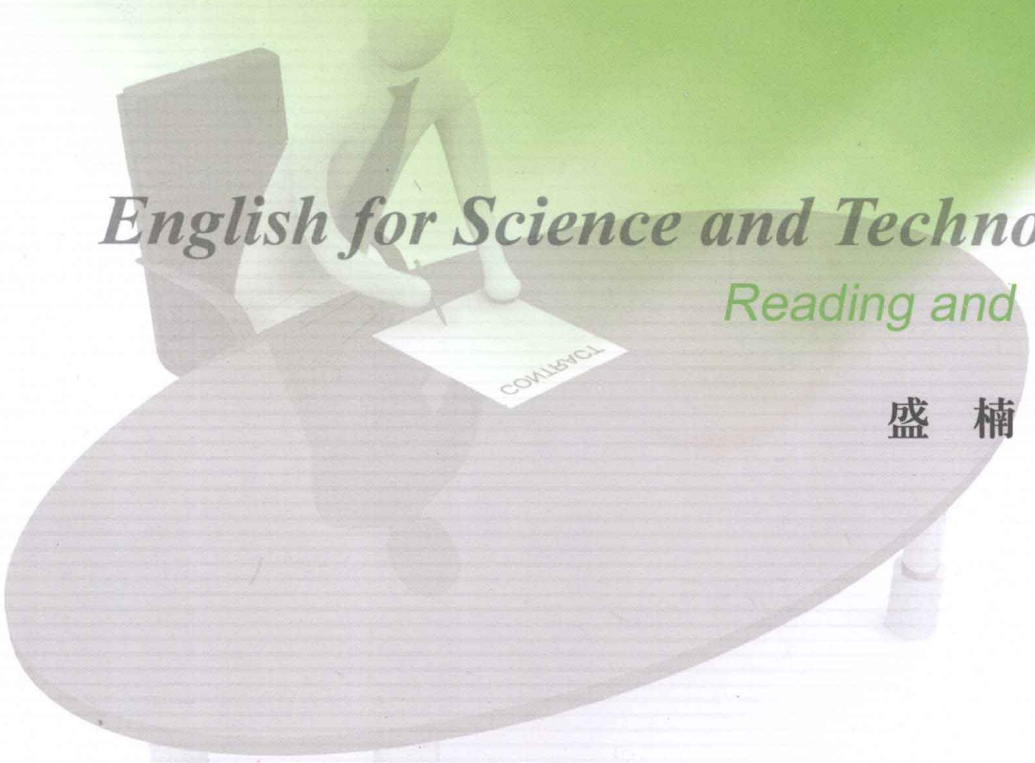
科技英语强化阅读与写作



English for Science and Technology: Reading and Writing

盛 楠 ◎ 主编

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强化阅读与写作

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前　言

《科技英语强化阅读与写作》是旨在促进学生课后自主学习的教材，全书分为阅读篇和写作篇两大部分。阅读篇分为精读和泛读，精读部分精选各类科技英语文章27篇。精读部分的阅读文章均配有根据课文特点设计的阅读理解练习，题量适中，题型丰富，有针对性地考查大学英语教学大纲规定的需要掌握的各项阅读技能，如信息搜索，领悟主题思想，逻辑关系，细节判断，把握作者态度和写作意图，推测生词等，可以培养学生良好的阅读习惯，提高阅读水平。另外，阅读文章题材全面，内容新颖，与现实生活紧密相关，具有时代性，可以增加学生的阅读兴趣，丰富知识面。泛读部分的阅读文章目的在于巩固词汇，扩大阅读量，没有设计相关阅读练习，教师可以将这部分的文章选作考试材料，鼓励学生完成该部分的阅读任务，这样不仅可以促进学生课后的自主学习，也有利于培养他们掌握正确的阅读策略和有效的阅读方法。

