

# How to save \$\$\$ on Ink



Association of Personal Computer  
User Groups



Association of Personal Computer  
User Groups

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September 2021



All display are from my Windows 10 PC 21H1 or  
My iPad Air 2.



Association of Personal Computer  
User Groups

Repeat this presentation at your speed.



Association of Personal Computer  
User Groups



# Printer Terms

- **Print head** - The core of an inkjet printer:
  - contains a series of nozzles that are used to spray drops of ink.
  - Print Heads **hold ink** from the Cartridge reservoir until needed.
  - **The Print Head is separate from the ink storage reservoir.**
  - Print Head is located: (2 places)
    - **On the cartridge,**
    - **In the printer**

# Secrets printer manufactures don't want you to know.

- The ink is very costly.
  - Average \$75 an ounce.
- Putting serial numbers on the cartridge chips.
  - Put in a cartridge with a serial number you have used before, it will be rejected.
  - This means **you can't** refill a cartridge.

# Secrets printer manufactures don't want you to know.

- An Expiration Date on the Cartridge chip.
  - Doesn't Mean empty.
- A new printer with cartridges included,
  - Is filled with very little ink. (7ml)
- Embedded chip tells the printer who made the cartridge.
- Bottom Line – buy more **INK**.

# **Secrets printer manufactures don't want you to know.**

- Almost every page printed on a color inkjet or laser printer has a secret serial number which can be traceable to the printer itself.
- Microdots are well known to security researchers.
- Many color laser printers add them to documents .
- Microdots have existed for many years.

# Spending Too Much \$\$\$ on Printer Ink

- Try using a Compatible or Generic Ink Cartridges, and the OEM may warn you that you're:
  - voiding the service warranty,
  - putting the printer at risk of damage,
  - or possibly ruining the printouts.

## Nonsense,

- You won't void the warranty and you won't hurt the printer,
- 63% of respondents who used aftermarket cartridges say:
  - they're just as good as name-brand cartridges. (Consumer Reports Magazine)

# So what is a Printer Cartridge Chip?

- Devices that communicate with the printer through;
  - either direct contact or radio frequency (RF).
- Mounted on a small circuit board.
- Contains cartridge specific information such as:
  - Correct Cartridge Installation
  - Info regarding the Cartridges Page Yield
- Cartridges will store ongoing machine information as the cartridge is used.
- The printer will:
  - count the pages printed,
  - the pixels printed (page coverage),
    - storing all this information on the chip.

# What a Chip can't do.

1. Does NOT control the yield.
  - Chips are pre-programmed with the yield.
2. Does not shut down printer at a certain page count.
  - Printer will use the information stored on the chip to determine if or when it should stop printing.
3. Does not control toner level information.
  - The printer determines the toner level by counting the number of pixels.
4. Cannot give an error message.
  - The printer contains all the circuitry needed to generate error codes.
  - If the printer cannot see or read a chip, it will generate an error code, but it always comes from the printer, not the chip.



# How inkjet printers determine cartridge ink level?

- Some cartridges come with an integrated circuit chip that constantly monitors the amount of ink flowing out.
- It also remembers the time when a new cartridge was installed.
- Using this data and with pre-programmed programs, the printers are able to determine the ink level of the cartridge.
- This information is then displayed on your computer screen.

# How inkjet printers determine cartridge ink level?

- Some printers use a different technique,
  - an optical sensor is used to determine ink level of the cartridge.
  - A beam of light passes inside the cartridge through a prism, which is then detected by an optical sensor.
- Based on the level of light refraction, the printer is able to determine the ink level of the cartridge.

# Based on approximations

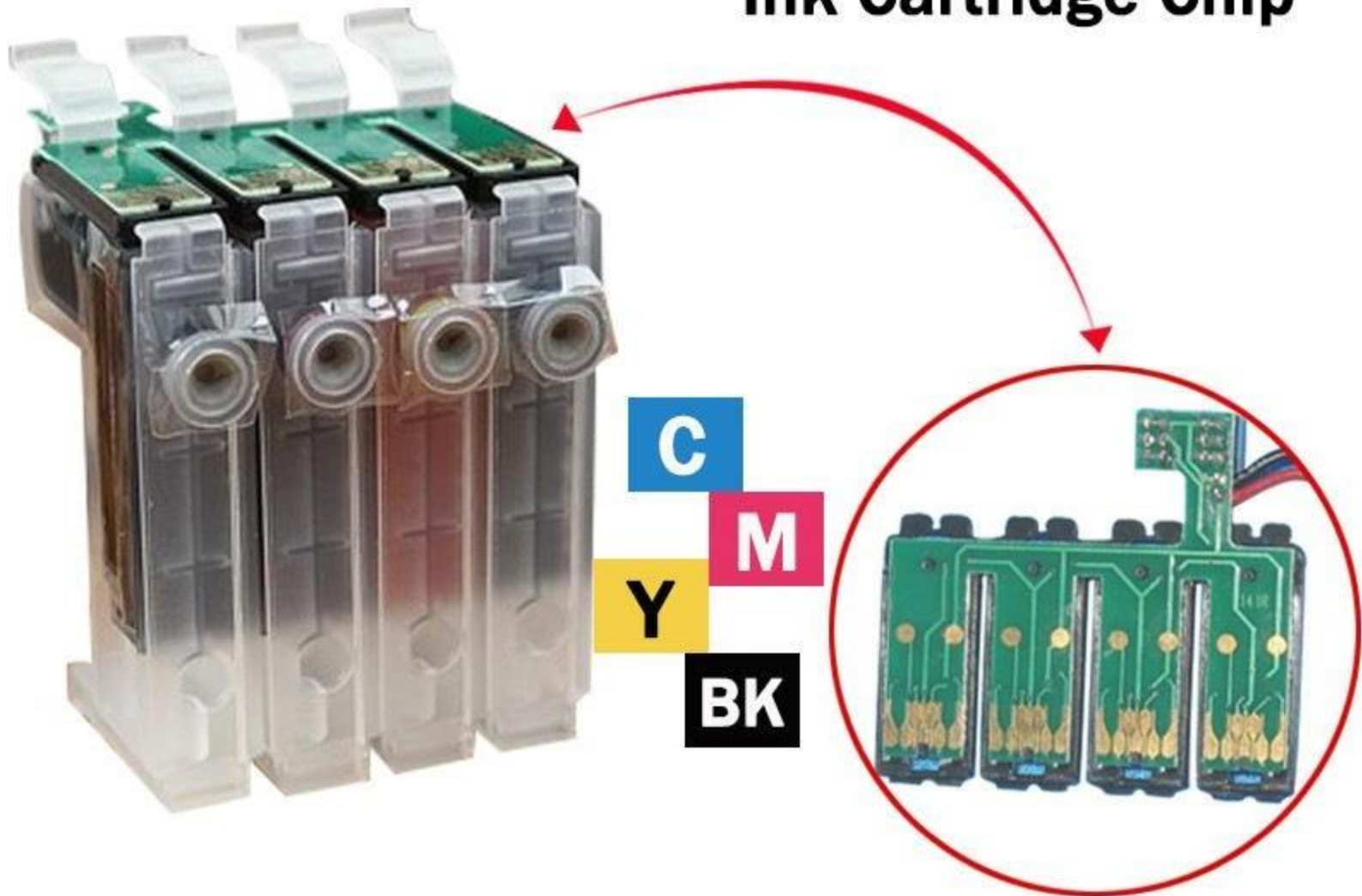
- Calculating cartridge ink level may have scientific basis, but it is **not** perfect.
- There are a lot of approximations used by inkjet printers when calculating cartridge ink level.
- There are also claims that printers purposefully show the ink cartridge level as low or empty;
  - to force you to buy a new one.
- Printer manufacturing companies actually sell affordable printers at a loss;
  - and make profits through ink cartridge refills.

