remove the background, and save that image as a new file in the pictures folder. You can use any built-in tools on the machine, including Photos, Paint, or other applications. How much of the background to remove is up to you, and it's okay if the image doesn't look perfect. (Once you've started editing the photo, please don't spend more than 5 minutes working on the edits.)

Use any methods you'd like to accomplish this task on this device.

Applications or features you could use to complete this task:

- File Explorer
- Windows Photos

Task 7: Complete a productivity workflow

In this task we combine a few tasks that you’ve already completed. You may also need to use several Windows applications, such as the Photos app, Snipping Tool, or others.

Imagine that you need to:

- Edit an image in a PDF file,
- Save that modified image to a separate file, and finally
- Add that new image to a PowerPoint slide deck.

First, let’s edit and save a new image from a source image in a PDF. Find and open the PDF “Sustainable Planning Practices in Architecture. pdf”, which contains the image you want to use. Using the tools on the PC (as you did in Task 3), remove the logo labeled “Contoso” from the image on the first page of the PDF, which includes a building with plants.

Note: You can use the Snipping Tool app—which you can also access by simultaneously pressing WindowsKey+Shift+S—to capture a portion of the screen.

Once you’ve removed the logo from the image, save the newly edited image of the building with plants—without the logo—to the pictures folder. It’s okay if the image doesn’t look perfect.

Now—on to the PowerPoint. You can’t remember the PowerPoint file name or its folder location, but you do remember that the PowerPoint file contained an image of a spiral staircase. Find the PowerPoint, open it, and navigate to the slide that says “Still need image”.

Now find the image you modified earlier and add it to the slide that says “Still need image”. (You can put the image anywhere on the slide.)

Applications or features you could use to complete this task:

- File Explorer
- Edge
- Snipping Tool
- Windows Photos
- PowerPoint

How we extracted timing data and defined success and failure each task

Below, we explain how we gathered timings for each task and how we defined success and failure for each task. For our timings, we used the screen recordings and/or the videos we took of screens. In all cases, if a participant could not complete the task successfully in either five minutes—or the additional three minutes we provided if they said they were close—we counted the task as a failure. If a participant successfully completed the task but did so using different tools than we recommended, we counted that as a success.

On some tasks, participants failed because the system crashed or froze; our proctor made an error; and/or they attempted to use a tool in the correct way and the tool did not work. For these tasks, we have entirely excluded the results.

Note that the tasks here appear in a different order than they do in the report.

Task 1: Using search features to find and re-organize images

- Timing
 - Copilot+ PC: Document start time when the user opens File Explorer or when they open the Photos app, whichever they do first. Document stop time when they paste the second image onto the desktop.
 - MacBook Air M4: Document start time when the user opens Finder or when they open the Photos app, whichever they do first. Document stop time when they paste the second image onto the desktop.
 - Windows 11 PC: Document start time when the user opens File Explorer or when they open the Photos app, whichever they do first. Document stop time when they paste the second image onto the desktop.
- Count the task as complete if: The user finds the correct images and paste them both onto the desktop.
- Count the task as incomplete if:
 - The user finds the wrong image or images.
 - The user does not copy and paste the images onto the desktop.
 - The user cannot complete the task in the time allotted.

Task 2: Summarize text and create a bulleted list

- Timing
 - All systems: Document start time when the user opens the PDF. Document stop time when the bulleted list is fully created onscreen.
- Count the task as complete if: The user creates a bulleted list based on the PDF.
- Count the task as incomplete if:
 - The user creates a bulleted list based on a different PDF.
 - The user cannot complete the task in the time allotted.

Task 3: Edit an image in a PDF

- Timing
 - All systems: Document start time when the user opens the PDF, or if they already have the PDF open from the previous task, when the user scrolls up to the page in the PDF with the picture that needs to be edited. Document stop time when they save the edited image with the logo removed. (Stop timing when they click save or save as. Do not count time for the user inputting text and selecting a file location.)
- Count the task as complete if: The user successfully removes the logo from the correct picture.
- Count the task as incomplete if:
 - The user does not remove the logo.
 - The user edits a different image than the one we requested.
 - The user does not save the image.
 - The user cannot complete the task in the time allotted.