写作部分主要是培养学生英语句子和段落写作能力，以示范讲解的方式分析英语段落发展的特点和要求，各部分都有课后练习，练习设计循序渐进，有利于学生领会写作过程中需要注意的问题。写作部分的讲解可以帮助学生全面理解科技英语文章的文体和词汇特点，提高科技英语的写作水平。该部分从实用性的角度出发，讲解采用浅显易懂的文字，还提供了操作性很强的写作模板，便于学生课后完成写作任务。写作话题新颖，反映学生的学习和生活，也及时反映社会热点问题，便于学生积累和发挥生活知识，培养社会责任感，有助于他们更好地完成写作的任务。

本教材在阅读和写作练习设计方面具有独到性，教师在教学实践中积累了丰富的经验，大量、形式多样的练习可以强化阅读和写作能力的培养，提高学生的阅读和写作兴趣，这种编写体例在同类教材中比较少见。因此，对于英语教材建设的专家和同仁，本教材在编写理念方面的尝试和努力，可以提供相关参考。

本教材全书由盛楠策划，阅读部分的编写由王莎莉、邓富虎、宋惠珍、成利和盛楠共同完成，写作部分由盛楠完成。

《科技英语强化阅读与写作》的出版是应用英语教研室全体教师智慧和汗水的结晶，体现了团结合作的精神，是我院英语教学改革的重要成果。感谢支持本书出版的领导、同事、学生、亲人和朋友，你们的支持会一直鼓励着我们，再接再厉，精益求精，更上层楼！

盛　楠

2010年8月19日

于武汉船舶职业技术学院

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Part 1 Intensive Reading

Text 1 Meeting Internet Friends

This doesn't mean to scare anybody off the idea of making "real-life" friends through the Internet. Countless relationships, even marriages, have been formed on-line and parlayed successfully into what net speak calls "IRL" (in real life). The highly publicized cases of people turning out to be not quite who they said they were (at best) or downright dangerous (at worst) are just that: the highly publicized exceptions.

Still, that doesn't mean you shouldn't exercise all reasonable cautions. The victims you've read about in the news were not unlike yourself: they'd formed a relationship on-line, trusted the other person, and trusted the judgments they were making with regards to that person. Intuition is a valuable thing, but it can't take the place of "hard evidence".

One of the things people most frequently overlook when trying to assess whether or not their new on-line friend is really on the level is his or her e-mail or message posting habits. A person who claims to work a nine-to-five job is probably going to have predictable e-mail habits that mesh with those working hours. If your nine-to-five friend has never e-mailed you before 11 a. m. , something might be a bit off. The same goes if the person is frequently on-line very late, but still claims to have regular working hours. At some point, you should notice certain patterns, and if they don't match up to what the person tells you about his life, watch out. A person who always e-mails from work but never from a home computer may have a relationship or living situation they'd rather keep hidden from you, so be wary of unusual excuses about e-mail habits.

You have probably heard this elsewhere, but it can't be emphasized enough: your first meeting should be in a public place, and you should tell a friend about it. You might even want to bring along a friend for an extra margin of safety, or make the meeting a sort of impersonal one: arrange to get together at a large-scale social gathering if possible. The intensity of on-line relationships is such that you may feel a great connection to somebody you barely know at all in the "real world", so be wary of any rush towards intimacy on any level. Think of things in terms of introducing the person to your friends rather than moving across the country!

There are obvious exceptions, and these should not be your sole criteria, but they are useful if the person you're going to meet "IRL" has a well-established on-line presence. Look for things like a homepage with facts (everything from a resume to a picture of the person in the city they live in) rather than abstract "I enjoy..." information that could apply to anybody. A real name that can be verified is much more "trustworthy" than a person who exists simply as a "screen name". Look to Usenet—you can search Usenet discussions on a variety of on-line archive services—and see if that person has a history of postings there (and, of course, see what kind of history!). If they've

participated in a discussion group for any length of time, the odds are good that they've met with others from the group "IRL". Don't be afraid to ask other people for a bit of background — the person with nothing to hide should not have a problem with this. If you can't find any "references" — no history of on-line activity, no other on-line friends — be exceptionally cautious.

Earlier on, we almost dismissed intuition. Don't. While it should never be your sole guide, always err on the side of caution when it comes to gut feelings. People make you feel comfortable or uncomfortable for reasons, and you shouldn't ignore those feelings. Again, a person who is genuinely worth your time will understand. You might cut a meeting short by apologizing and saying that you had a good time, but don't want to take things too far on the first meeting — no other explanation should be necessary.