# Based on approximations

- In a recent study, it was found that almost;
  - 60 percent of the ink in a cartridge is never utilized and is thrown away.
- This appears to be in line with customer experiences,
  - wherein ink cartridges often go dry a lot earlier than expected.
- It's almost impossible to get anywhere close to the number of prints mentioned on the ink cartridge.

You can see the ink level in these cartridges.

## Ink Cartridge Chip



# Types of Inkjet Ink Cartridges

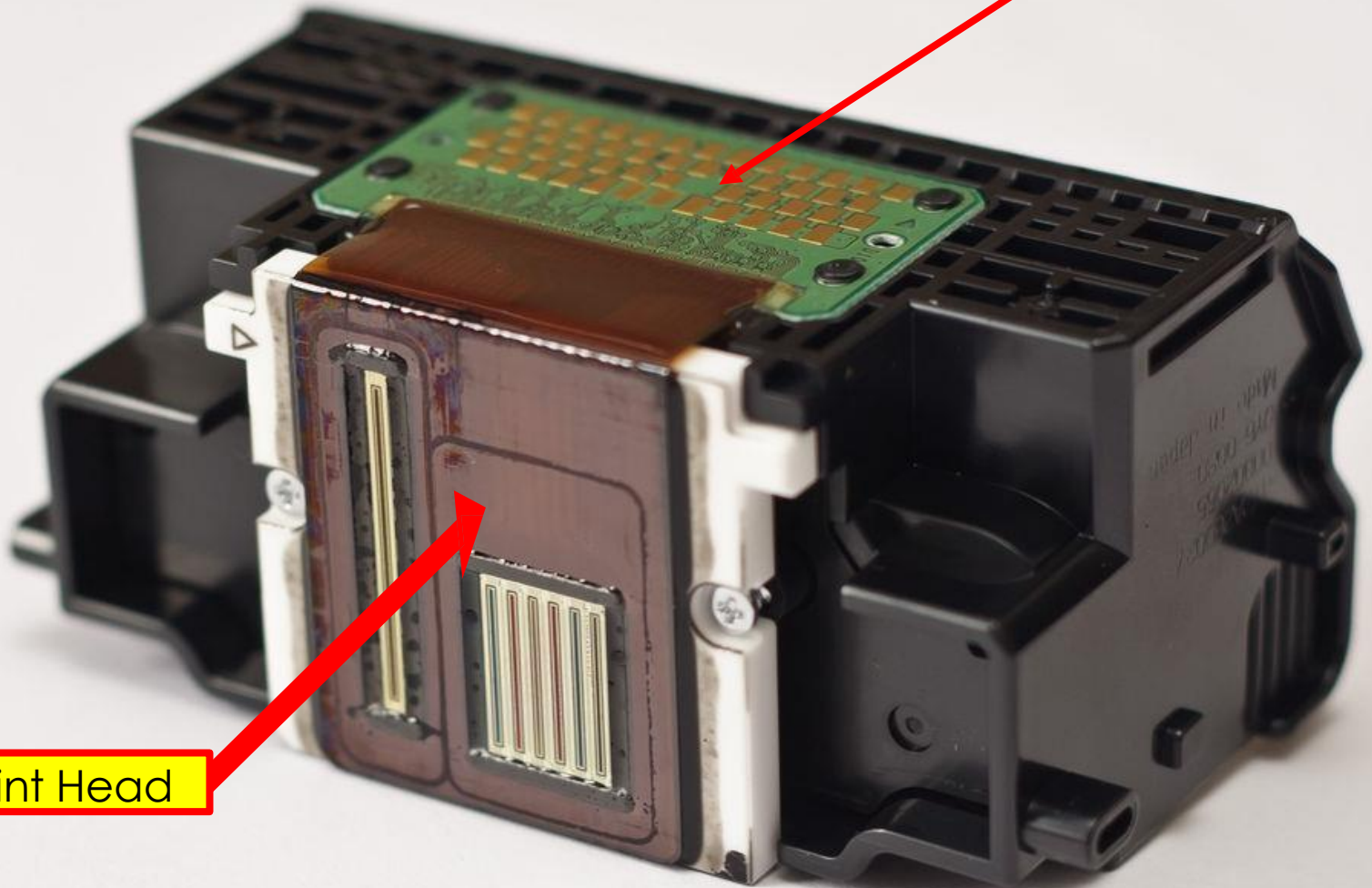
- Sponge cartridges
  - Single color - Black
  - 3 colors – Blue, Yellow, Magenta
- Single-color individual cartridges.
  - Reservoir cartridges.