Task 4: Locate a presentation from your recent work

- Timing
 - Copilot+ PC: Document start time when the user opens Recall or when they open File Explorer, whichever they do first. Document stop time when they find the slide with red handwriting in Recall, or if they are using another method, when they find the PowerPoint with red handwriting and go to the slide with red handwriting.
 - MacBook Air M4: Document start time when the user opens Finder or Spotlight Search, whichever they do first. Document stop time when they find the PowerPoint with red handwriting and go to the slide with red handwriting.
 - Windows 11 PC: Document start time when the user opens File Explorer. Document stop time when they find the PowerPoint with red handwriting and go to the slide with red handwriting.
- Count the task as complete if: The user finds the correct file and goes to the correct slide in the time allotted.
- Count the task as incomplete if:
 - The user finds the wrong file and thinks they've found the right file.
 - The user goes to the wrong slide in the file and thinks they've gone to the correct slide.
 - The user cannot complete the task in the time allotted.

Task 5: Revisit a website you recently visited

- Timing
 - Copilot+ PC: Document start time when the user opens Recall or when they open Edge, whichever they do first. (Note that from the previous task to this one, users could keep Recall open, so if this is the case, start the timer when you see them beginning work on the system in Recall or Edge.) Document stop time when they find the website with the map in Recall or in Edge history.
 - MacBook Air M4: Document start time when the user opens Safari. Document stop time when they find the website with the map, specifically when the map first fully appears on screen.
 - Windows 11 PC: Document start time when the user opens Edge. Document stop time when they find the website with the map, specifically when the map first fully appears on screen.
- Count the task as complete if: The user finds the correct website in the time allotted.
- Count the task as incomplete if:
 - The user finds the wrong website and thinks they've found the right website.
 - The user cannot complete the task in the time allotted.

Task 6: Complete an image editing workflow

- Timing
 - Copilot+ PC: Document start time when the user opens File Explorer or the Photos app, whichever they do first. Document stop time when they save the image of the grill with coal with the background removed. (Stop timing when they click save or save as. Do not count time for the user inputting text and selecting a file location.)
 - MacBook Air M4: Document start time when the user opens the Photos app. Document stop time when they save the image of the grill with coal with the background removed. (Stop timing when they click save or save as. Do not count time for the user inputting text and selecting a file location.)
 - Windows 11 PC: Document start time when the user opens File Explorer or the Photos app, whichever they do first. Document stop time when they save the image of the grill with coal with the background removed. (Stop timing when they click save or save as. Do not count time for the user inputting text and selecting a file location.)
- Count the task as complete if:
 - The user saves the correct image of the grill with coal with the background mostly or entirely removed.
 - The user saves a different image of the grill, which is from a different angle, with coal with the background mostly or entirely removed. (We requested they use an overhead photo of the grill, but there was also an image of a grill with coals from an upper-and-to-the-side angle; we counted using this photo as a success.)
- Count the task as incomplete if:
 - The user edits the wrong photo.
 - The user does not remove the background from the photo at all.
 - The user does not save the image.
 - The user cannot complete the task in the time allotted.

Task 7: Complete a productivity workflow

- Timing
 - All systems: Document start time when the user opens the PDF. Document stop time when they add the edited image into the PowerPoint. (If the user edits the size of the image in the PowerPoint deck, do not count that time.)
- Count the task as complete if: The user successfully removes the logo from the correct image, saves it to a separate file, and adds it to the correct slide in the correct PowerPoint deck.
- Count the task as incomplete if:
 - The user does not remove the logo.
 - The user edits a different image than the one we requested.
 - The user does not save the image.
 - The user does not add the image to the correct PowerPoint deck.
 - The user does not add the image to the correct slide in the PowerPoint deck.
 - The user cannot complete the task in the time allotted.

[Read the report ►](#)

This project was commissioned by Microsoft.



Facts matter.®

Principled Technologies is a registered trademark of Principled Technologies, Inc. All other product names are the trademarks of their respective owners.

DISCLAIMER OF WARRANTIES; LIMITATION OF LIABILITY:

Principled Technologies, Inc. has made reasonable efforts to ensure the accuracy and validity of its testing, however, Principled Technologies, Inc. specifically disclaims any warranty, expressed or implied, relating to the test results and analysis, their accuracy, completeness or quality, including any implied warranty of fitness for any particular purpose. All persons or entities relying on the results of any testing do so at their own risk, and agree that Principled Technologies, Inc., its employees and its subcontractors shall have no liability whatsoever from any claim of loss or damage on account of any alleged error or defect in any testing procedure or result.

In no event shall Principled Technologies, Inc. be liable for indirect, special, incidental, or consequential damages in connection with its testing, even if advised of the possibility of such damages. In no event shall Principled Technologies, Inc.'s liability, including for direct damages, exceed the amounts paid in connection with Principled Technologies, Inc.'s testing. Customer's sole and exclusive remedies are as set forth herein.