











TOP 10 BEGINNER & INTERMEDIATE DIGITAL CAMERAS

			Beginner digital cameras	Megapixel rating	Max resolution	Optical/digital zoom	Movie sound	File format	Storage media type/capacity	
										Optical viewfinder
1		Olympus Camedia C-300 Luxury Pack 0800 072 0070 www.olympus.com NEW	• £248 • 1-year warranty • First review Jan 03	3Mp	1,984x1,488	2.8x/3.6x	yes no	JPG/TIF	SmartMedia/80MB yes	
2		Fujifilm FinePix F401 Zoom 020 7586 1477 www.fujifilm.co.uk NEW	• £329 • 1-year warranty • First review Jan 03	2.1Mp (4Mp Super CCD)	2,304x1,728	3x/3.6x	yes yes	JPG	SmartMedia/16MB yes	
3		Ricoh Caplio RR30 01782 753 300 www.ricoh-cameras.co.uk NEW	• £231 • 1-year warranty • First review Jan 03	3.2Mp	2,048x1,536	3x/3.4x	yes yes	JPG/TIF (TIF for text only)	internal flash memory/8MB yes	
4		Nikon Coolpix 2000 0800 230 220 www.nikon.co.uk LAST MONTH 1	• £165 • 1-year warranty • First review Nov 02	2Mp	1,632x1,224	3x/2.5x	yes yes	JPG	CompactFlash/8MB no	
5		Kodak CX 4210 0870 243 0270 www.kodak.co.uk NEW	• £123 • 1-year warranty • First review Jan 03	2Mp	1,632x1,232	no/2x	no no	JPG	internal flash memory/16MB yes	

			Intermediate digital cameras	Megapixel rating	Max resolution	Optical/digital zoom	Maximum aperture	File format	Shutter speeds ISO sensitivity equivalent	
1		Canon PowerShot S45 0800 616 417 www.canon.co.uk NEW	• £453 • 1-year warranty • First review Jan 03	4Mp	2,272x1,704	3x/3.6x	f/2.8-f/4.9	JPG/RAW	0.1/1,500 400	
2		Kodak LS443 Zoom 0870 243 0270 www.kodak.co.uk NEW	• £329 • 1-year warranty • First review Jan 03	4Mp	2,448x1,632	3x/3.3x	f/2.8-f/9.6	JPG	0.1/1,000 400	
3		Fujifilm FinePix S304 Zoom 020 7586 1477 www.fujifilm.co.uk NEW	• £354 • 1-year warranty • First review Jan 03	3.2Mp	2,048x1,536	6x/3.2x	f/2.8-f 4.8-f/8.2	JPG	0.1/1,500 100	
4		Nikon Coolpix 4500 0800 230 220 www.nikon.co.uk LAST MONTH 1	• £495 • 1-year warranty • First review Oct 02	4Mp	2,272x1,704	4x/4x	f/2.6-f/5.1	JPG/TIF	0.1/2,300 800	
5		Fujifilm FinePix F601 Zoom 020 7586 1477 www.fujifilm.co.uk LAST MONTH 2	• £510 • 1-year warranty • First review Jul 02	6Mp (3.1 true)	2,832x2,128	3x/4.4x	f/2.8-f/4.5	JPG	0.1/2,000 1,600 (at 1,280x960)	

TOP 10 BEGINNER DIGITAL CAMERAS

1 Olympus Camedia C-300 Luxury Pack



The Camedia C-300 combines good features and value for money with an impressive specification list. It's an excellent model even without the Luxury Pack, so this added feature makes the C-300 without a doubt our Best Buy this month. Powering the great image quality is a

3Mp (megapixel) CCD (charge-coupled device) that supports a top resolution of 1,984x1,488. The C-300's images didn't contain the detail captured by the Ricoh RR30 or Fujifilm F401 but the colour palette was excellent on photos taken inside and out. High-quality Jpeg shots are up 1.5MB each, so you need a lot of storage space and this is where the Luxury Pack excels.



It provides a 64MB SmartMedia card and four AA NiMH rechargeable batteries with recharger.

2 FujiFilm FinePix F401 Zoom



Coming in at second place and receiving a Recommended award is the FinePix F401 Zoom. It offers an excellent combination of compact style, superb functionality and good digital photography for a reasonable price in a total out-of-the-box solution.