Contacts for the printer.

Print Head

Fixed Print Head In the Printer – 4 to 6 Cartridges of different colors

**Bottom View**



# Ink Cartridges with a printhead

- Ink cartridge with built in printhead.
- The most complex type of printer ink cartridges.
- Cartridges contain complex circuitry which detect:
  - Ink levels,
  - Compatibility of cartridge to printer.
- The most expensive of all cartridges to buy
  - Often the generic replacements are not very reliable.
- Buying a printer? – Try to avoid these.
- Other printers have the printhead built into the printer itself!
- Avoid any printer which uses only **two** ink cartridges.



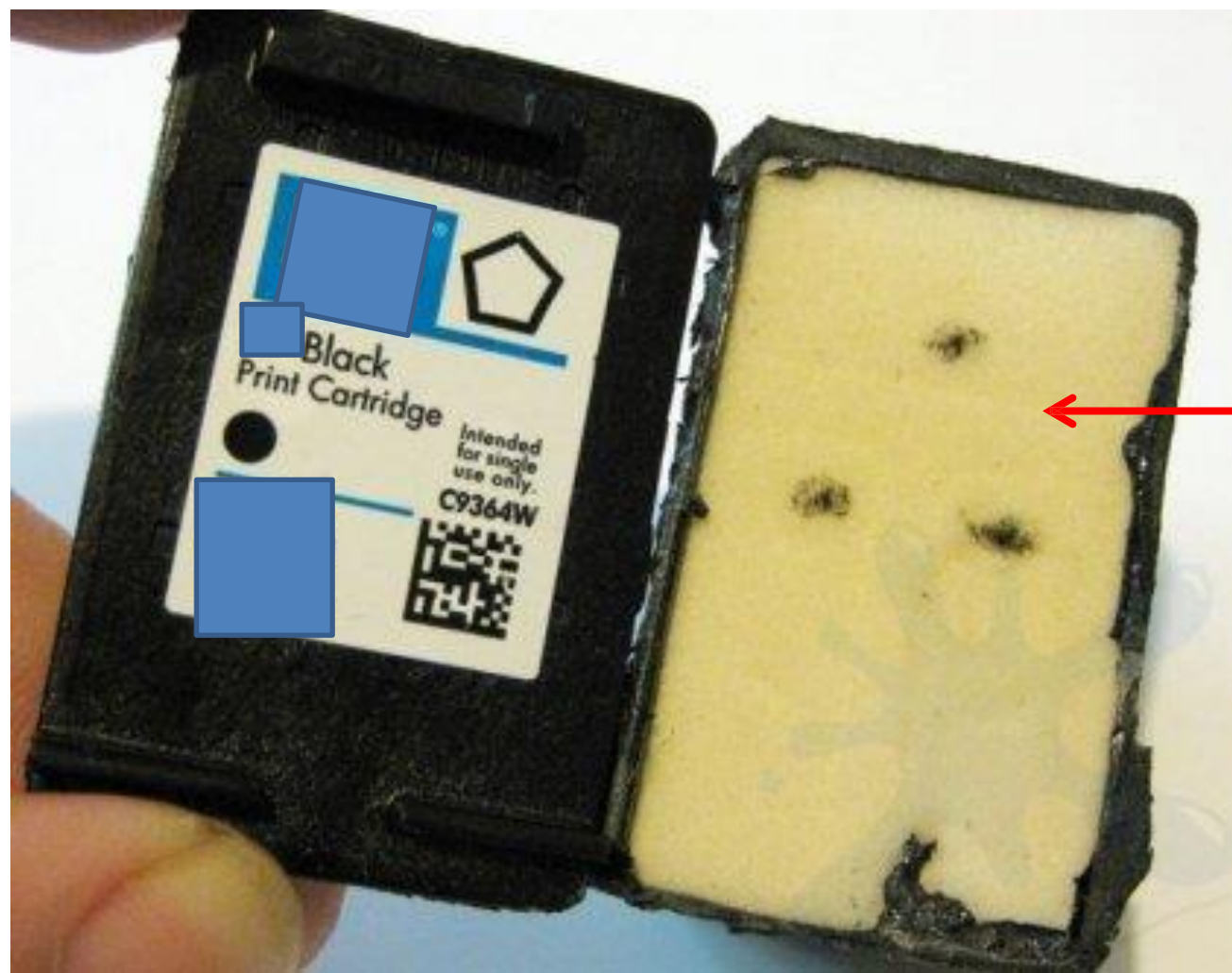
# Ink cartridge with built in printhead



Print Head

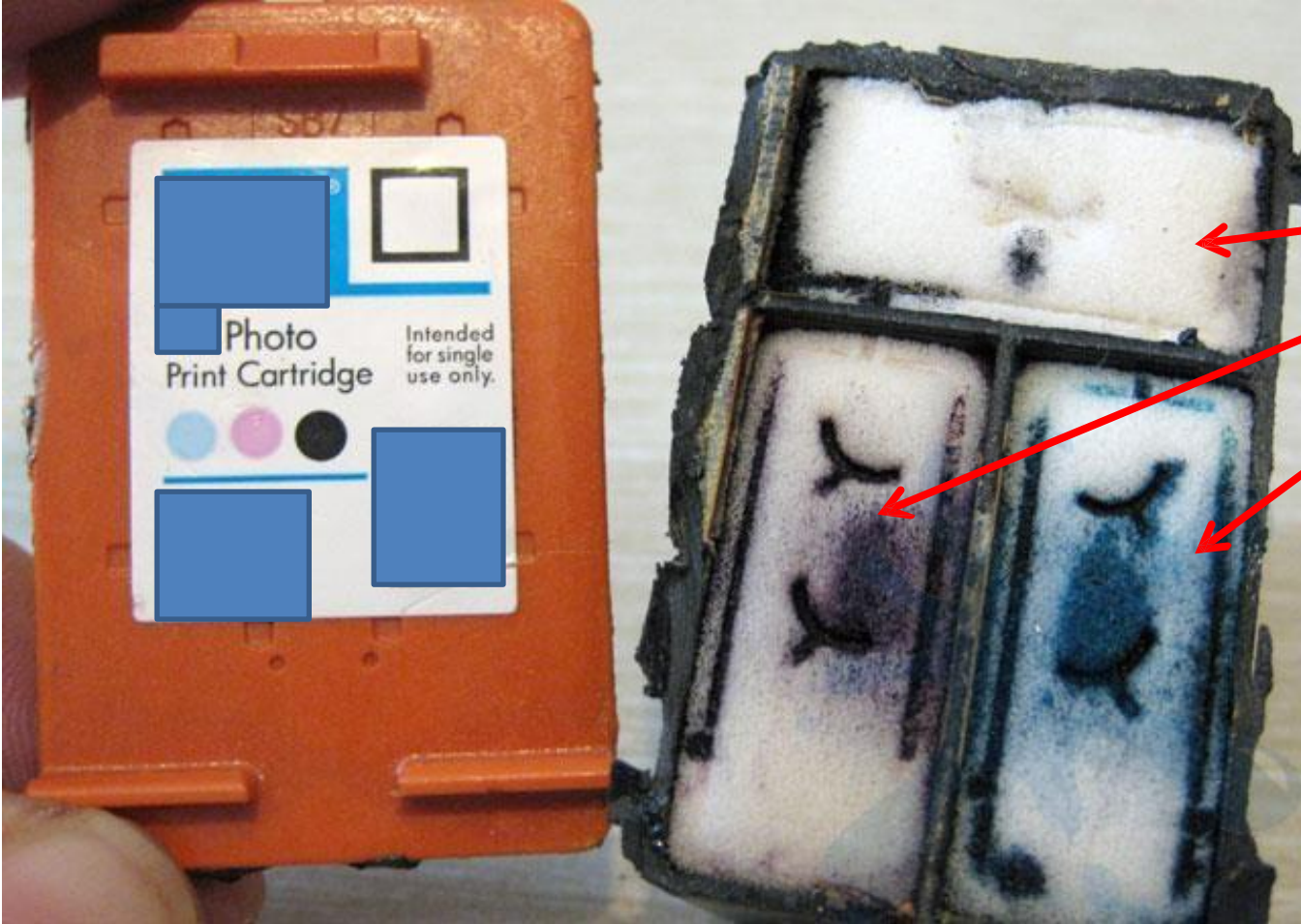
Contacts

# Black Cartridge w/ Sponge Single Color



Soft  
Sponge  
Material

# Color Cartridge w/ Sponges 3 colors



Soft  
Sponges



## Single Color Cartridges for Printer

You can see the ink level.



Eco Tank Printers



Eco Tank Printers

# How to Save \$\$\$ on Ink?

- Use Print Preview before you print.
  - See what the printout will look like.
- **Print in draft mode;**
  - Grayscale printing.
- **Printer settings**
  - are essential and will save the most
    - when done right.
  - make “low quality” the default.

