

Printers

NEED TO KNOW

Inkjet printers are best for colour images, while black-and-white lasers print clearer text, if you don't want to print in colour.

INKJET PRINTERS

Inkjets squirt ink on to paper to produce images. The more separate ink colours they use, the more accurately they reproduce colours. Pricier models usually have separate cartridges for each colour; the cheapest have all the colours in one cartridge, so when one colour runs out you have to replace them all, which can be costly. See 'Ink cartridges', p49.

The paper also affects image quality because the ink is absorbed into it – the cheapest papers cause the ink to bleed. For the best results with photos, use plastic-coated photo paper (up to £1 for an A4 sheet).

LASER PRINTERS

Laser printers give more definition on text or fine detail in images. This is because the powder (or 'toner') they use doesn't bleed like liquid ink does, but melts and sticks to the paper. As a result, the type of paper hardly affects the quality of your print-out.

Lasers are faster and cost less to run than inkjets, although they're heavier and harder to set up. Their toner cartridges last a long time, but are quite tricky to replace, and the powdery toner can leak. If you get it on fabric, use cold water on the stain; warm water will melt it in and make it impossible to shift.



BEST BUYS

Our Best Buy printers produce clear text and realistic, high-quality photographs, and they can cope well with pages that combine the two.

Printing speed is important, too – although it's reasonable to expect an A4 photo to take a couple of minutes to print at the highest-quality settings, you shouldn't wait 10 minutes for your print-out to emerge. The Lexmark (17) took a staggering 22 minutes to print an A4 photo, and the Epson (12) took almost 10 minutes.

Best Buys also had manuals and software that were easy to understand. We also consider noise levels when in use, versatility and the quality of construction.

INKJET

As usual, Canon has come up trumps when it comes to inkjet printers.

The mighty **Canon Pixma iP8500 (1)**, £290 from Currys and Dixons, is the best printer we have ever tested overall because of its combination of speed, quality, versatility and ease of use. Like all our Best Buys, it supports PictBridge, which

lets you print directly from a digital camera.

The **Canon iP4000 (2)**, £110 from Argos, is a solid performer, providing an unbeatable combination of good-quality, fast printing and value for money.

The award for printing photos goes to the **Epson R800 (3)**, £240 from Jessops. It was described as 'exceptional' by our testers because of its ability to replicate subtle colour variations and depth. It also uses a clear cartridge to add gloss to pictures. However, it is expensive to run: running costs over three years are more than twice those of the Canon (1).

The **Canon iP5200 (4)**, £160 from Jessops, prints great photos and comes with comprehensive, clear documentation to get you started.

In some ways, though, we prefer the cheaper **Canon iP4200 (5)**, £119 from Jessops, which is better at printing black-and-white text, photos and charts than the 5200 (4). However,

Printers

INKJET PRINTERS

- 1 Canon Pixma iP8500
- 2 Canon Pixma iP4000
- 3 Epson Stylus Photo R800
- 4 Canon Pixma iP5200
- 5 Canon Pixma iP4200
- 6 HP Photosmart 8250
- 7 Canon Pixma iP2000
- 8 Canon Pixma iP1600
- 9 Epson Stylus Photo R220
- 10 HP Deskjet 5940
- 11 HP Deskjet 5440
- 12 Epson Stylus D88
- 13 Epson Stylus D68
- 14 HP Deskjet 3940
- 15 Lexmark Z735
- 16 Lexmark Z617
- 17 Lexmark Z517

BLACK-AND-WHITE LASER PRINTERS

- 18 Dell 1100
- 19 Canon Lasershoot LBP3000
- 20 Brother HL-2030

a Costs less than 0.5p

PRINTING 6X4-INCH PHOTOS

Using A4 paper is fine for letters and one-off photos. But what if you want to produce handy snaps like in the good old pre-digital days, when you exchanged a roll of film for a pile of pocket-sized prints?

Although you can print four photos on one sheet of A4 and then cut the paper up, it is a bit of a hassle, so you're better off buying some 6x4-inch paper. Twenty sheets of glossy paper for our Best Buy Canon printers cost around £5.

To use 6x4-inch paper, simply put the paper in the feeder tray, then slide the paper locators so that the sheets are gripped properly.

Your printer may recognise automatically that it's loaded with 6x4-inch paper, or you may need to tell it. You can do this via the printer-driver controls which you can access from the print option in whatever software you're using.



USING THE TABLE

We tested the latest releases from the biggest-selling brands.

Specification

Price For Best Buys, we give the cheapest widely available price as we went to press. Prices for other models are a guide to what you should expect to pay.

Mac Whether the printer works with Apple Macs using the OSX operating system. For older Macs, check the compatibility before you buy.

Printing performance

Quality/Speed Ratings are for printing a black-and-white text page, and an A4 photo. Black-and-white lasers are expected to do badly on photo quality.

Using

Ease of use Quality of manuals, and layout, size and clarity of buttons. **Versatility** Takes account of a variety of tasks, such as printing on to CDs, or

ability to print directly from a memory card or digital camera.