All this research, intuition and second-guessing of intuition, and considering chaperones and so on might seem a bit paranoid and over-the-top, but you shouldn't be embarrassed about keeping your own safety paramount. A reasonable combination of common sense and your own discretion will lead to a lot of good friendships, and keep you and trouble well separated.

Reading Comprehension

Ⅰ. Do the following statements agree with the information given in the passage? Write:

TRUE *if the statement agrees with the information.*

FALSE *if the statement contradicts the information.*

1. There is no need to be scared of the online friendship, because many internet friends even got married.
2. What you do and think may resemble the victims in the news.
3. Your on-line friends' e-mail or message posting habits may reveal their secrets.
4. Most people can control the level of intimacy with their on-line friends.
5. A person who leaves no traces on the internet deserves caution.
6. Intuition is completely unbelievable in judging an on-line friend.
7. Being too cautious on the internet make you lose the chance to meet real friends.

Ⅱ. For questions 1-4 below, choose the best answer from the four choices marked A, B, C and D.

1. What does the author mean by saying "Intuition is a valuable thing, but it can't take the place of 'hard evidence'"?
   A. We can judge whether an on-line friend is dangerous or not by intuition.
   B. There is no evidence to prove that intuition is valuable.
   C. We should judge an on-line friend by what we see in real life instead of intuition.
   D. Intuition may help us sometimes.
2. According to the passage, who may be considered to be a safe internet friend?
   A. A person who claims to work a nine-to-five, but never e-mails you before 11 a. m..
   B. A person who claims to have regular working hours and e-mails you regularly during the working hours.
   C. A person who claims to have regular working hours, but is frequently on-line very late.

D. A person who always e-mails from work but never from a home computer.

3. What is said about the first meeting with your on-line friends?

A. You could go to their home.

B. You should meet them alone.

C. Bring a friend with you may make them feel embarrassed.

D. It is suggested that you meet them in a public place and bring along a good friend.

4. All the following can help you judge an on-line friend, except _____.

A. a resume

B. a picture of the person in the city he live in

C. a screen name

D. a reference on Usenet

Notes

Usenet：即新闻讨论组，是 Uses Network 的缩写。Usenet 是全世界最大的电子布告栏系统。在这个布告栏上任何人都可以贴布告，也可以下载其中的布告。Usenet 用户写的新闻被发送到新闻组后，任何访问该新闻组的人都有可能看到这个新闻。Usenet 除了新闻讨论之外，另外一个重要的功能，就是下载软件和电影资源。Usenet 资源不仅数量丰富而且范围很广泛，有很多通过普通下载方式无法得到的资源在 Usenet 中都可以得到。目前在国内 Usenet 下载只有少数高端人群在使用，主要因为 Usenet 上的资源大多数是英文的或者其他语言，所以要求用户具有一定的英文水平，并且需要付费。