# How to Save \$\$\$ on Ink?

- Which **Font** Saves Ink and Money.?
- The winner: **Century Gothic:**
  - which delivered a 31 % savings in printing costs over Arial.
    - \$20 a year by using Century Gothic for all documents.
- This Power Point Presentation uses Century Gothic.



# How to Save \$\$\$\$ on Ink?

- Leave the printer **ON**.
- Turning printer **OFF**:
  - it will clean print heads,
  - It dumps the ink,
    - from the Print Heads,
    - To the bottom of the printer.

**Note:** Some printers will go to Sleep.

# Turn Off Printer = Cleaning Process

- To prevent ink from drying up in the Print Head.
- Dumps ink from the Print Head;
  - Through a SPITTOON
  - To an open plastic tray underneath the cleaning/wiping station.
- All printers have a large absorption pad in the bottom of the printer.
  - Where the ink goes from Cleaning process.

# Inkjet spittoon

- To maintain flow, it is necessary to clean the inkjet heads:
  - by spraying (or "spitting") excess ink through all the jets.
- The excess ink used for cleaning needs to be collected somewhere
  - to avoid creating a mess below the printer.
- All inkjet printers have a "spittoon" hidden inside to collect this ink.
- Different printer manufacturers use different spittoon technology.
  - small plastic tray, absorbent fiber pad.