The FinePix has an effective pixel range of 2.1Mp (megapixel) but the third-generation Super CCD (charge-coupled device) extracts 4Mp from the sensor. It's worth noting that this is without the aid of interpolation so the photography retains a natural look, rather than ending up suffused with unnatural colours. The picture quality is, without a doubt, better than other 2Mp cameras in this class – shame FujiFilm deigned not to offer a TIF option to complement the Jpeg shots.

Other specifications that impressed us were the ISO equivalent settings. If you're taking photographs up to a resolution of 1,280x960 you can set the camera up to an equivalent film sensitivity setting of ISO 1,600 – an impressive feat even in high-end digital photography. This allows you to shoot in low-light conditions without flooding the frame with a glaring flash.

The 16MB SmartMedia card is generous at this price. In fact, the whole bundle is generous because this version contains the premium kit, so it comes with an adapter for the rechargeable lithium battery, docking station with USB connection, good software and a useful case. Our only complaint is that the small lithium battery doesn't have the lifespan of larger models, so it's worth buying a spare.

While the FinePix F401 Zoom lacks the stylistic grace of its more expensive sibling, the F601, it retains the brushed steel finish and the autoslide lenscap for protection.

The compact chassis is almost square and weighs a mere 185g – if you like to feel you have an expensive piece of hardware in your hand then the F401 may disappoint, but for anyone looking for a shirt pocket or handbag camera, this is a great choice.



	Battery Recharger supplied	High/low res storage capacity	LCD size Lens protection	Dimensions (wxdxh) Weight	Software and extras
	4 x NiMH rechargeable	30/663	1.5in	118x50x66mm	Camedia Master 4.0
	yes		manual slide cover	240g	
	1 x lithium rechargeable	9/122	1.5in	85x28x69mm	Fuji FinePix viewer
	yes		autoslide cover	185g	
	2 x AA alkaline	5/52	1.5in	114x55x33 mm	Ricoh Gate L
	no		autoslide cover	150g	
	4 x AA alkaline	8/121	1.5in	108x38x69mm	Nikon View 5.0
	no		autoslide cover	190g	
	2 x AA alkaline	17/72	1.5in	109x40x64mm	Kodak EasyShare
	no		autoslide cover	200g	

	Storage media type/capacity	High/low res storage capacity	LCD size Lens protection	Dimensions (wxdxh) Weight	Software and extras
	Optical viewfinder				
	CompactFlash Type II/32MB	27/663	1.8in	112x58x42 mm	Camedia Master 4.0 ArcSoft Camera Suite 2.0, Solutions Disc
	yes	1 x lithium rechargeable/yes	manual slide cover	323g	
	internal memory/16MB	12/48	1.8in	109x38x62mm	Kodak EasyShare
	yes	1 x lithium rechargeable/yes	autoslide cover	260g	
	xD-Picture card/16MB	12/122	1.8in	100x69x77mm	FinePix viewer, image mixer
	no	4 x AA alkaline/no	plastic lenscap	295g	
	CompactFlash Type II/16MB	8/229	1.5in	130x50x73mm	Photoshop Elements, Fotostation
	yes	1 x lithium rechargeable/yes	plastic lenscap	360g	
	SmartMedia/16MB	6/122	1.5in	72x34x93mm	PhotoDeluxe, ActiveShare, FinePix viewer
	yes	1 x lithium rechargeable/yes	autoslide cover	220g	

The C-300 doesn't have the stylistic prowess of some of its competitors – it's housed in a simple body that's too large to be called truly compact. The only downfall was its lack of an accessible delete option and the design of the slide cover. You have to wait for the lens to fully retract until you can shut the cover properly but the lens doesn't start retracting until you start shutting the slide cover, so it's easy to bang the side of the lens. That said, it has been designed with ease of use in mind

and Olympus has kept hardware buttons to a bare minimum. There's also a wealth of functionality on board, such as white balance presets, exposure control and a choice of ISO settings. The C-300 is navigated with a combination of the four-way directional pad and a corresponding virtual jogdial. The Best Buy Camedia is a responsive model that processes images quickly and has enough features to appease buyers looking for more than a point-and-shoot digital camera.

3 Ricoh Caplio RR30

The Caplio narrowly missed out on second place but it's still a great budget camera. While we think Ricoh made some odd feature decisions you can't knock the fact that the RR30 gives you the most megapixels for minimum money. The compact Ricoh has a 3.2Mp (megapixel) CCD (charge-coupled device) with a top resolution of 2,048x1,536 and a 3x optical zoom. The detail on the shots is the best in the Beginner chart, so it's a shame that the top quality TIF option only works in monochrome because it's set up to be used for photographing text documents.