Print costs

B&W text/Colour graphics/Photo Costs for inkjets and lasers are for A4 pages. **Cost over 3 years** This is for one photo, three text pages and two colour graphics pages a week. We don't conduct all these tests with black-and-white lasers, as cost is not really an issue with them.

SCORE

Ignores price and is based on:
 Print quality and speed 55%
 Ease of use 20%
 Versatility 15%
 Environment and construction 10%

KEY

★ ☆ ○ ● ●
 Best —————> Worst
 ■ Best Buy

Specification		Printing performance				Using		Print costs (£)				Score
Price (£)	Mac	Text quality	Text speed	Photo quality	Photo speed	Ease of use	Versatility	B&W text	Colour graphics	Photo	Cost over 3 years	(%)
290	✓	★	○	★	★	★	★	0.02	0.06	0.71	138	78
110	✓	★	★	★	★	★	★	0.02	0.04	0.66	124	76
240	✓	★	●	★	★	★	○	0.03	0.04	1.46	282	74
160	✓	★	★	★	★	★	★	0.04	0.14	1.14	244	74
119	✓	★	★	★	★	★	★	0.03	0.13	1.09	226	73
150	✓	★	○	★	★	★	○	0.01	0.04	0.49	95	68
50	✓	★	★	★	○	★	★	0.04	0.10	0.70	157	66
49	✓	★	★	★	★	★	●	0.04	0.14	0.87	199	61
70	✓	○	●	★	○	★	○	0.05	0.34	1.41	348	61
80	✓	★	★	○	○	★	●	0.04	0.30	2.38	484	58
60	✓	★	★	○	●	★	●	0.00 ^a	0.03	1.79	292	53
70	✓	★	★	○	○	★	●	0.01	0.06	0.35	80	52
50	✓	★	○	○	●	★	●	0.04	0.08	0.34	97	49
50	✓	★	●	○	●	★	●	0.16	0.52	1.63	491	48
50		●	○	●	○	★	●	0.03	0.07	1.00	192	44
40	✓	★	★	●	●	○	●	0.27	0.20	1.74	458	39
35	✓	○	○	●	●	○	●	0.06	0.09	1.28	255	37
106		★	★	○	★	★	●	0.01	n/a	0.04	n/a	64
100		★	★	●	★	★	●	0.02	n/a	0.15	n/a	59
100	✓	★	★	●	★	○	●	0.00 ^a	n/a	0.04	n/a	58

it's slightly noisier and doesn't look as chic as the older, cheaper-to-run 4000 (2).

BLACK-AND-WHITE LASER

The **Dell 1100 (18)**, £106 direct from www.dell.co.uk only, stands out as a Best Buy because it manages to make a decent fist of all the different printing jobs we tried with it.

Despite being restricted to black and white, it printed charts and graphs particularly well, managing to make the blocks of different on-screen colours on our test page translate clearly into a black-and-white page.

The Dell's photo performance was pretty poor but you can't expect a black-and-white printer to do well here. However, you do expect a laser printer to do well with black-and-white text, and the Dell didn't disappoint, producing precise and clean-looking text quickly.

Mac users beware, though: the Dell works only with Windows so if you want a black-and-white laser printer the best option is the non-Best Buy Brother HL-2030 (20), £100 in Dixons.

OTHER OPTIONS

There wasn't much to shout about in this test, although the HP Photosmart 8250 (6) only just missed out on being a Best Buy. It was surprisingly cheap to run, costing a very modest £95 over our hypothetical three-year usage. Its text printing was among the best for inkjets, although its performance was less impressive on photos and charts. Images were too sharp, according to our testers, and some colour transitions – where an area of one colour adjoins another – lacked smoothness.

If you're on a tight budget, the Lexmarks (16 and 17) are acceptable basic printers, although if you can spend a little more, the Canon Pixma iP1600 (8) shows a significant increase in quality.



Memory cards

Some printers, including the HP (6), have a memory-card reader so you can print from your digital camera's memory card without using your computer. These printers usually have a small screen to select the shot to print. You can also use it for basic editing, such as cropping. With your computer on, you can use

the card reader to copy photos from the memory card to your hard drive.

Memory-card readers are convenient but it's usually better to use them in conjunction with your computer because the printer's software uses the computer to gain more file information, so it prints more accurately.



35 more printers on test

The main table shows newly tested models as well as Best Buys from previous tests – but 35 more printers from previous tests are still on sale. See www.which.co.uk/printers for full details.

Photo printers The table, right, shows results for the best-scoring small photo printers, for 6x4-inch colour snaps like those you used to get from the chemist.

Last report Sep 2005. Online prices are in *itals*

Model	Price (£)	Score (%)
Canon Selphy CP600	200	65
Epson PictureMate	100	61
HP Photosmart 325	130	59
Dell Photo Printer 540	79	59
Canon Selphy DS700	125	53
Lexmark P315	60	52