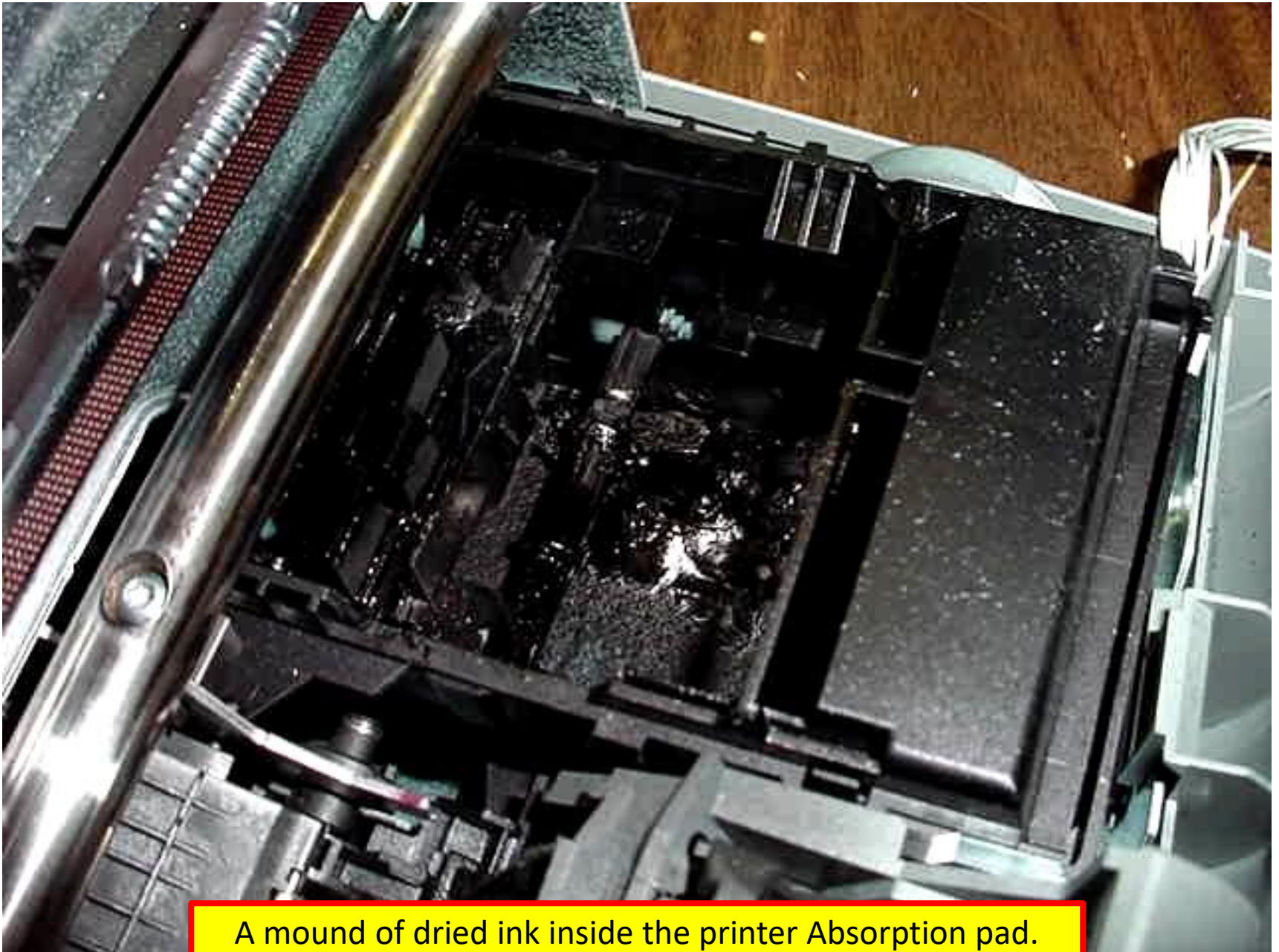
# Inkjet spittoon

From **Wikipedia**, the free encyclopedia

An inkjet spittoon is a component in electronic inkjet printers.

Inkjet printers commonly experience a problem of drying out which blocks the flow of ink.

To restore flow, it is necessary to clean the inkjet head by spraying (or "spitting") excess ink through all the jets to reapply moisture and unblock the adjacent clogged jets.



A mound of dried ink inside the printer Absorption pad.  
When the pile grows high enough, it jams the printer.

# Printer Common Sense

- Keeping the printer **ON** all the time will keep the print heads cleaner
  - making them less likely to break.
- During maintenance cycles, the printer uses up ink
  - sometimes 20 to 30 % per cartridge.
- Turning **ON** the printer triggers a maintenance cycle regardless of manufacturer.
- Printer in standby mode consumes about 3 watts of power – less than a typical nightlight.

# ON → OFF on the Printer

1. Power down the printer properly, don't just unplug it.

- ❖ the print heads to move into a position that protects ink from drying out,
- ❖ turn printer off from a power strip,
- ❖ Unplugging it,
  - Leaves the heads exposed.

2. **Power down the printer IAW the procedures of the printer.**

(IAW= In accordance with)

# Trusted Supplier I use.

(Good Prices and Trustworthy, takes PayPal)

<https://bestinkandtoner.com/>

- Web Site Has: Email, Phone #,
  - Mailing Address.
  - ‘What If’ Policy = Excellent
  - Average Price = \$5 per cartridge
  - Only Covers: **Certain Printers**
- If cartridge does not work let ccs-digital know.
- Call Izzy – when looking for a new printer



### SAVE UP TO 100% ON INK COSTS\* IN TWO STEPS

Step One: Choose the manufacturer of your printer.

Step Two: Choose your printer model or cartridge.



#### BRANDS



HP INK AND TONER CARTRIDGES



CANON INK AND TONER CARTRIDGES



EPSON INK CARTRIDGES



BROTHER INK AND TONER CARTRIDGES

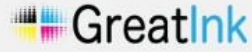


SAMSUNG TONER CARTRIDGES



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Select Your Printer Model

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OR

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HP

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#### ARTISAN

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A-700

A-710

A-725

A-730

A-800

A-810

A-835

A-837

A-1430

<https://bestinkandtoner.com/>

You can see the ink level.



