

Read the extract carefully, then answer the questions in the answer booklet provided.

*These articles were written for a magazine celebrating the Golden Jubilee of Queen Elizabeth in 2002. The first reflects on the advances in science and technology; the second looks at changes in food tastes over the 50 years of her reign.*

#### Talking about a revolution

Sitting in my old, heavily-beamed cottage, it seems that the 21st century is a long way off, as I gaze over miles of green English countryside. But it's due to a revolution that I have the freedom to live here, high in the Chiltern Hills – a revolution in information and electronics.

5 When the Queen acceded to the throne, the information explosion hadn't even been predicted. Computers were the size of buses, and phoning abroad was a tricky business. Now I can e-mail anywhere in the world in an instant. If I want to check a fact, I go into a search engine on the internet. When a radio station wants an interview, I re-route my ISDN telephone line – which usually brings the internet into my computer – to a mixer. To me, this is one of the greatest advances in  
10 science and technology that has taken place since 1952. And there have been countless others. Fifty years ago, Britain was a very different place; one that our Victorian and even Georgian ancestors would have recognized. People lived life much as they had in the past.

In fact, a lot of people hanker after those "good old days", but in many respects they are an illusion. Advances in medical science over the past 50 years have meant that we are living longer,  
15 and in many cases, more healthily. We're learning to control disease. And we are getting a better understanding of how life itself works.

Part of the reason for our heightened concern for the environment of both our nation and our planet is because we can accurately monitor changes from space. From the vantage-point of satellites – many built in Britain – we can now see the devastation to the rain forests, or industrial  
20 pollution, as it happens. Satellites have brought many far-reaching changes into our daily lives. Instant communications, a choice of hundreds of television channels and more accurate weather forecasts are all the result of a host of satellites patrolling the high frontier.

Space is, of course, another major breakthrough of the past 50 years. When England's Astronomer Royal heard rumours that Russia had launched Sputnik in 1957, he dismissed them as  
25 "utter bilge". What would he have thought, just 12 years later, when men were walking on the Moon? Today, we have sent spaceprobes to every planet of our Solar System except distant Pluto; around 400 people have flown in space; and we're on the dawn of space tourism, when anyone with the necessary money will be able to see the Blue Planet from orbit.

There will be places where we can never go, but that hasn't stopped astronomers from  
30 performing some exquisite hands-off detective work. During my lifetime, which virtually coincides with the Queen's reign, I have seen a breakthrough in our knowledge of the cosmos as dramatic as when Galileo first pointed a telescope to the heavens.

Thanks to cutting-edge technologies, new windows on the Universe have opened up. Radio astronomy, as exemplified by the huge telescopes at Jodrell Bank and Cambridge, is one of the  
35 British-driven initiatives which look at the cosmos that light does not reveal. So too, does X-ray astronomy – also pioneered in Britain – which seeks out cosmic violators such as black holes and exploding stars. Over the past 50 years, British astronomers have helped build up a picture of the way our Universe works – and these discoveries are being used by physicists to build up a description of it and of what makes it tick.

*Dr Heather Couper (broadcaster and writer on astronomy and science)*

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