There are no extras in the bundle – just some simple software and two AA alkaline batteries to power the camera. This decision was probably made to keep the RR30's size down but means it runs out of juice quickly. On the up side it supports lithium batteries. Ricoh opted for 8MB of internal memory but sensibly added space for a secure digital card which you will have to buy. The RR30 has a loud motor but the quick access buttons and impressive array of features make up for it.



4 Nikon Coolpix 2000

Dropping four places is the Coolpix 2000 which combines value for money with great features and ease of use. The 2Mp (megapixel) camera offers a maximum resolution of 1,632x1,224 and a 3x optical zoom. Shot quality wasn't as sharp as the Camedia's, but images were still detailed. There's no optical viewfinder, so shots are composed using the LCD which can drain the four AA batteries. We'd therefore recommend investing in some rechargeable nickel cells.



5 Kodak CX 4210

The cheap-and-cheerful CX 4210 can't match the other contenders for functionality but makes an excellent first-time buyers' model. The 2Mp (megapixel) CCD (charge-coupled device) takes Jpeg-only shots and there's a generous 16MB of internal memory. There's no optical zoom and only two AA batteries, but Kodak hasn't scrimped on the most important feature – image quality.



TOP 10 INTERMEDIATE DIGITAL CAMERAS

exclusive
PC ADVISOR
BEST BUY
2003

1 Canon PowerShot S45
For the January 03 issue we had an exclusive look at Canon's replacement for its PowerShot S40. While the S45 is quite pricey, it does have good specifications and is the most feature-rich compact camera we've had in our charts. Add Canon's generous software bundle and you get this month's Best Buy.

The S45 doesn't have the style clout displayed by other contenders but the metal finish and svelte dimensions make it a sturdy compact model.

It sports a new Digidig processor which means it's a speedy operator and has increased

battery life. Fortunately it comes with a large rechargeable lithium battery.

The 4Mp (megapixel) CCD (charge-coupled device) has a top resolution of 2,272x1,704 and the 32MB CompactFlash card (which can store 27 high-resolution shots) can be replaced with a Microdrive. Canon kept a choice of resolutions and three compression rates, but if you want to opt for the highest quality there's a RAW uncompressed file format – each shot takes up to 3.5MB on this setting, so it's worth getting extra storage.

The S45 offers automated photography but it comes with a truly impressive array of manual configurations. Open the menu or change the jogdial and you have control over focus, custom exposure, focus bracketing, ISO settings, aperture and shutter priority. If you want to use the PowerShot to its full potential it's worth going through the manual, though.



How we test

We take a lot of contributory factors into account when assessing how good a digital camera is and one of the most important considerations has to be image quality. We run a series of tests to assess image quality on all our reviewed digital cameras and the following is a breakdown of our evaluation process.

Digital cameras suffer from aliaising. This is the jagged line effect that shows up when CCDs (charge-coupled devices) don't have a high enough megapixel count to hold the fine detail in an image. We enlarge photographs to see how much aliaising occurs and also to see how the camera copes with Jpeg compression under strong contrasts.

Colour reproduction is probably the second most important factor, so we test cameras under a range of conditions to see how well they cope. Some devices oversaturate pictures or produce unnatural hues suffused with artificial colours. In one test we try to fit the whole spectrum of colours, preferably naturally occurring – such as a bunch of flowers or a bowl of different coloured fruit – to see how well the camera reproduces them.

We take close-up indoor portrait shots with and without the flash on high and low resolution settings. These are typical shots that most consumers will take and it gives us an indication of how well the digital camera picks up such things as skin tone colour, detail, tonal contrast and white balance. If the device can't cope with the flash illumination there's often a blue or yellow hue to the image. Zooming in on hair also demonstrates how much the camera suffers from aliaising.

We look at outdoor distance shots to see how well the camera copes with natural lighting and if it's good at picking up detail from faraway subjects. Lastly, we check to see how much discrepancy there is between the photograph we've taken and what we can see through the viewfinder.



2 Kodak LS443 Zoom

Kodak effortlessly branches out into the Intermediate market with the LS443 Zoom, which follows Kodak's rules of ease-of-use and value-for-money while offering brilliant image quality. We'll point those looking for full control of digital photography to Canon's S45, but for everyone else this is a great buy. The 4Mp (megapixel) CCD (charge-coupled device) boasts a top resolution of 2,448x1,632 and the metal chassis complements its compact frame. Kodak has included a 3x optical lens and sticks with 16MB of internal memory but has left space for a secure digital or multimedia card.