\$25.00 + shipping



\$20.00 + shipping

Call them for printer suggestions.

# Compatible or Generic Ink Cartridges

- A replica or a copy of a brand name cartridge.
- The non-genuine inks are more popular than the actual genuine product.
- Driven by the consumer not wanting to pay the ridiculous prices of the brand name products.
- A generic ink will sell for between 50 - 150% less than the genuine.
- Often the non-genuine inks actually contain a load more ink
  - which makes them a much more viable option.

# Compatible or Generic Ink Cartridges

- Be warned- there is a huge variation in the quality of compatible inks.
- The market has been flooded with cheap, low grade consumables.
- Do the **homework** and look at reviews of sites before buying.
- Cheap, poor quality inks can
  - clog the printers print heads,
  - or may even completely destroy the printer.

# What can be Done

- Now is the time to get a Older printer
  - About all the printer companies are jumping **on** the rip-off bandwagon.
- Every printer needs a different cartridge.
- OEM issues firmware upgrades via the Internet;
  - to the printer and cartridge so it will stop working.
- Limit/control updates to printer software.
  - Duckduckgo it on the internet.
    - **Example (Printer Name)printer update review.**
    - I figured out a free method for downgrading the firmware, and now my printer can once again accept 3rd party cartridges and print!

# AirPrint —Apple

One method

- Don't need to download or set anything up.
- Once the device and printer are connected on the same Wi-Fi network:
  1. Open what to print on the device.
  2. Tap the “Share” button.
  3. Select “Print” in the drop-down menu.
  4. Select Printer under Printer Options
  5. Select Number of Copies.
  6. Tap Print

My Ipad Air 2



# NatGeo's '9/11: One Day in America' is a painstaking portrait of horror, resilience & hope

By Rachel Nostrant

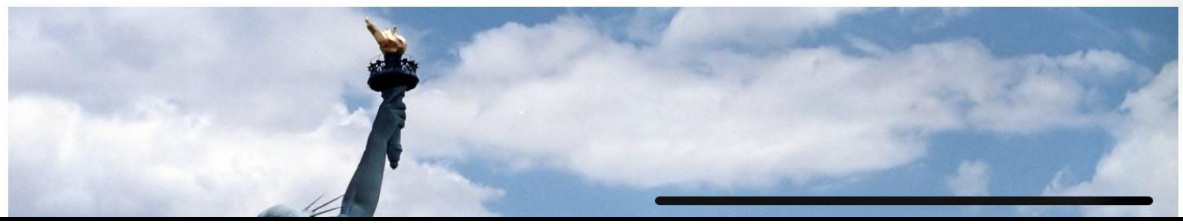
Sep 8, 03:22 PM



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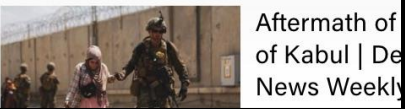
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Edit Actions...



Blue = Ready Gray = Select a printer

Printer Options

Cancel Print

Printer Canon MX920 series

1 Copy - | +

Options Double-sided, Color

The Mobile Device searches for a printer that can be used.

My Ipad Air 2

### NatGeo's '9/11: One Day in America' is a painstaking portrait of horror, resilience & hope

By Rachel Nostrand | Sep 8, 03:22 PM



New York Harbor pre-9/11. (Kenneth Graff/Getty)

"Are you ready? Okay, let's r... Page 1

The final words of Todd Beamer, one of the first...

believed to have overpowered hijackers on United Airlines Flight 93, match the sustained tone of National Geographic's latest six-part memorialization of the attacks on Sept. 11, 2001.

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*9/11: One Day in America*, an all-new, comprehensive retelling of the infamous day that launched a forever war and shocked the world, can only be described as heartbreakingly thorough. With never-before-seen footage and all-new interviews, the documentary series from the production team of Dan Lindsay and T.J. Martin ("Undeclared" and "LA 92") is a devastating yet mesmerizing portrait of America on perhaps the nation's worst day in generations.