Vocabulary

parlay ['pɑ:li] *vt.* 将(彩头连赌本)再下作赌注

netspeak 网络语言

publicize ['pʌblisaiz] *vt.* 宣传；公布

downright ['daunrait] *adj.* 完全的

intuition [ˌintju'iʃən] *n.* 直观(能力)，直觉

overlook [ˌəuvə'luk] *vt.* 看漏；忽略

mesh [meʃ] *vt.* & *vi.* (使)相配；匹配

watch out 小心

impersonal [im'pə:sənəl] *adj.* 不受个人情感影响的；客观的

intimacy ['intəməsi] *n.* 亲密

sole [səul] *adj.* 单独的，唯一的

criteria [krai'tiəriə] *n.* (criterion 的复数)(批评、判断的)标准，准则

resume ['rezju:mei] *n.* 简历

abstract ['æbstrækt] *adj.* 抽象的

verify ['verifai] *vt.* 证实，核实

trustworthy ['trʌstˌwə:ði] *adj.* 值得信赖的，可靠的

archive ['ɑ:kaiv] *n.* 档案，文件；档案馆

err on the side of caution (谚语) 过分谨慎

gut [gʌt] *adj.* 本能的，直觉的

chaperone ['ʃæpərəun] *n.* 陪伴，监督人

paranoid ['pærəˌnɔid] *adj.* 患妄想狂的；多疑的

paramount ['pærəˌmaunt] *adj.* 最高的；首要的

discretion [di'skreʃən] *n.* 慎重，谨慎

Text 2 Computers

Computers are electronic machines for processing data. Data are pieces or items of information that have been properly prepared so that the machine can work with them. Processing means handling or manipulating the material that has been presented to the machine in such ways as performing calculations, classifying information, or making comparisons. A computer is made of millions of electronic devices that can store the data or switch them through complete circuits with different functions at incredible speeds.

In only a short time, computers have profoundly changed the way in which many kinds of work are done. Indeed, they have created whole new areas of work that did not exist prior to their development. We have all heard of computers plotting the course of rockets, preparing bank statements, predicting elections, forecasting weather, and so forth. Computers do many tasks for us that would be extremely difficult if we do not have them. Computers take routine tasks and do them in a fraction of the time it would take a man or even a team of men to do them.

Many people imagine that a computer is a very large adding machine. Certainly a computer can function in that way, but this is a very restricted view of the nature of a computer. The message of a familiar advertisement is that machines should work, but men should think. This is the basic philosophy of computer science, even in the advanced states of computer technology.

Despite the scientific basis of computers, many people are awed by the way they function. This is probably due to the fact that computers perform very complex operations in a very short time—seconds or even fractions of a second. In the modern world, people are often impressed with speed.

Devices such as traffic lights and telephones are a part of modern life. In a sense they are computers too. All computers have several features in common, regardless of make or design. Information is presented to the machine, the machine acts on it, and a result is then returned. The pieces of information, or data, that are presented to the machine are called the input. The internal operations of the machine are called processing. The result that is returned is called output.

The telephone works in just that way. The input is dialing a number; the processing is the switching system that locates the number that has been dialed; and the output is completing the call. A traffic light works in the same way. A predetermined electrical timing impulse is given to the light (the input); the switch inside the mechanism selects a color (the processing); and the light changes color (the output).

These three basic concepts of input, processing and output appear in almost every phase of human life. In school the input is the subject matter, the processing is studying, and the output is knowledge. When someone cooks a meal, the input is the uncooked food, the processing is the cooking itself, and the output is the completed meal.

The input, processing and the output are determined by a human agent. This person is called the programmer. His job is to determine what information is needed and what operations the computer must perform in order to solve a problem. He determines how the information is to be processed in order to obtain the desired result.

Many everyday tasks can be viewed as programs; that is, they can be worked out in a step-by-step plan.

Reading Comprehension

Ⅰ. Complete the following sentences with the information given in the text.

1. _____, _____, _____ are ways for computers to process stored data.
2. Computers have created many new jobs such as _____.
3. Many tasks would be very difficult for us _____.
4. The basic philosophy of computer science is _____.
5. Many people are surprised at computers because _____.
6. Computers can be viewed as _____. But they aren't restricted to this.
7. According to the passage, devices such as _____, _____ work in the same way as computers.
8. The passage uses _____ examples to explain _____, _____, _____ are three basic concepts in our life.

Ⅱ. Fill in the blanks in the following text. Pay attention to the verb forms.

replace	solve	deal	interact	recognize
book	pay	access	convert	use

Human telephone operator will _____ by talking computers. These computers will _____ speech, ask us what information we need, _____ the information from a database, and _____ it to speech. If we want to _____ a flight or _____ a bill by phone, we will interact with a talking computer to do so. Of course, this won't happen until all the technology is in place, but when it is we will soon get used to _____ with computers in this way. Human telephone operators will _____ only for more complex operations such as _____ with complaints or _____ concrete problems.

Ⅲ. Translate the following phrases into Chinese.

1. processing data _____
2. adding machine _____
3. computer science _____
4. computer technology _____
5. electrical timing impulse _____

Ⅳ. Translate the following sentences into Chinese.