Manual configurations are limited but you do have a choice over the ISO setting, metering and exposure as compensation. The LS443 takes care of everything else and does a great job. The good-looking images we took held the sharp detail better than more expensive models.

The LS443 Zoom is part of Kodak's EasyShare system so it's a cinch to operate. It has quick buttons on the hardware for easy access and a docking station that serves to charge the lithium battery. The LS443 can be used without having to refer to the manual and we can see Kodak's traditional user base enjoying the combination of simplicity, image quality and value for money.

3 FujiFilm FinePix S304 Zoom

Essentially the S304 Zoom is a high-end beginner camera for novices. True photographers may balk at its lack of options although its impressive image quality will appeal to everyone. The S304 has the best zoom at 6x optical and the 3.2Mp (megapixel) CCD (charge-coupled device) is good but can't compete with the contenders. A 16MB xD-Picture card provides storage and holds 12 high resolution



Buying advice

- **Megapixels** The amount of megapixels on a Beginner digital camera varies. The lowest you should expect is 2Mp unless you're paying under £150. There are 3Mp models being released that cost less than £300 and we've even seen a 3.2Mp digital camera for £231. If you're paying between £300 and £700, expect a model with a minimum of 3Mp. Pay upwards of £700 and you should get 4Mp but it's unlikely you'll get any more for your money. An exception is the FujiFilm FinePix F601 Zoom which uses a Super CCD (charge-coupled device) to extract 6Mp out of the 3.1Mp sensor.
- **Manual configurations** Many Beginner digital cameras take care of all aspects of photography, so all you have to worry about is pointing and shooting. That said, you can track down a device that offers manual configurations, but it's more likely you'll get a model with presets for a range of photographic conditions. Intermediate cameras should at least offer you control over exposure, ISO sensitivity, white balance and metering options.
- **Storage** It doesn't really matter what type of storage you get as long as the camera is bundled with plenty of it. Sadly, though, this is rarely the case. Beginner digital cameras come with 8MB to 16MB as standard and even most Intermediate models have 16MB, with 32MB at the top end of the market.
- **Peripherals** There are few total out-of-the-box digital camera solutions that cost less than £350, but at this price point you'll end up with some decent bundled extras. If don't get a good peripherals bundle then pay out for the optional extras – rechargeable batteries are vital. Lithium ones are the best but most expensive, so you could settle for nickel – avoid alkaline at all costs.
- **Zoom** As with Intermediate cameras, there are few Beginner models on the market offering more than a 3x optical zoom. Shop around for a 4x optical zoom and consider any digital zoom capabilities a bonus.

images. Fuji claims that the card uses less power to store images and this is one of the reasons the camera lasts longer on the bundled four AA batteries.

Stylistically the Fuji S304 Zoom is beautiful. Our only grumble is the plastic lens cover that isn't built in. Although mainly automatic, there is a jogdial with fairly limited manual settings. We were surprised to see a high-end feature such as Aperture Priority for controlling depth of field combined with a paltry ISO sensitivity equivalent of 100, but it copes well in low-light conditions without the flash.

4 Nikon Coolpix 4500

Our ex-Best Buy slips to fourth place this month but remains the camera for professional consumers. While the split-swivel chassis is unusual it makes it easy to take shots from difficult angles and this version's compact magnesium alloy body is tougher than its predecessor. The 4Mp (megapixel) Coolpix offers a maximum resolution of 2,272x1,704 and a 4x



optical zoom. Manufacturers rarely bundle enough memory so we weren't surprised to see that Nikon has opted for just a 16MB CompactFlash card. This is fine for low-resolution shots but it only provides storage for eight high-resolution Jpegs or one TIF shot.

5 FujiFilm FinePix F601 Zoom

Showing its age but not yet out, the FinePix F601 hangs in at last place. A well laid-out navigation and menu system on the clear 1.5in LCD (liquid crystal display) means it's simple to use and, although it has a 3.1Mp (megapixel) CCD (charge-coupled device), it uses Fuji's Super CCD technology to extract 6Mp resolution from the sensor. Its 4.4x digital zoom displays little image degradation even at full stretch, while wider ISO settings, higher shutter speeds and a better flash distance help this model cope with a diverse range of photographic conditions.