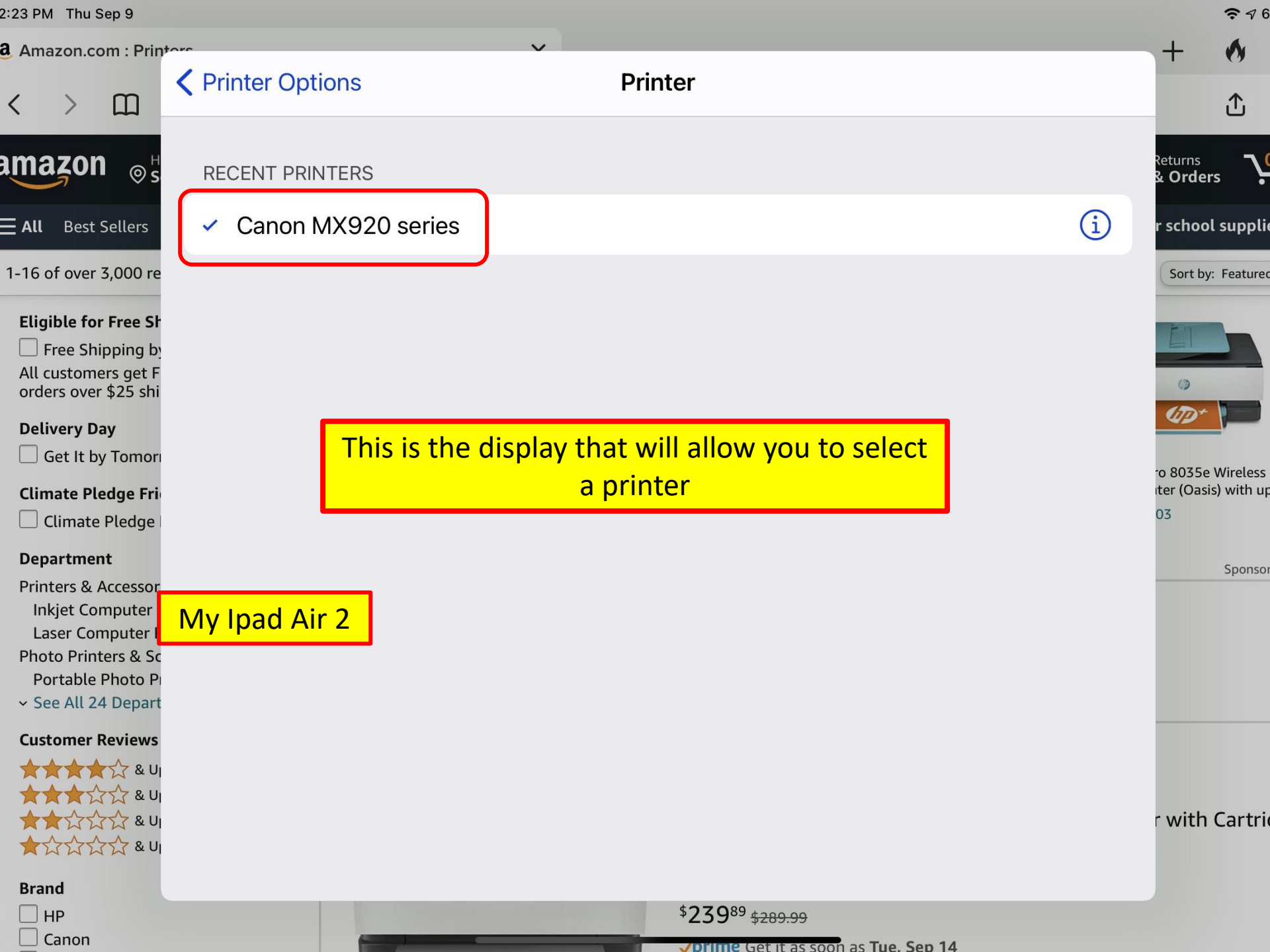
While the documentary begins like many accounts that preceded it — imagery of New York City firefighters and businessmen who worked at the World Trade Center — little time elapses before realizing this series is different.



# NatGeo's painstaking portrait of horror, resilience & hope

By Rachel Nostrand





Printer Options

Printer

RECENT PRINTERS

✓ Canon MX920 series



This is the display that will allow you to select a printer

My Ipad Air 2

\$239<sup>89</sup> \$289.99

prime Get it as soon as Tue, Sep 14

Cancel

### Printer Options

Print

Final Step

Printer

Canon MX920 series

1 Copy

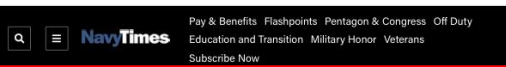
- | +

Options

Double-sided, Color

The Mobile Device sends printer information to the router then to the printer.

My Ipad Air 2



## NatGeo's '9/11: One Day in America' is a painstaking portrait of horror, resilience & hope

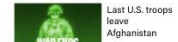
By Rachel Nostrand | Sep 8, 03:22 PM



New York Harbor pre-9/11. (Kenneth Graff/Getty)

"Are you ready? Okay, let's r... Page 1

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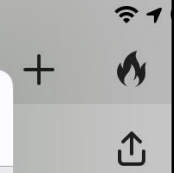


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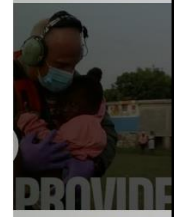


# NatGeo's painstaking portrait of horror, resilience & hope

By Rachel Nostrand



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PROVIDE

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of Kabul | Defen  
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# Other Devices

Android, Chrome Print, Different Printers

- Go to this Web Page and get the procedure.
- <https://bityl.co/8cRC>
- Google Search
  - How to print with (name of device)

**Note:** After December 31, 2020, Google Cloud Print will no longer be supported.

<https://bitly.co/8cRX>

2 ½ minutes

**CR** Consumer Reports

Videos

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# Save on Printer Ink



CR

▶ 0:00 / 2:26

## How to Save Money on Printer Ink

02:26

Constantly replacing your inkjet printer's cartridges can be frustrating and costly. Consumer Reports' expert tips will help you save time and money. For even more on printers, head to [cr.org/printers](http://cr.org/printers).



### Related Videos



Printer Buying Guide



Epson EcoTank Printer: Will it Sav...



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Wasted printer ink

1 of 2

## Save Money on Printer with Cheapest Ink: 5 important tips!

Updated on 2021-07-26

The price of the printer isn't the only thing that you need to consider if you're looking to save money. That's because your annual cost for ink cartridges will far exceed the entire amount you spent on purchasing your printer. Usually, you'll end up spending \$150 on ink expenses for a \$75 printer in just less than a year.

No wonder prominent brands like HP, Epson, and Canon don't mind selling their printers for less. They know that the real money comes from the constant sales they generate from highly profitable ink and toner cartridges.



HP 64 XL



Brother LC 103



Canon PG-240XL &  
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## CONTENT

A Comprehensive article about Printer Ink.

<https://bitly.co/8cSQ>

What is the best printer with the cheapest ink cartridges?

Tip #1: Calculate the Cost of Printing per Page

# Extra Information

[jminich@apcug.org](mailto:jminich@apcug.org)



# Extra Extra

Extra Helpful Information.

- Hints tips and Tricks

- [www.Apcug.org](http://www.Apcug.org)

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# Readers View

Reader view icon.