1. Processing means handling or manipulating the material that has been presented to the machine in such ways as performing calculations, classifying information, or making comparisons.

_____

_____

2. A computer is made of millions of electronic devices that can store the data or switch them through complete circuits with different functions at incredible speeds.

3. We have all heard of computers plotting the course of rockets, preparing bank statements, predicting elections, forecasting weather, and so forth.

4. This is probably due to the fact that computers perform very complex operations in a very short time—seconds or even fractions of a second.

5. His job is to determine what information is needed and what operations the computer must perform in order to solve a problem.

Vocabulary

manipulate [mə'nipjuleit] *vt.* 熟练控制(操作)
plot [plɔt] *vt.* 划分，绘图，密谋 *vi.* 密谋，策划
fraction ['frækʃən] *n.* 小部分，片段，分数
awed [ɔ:d] *adj.* 充满敬畏的
impulse ['impʌls] *n.* 推动，刺激，冲动，推动力 *vt.* 推动

Text 3 How to Predict the Weather Yourself

Tired of unreliable weather forecasts? Don't depend on the nightly news to get your weather report. No matter what season it is, you can look out your own front door and get weather clues from Mother Nature herself. Here's how.

Years before Doppler radar, computers, or weather balloons were invented, people could predict the weather by watching the changing landscape around them, especially by looking skyward. While scientists discount the weather lore that has been passed down for generations, much of it does have a scientific explanation.

For instance, the old saying, "Red sky at night, sailors' delight; red sky in the morning, sailors take warning" is indeed an accurate way to predict the day's weather. A red sky at night means dry weather is on the way. The sky is red because the sun is shining through dust particles being pushed ahead of a high pressure system bringing in dry air. If you see a red sky in the morning, be sure to take your umbrella when you leave the house. The red color in a morning sky is also caused by sun shining through dust particles, but the dust is being pushed out by an approaching low pressure system that is bringing in moisture. This particular weather lore goes back to biblical times.

Other weather clues you can find by looking skyward include:

A rainbow. Depending on where it is, a rainbow can tell you about impending weather. A morning rainbow in the western sky indicates approaching rain, while a rainbow at sunset indicates that the rain is leaving and fair weather is on the way.

The moon. A bright, clear moon means wet weather is on the way. Low pressure clears dust out of the air ahead of it. The particle-free air makes the moon appear closer to the earth and more sharply focused. A halo or ring around the moon also indicates rain. The halo is caused by light shining through cirrostratus clouds, which are an indication of a warm front with lots of moisture getting ready to move through.

Clouds. Reading cloud formations is an accurate way to predict the weather. Cumulonimbus clouds forming early in the day and increasing in size throughout the day, increase the chances of severe weather. However, the giant sack-like appearance of a mammatus cloud, formed by sinking air rather than rising air, can look threatening but is actually a sign that a thunderstorm is dissipating. Cirrus clouds found high in the atmosphere and pulled into long streamers resembling the tail of a mare or altocumulus clouds that look like mackerel scales forewarn bad weather within 12 to 36 hours. And, you can expect warmer weather when there's cloud cover on a winter night. That's because tiny water droplets that make up clouds radiate more heat than gases in clear air do.

You don't only have to use your eyes to get weather clues from Mother Nature. Open your ears, too. Sound in nature is louder before stormy weather because, instead of traveling up and out into the atmosphere, sound waves are bent back to the earth and their range is extended. Bird calls will sound sharper and a train whistling in the distance may seem much nearer than it is.

You can let your nose be your weather guide, as well. Have you ever smelled rain in the air? A lot of people have. Dropping weather pressure make smells more pungent. If you're near a swamp just before rain, you may notice a strong, unpleasant smell. That's because when the pressure drops greater amounts of the methane trapped on the bottom of the swamp is released into the air. When the pressure rises, it has the opposite effect. Things won't smell quite so strong and you'll know that fair weather is on the way.

Animals have always been said to have a sixth sense when it comes to the weather. When you see cows lying down in the field, that usually means that bad weather is approaching too. Likewise, if you hear either an owl hoot or a dove coo in the daytime.