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## How to Fax a Document From Your Smartphone



LOWELL HEDDINGS @lowellheddings

UPDATED JANUARY 9, 2020, 9:17AM EDT



Sample  
Internet page  
**Without**  
Readers View

You can [sign a PDF document from your phone, tablet, or any other computer](#) and email it off to someone. But some organizations still don't accept documents via email – you may need to fax documents instead.

No, you can't use your smartphone's phone connection as a fax machine or dial-up modem.

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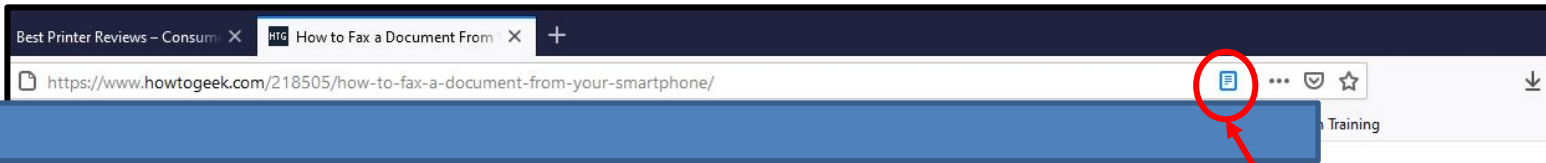
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A diagram showing a vertical stack of four icons: a close button (X), a text size control (Aa), a speaker icon, and a heart icon. A red box encloses these icons. A yellow callout box labeled "Type Controls" has an arrow pointing to the "Aa" icon. Another yellow callout box labeled "Listen" has an arrow pointing to the speaker icon. A larger yellow callout box labeled "Readers View Controls" has an arrow pointing to the entire stack of icons.

**Readers View**

**Same Internet page With Readers View**

howtogeek.com

## How to Fax a Document From Your Smartphone

Lowell Heddings

5-7 minutes



**Readers View is available on Smartphones, Tablets and PC's**  
Some devices require Readers View to be turned on in 'settings'.

You can [sign a PDF document from your phone, tablet, or any other computer](#) and email it off to someone. But some organizations still don't accept documents via email — you may need to fax documents instead.

No, you can't use your smartphone's phone connection as a fax machine or dial-up modem. You'll need to rely on an app or third-party service that does the faxing for you, just as you

# Restart vs Shutdown

## Windows 10

**Shutdown** - the PC will save its entire system state to disk, and restores it on power up;  
(<https://bitly.co/7s2r>)

saving its state so it can boot faster,  
the Hibernation file takes up lots of space on the hard drive/ SSD.

After reboot,

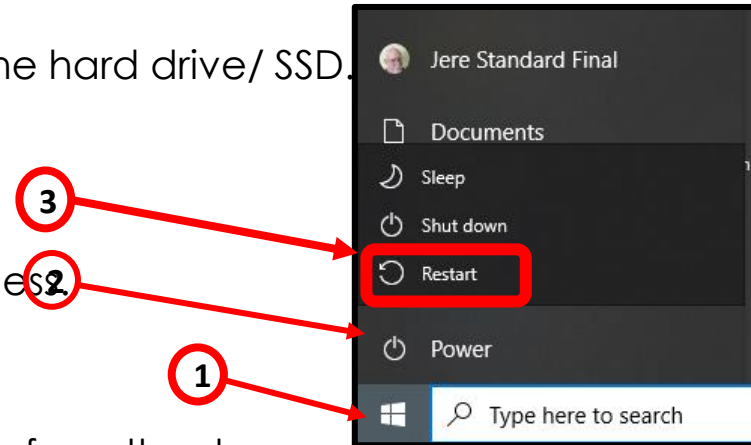
apps will re-open automatically,  
reloads the saved info,  
boots up more quickly,  
skipping the slower hardware initialization process.  
this feature is called "Fast Startup."

**Sleep** saves all the open files and programs in RAM,  
shuts down all other hardware components,  
restore the files, hardware, programs when wake up from the sleep.

### Restart

shuts down all Programs/Apps and reloads Operating System Programs/Apps.

"Restart should be used when:  
installing updates/software,  
and to resolve any errors. <https://bitly.co/7s3x>



# Send text messages via email.

To text someone by email, you'll need their cell phone number and carrier.

1. Open your email program and type out your message.
2. Type the contact's 10-digit phone number in the recipient box.
3. Follow the number with the @ symbol & the proper SMS gateway for the carrier.`
4. Next, send the message as you normally do.

## Here's a full list of email to text codes:

T-Mobile – [number@tmomail.net](mailto:number@tmomail.net) ; Virgin Mobile – [number@vmobl.com](mailto:number@vmobl.com) ;  
AT&T – [number@txt.att.net](mailto:number@txt.att.net) ; Sprint – [number@messaging.sprintpcs.com](mailto:number@messaging.sprintpcs.com) ;  
Verizon – [number@vtext.com](mailto:number@vtext.com) ; Tracfone – [number@mmst5.tracfone.com](mailto:number@mmst5.tracfone.com) ;  
Ting – [number@message.ting.com](mailto:number@message.ting.com) ;  
Boost Mobile – [number@myboostmobile.com](mailto:number@myboostmobile.com) ;  
U.S. Cellular – [number@email.uscc.net](mailto:number@email.uscc.net) ;  
Metro PCS – [number@mymetropcs.com](mailto:number@mymetropcs.com) .

# The End or Just the Beginning



Association of Personal  
Computer User Groups

Copy of this Presentation:  
[jminich@apcug.org](mailto:jminich@apcug.org)



**Thanks** for the opportunity to share with you.

Joyce & Jere wish you all a  
very safe and healthy year.



Association of Personal  
Computer User Groups



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Computer User Groups



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