Don't look to a small screen in your home and some weather expert to find out what kind of a day it's going to be. Look out your own front door and be your own weather expert by observing the world around you and the weather hints it provides.

Reading Comprehension

Ⅰ. Do the following statements agree with the information given in the passage? Write:

TRUE *if the statement agrees with the information.*

FALSE *if the statement contradicts the information.*

1. In ancient times, people have learned how to predict weather by observing the world.
2. Old sayings about weather are proved to be unbelievable.

3. If the sky is red in the morning, sailors should be ready for bad weather when sailing on the sea.
4. Clear moon at summer night tells us that sunny day will continue.
5. Clouds in the sky, no matter what they look like, are signs of rain.
6. Clouds at a winter night usually lead to the increase of temperature.
7. In fact, the rain has a special favor, so we can smell it.
8. In sunny days, methane is trapped on the bottom of the swamp.

Ⅱ. For questions 1-3 below, choose the best answer from the four choices marked A, B, C and D.

1. What does it mean by "scientists discount the weather lore that has been passed down for generations" in Para. 2?
   A. Scientists agree that old stories predicting weather have a scientific explanation.
   B. Scientists completely believe the old stories passed down for generations.
   C. Scientists doubt whether the old stories predicting weather have a scientific explanation.
   D. Scientists think the old stories are nonsense.
2. Why is sound in nature louder before stormy weather according to the text?
   A. It is still a mystery.
   B. It is not mentioned in the text.
   C. Fewer sound waves are sent out into the atmosphere.
   D. It is more silent in stormy weather.
3. How do you understand "Animals have always been said to have a sixth sense when it comes to the weather"?
   A. Animals usually feel the change of weather that man can't feel.
   B. Animals' brains are more sophisticated than human being's.
   C. Animals are more sensitive than man.
   D. Animals have psychic power (超自然力).

Vocabulary

Doppler ['dɔplə] *adj.* 多普勒的
radar ['reidɑ:] *n.* 雷达
lore [lɔ:] *n.* (口头传下的)知识,传统信仰
approach [ə'prəutʃ] *vt.* & *n.* 接近
moisture ['mɔistʃə] *n.* 水分
biblical ['biblikl] *adj.* 《圣经》的
mammatus *adj.* 乳房状的
dissipate ['disipeit] *vt.* & *vi.* (使)消散,消失
impending [im'pendiŋ] *adj.* 即将发生的
halo ['heiləu] *n.* 光环
cirrostratus [ˌsirəu'strɑ:itəs] *n.* 卷层云
cumulonimbus [ˌkju:mjuləu'nimbəs] *n.* 积雨云
sack [sæk] *n.* 麻袋,包
cirrus ['sirəs] *n.* 卷云
streamer ['stri:mə] *n.* 彩色纸带
resemble [ri'zembl] *vt.* 看起来像
tail [teil] *n.* 尾巴
mare [meə] *n.* 母马,母驴
altocumulus ['æltəu'kju:mjuləs] *n.* 高积云
mackerel ['mækərəl, 'mækrəl] *n.* 鲭
scale [skeil] *n.* 鱼鳞,鳞片;规模;等级
droplet ['drɔplit] *n.* (液体的)小滴
whistle ['hwisl, 'wisl] *vt.* & *vi.* 吹口哨
pungent ['pʌndʒənt] *adj.* 刺鼻的
swamp [swɔmp] *n.* 沼泽(地)
trap [træp] *vt.* 诱骗;困住
owl [aul] *n.* 猫头鹰
hoot [hu:t] *n.* 猫头鹰叫声

dove [dʌv] *n.* 鸽子　　coo [ku:] *vi.* (鸽子)咕咕地叫

Text 4 Polyphemus Does the Hoovering

The Cyclopes, according to mythology, were a race of bad-tempered and rather stupid one-eyed giants. Not, perhaps, a great portend for a new generation of robots. But Andrew Davison, a computer scientist at Imperial College, London, thinks one eye is enough for a robot, provided its brain can think fast enough.

For a robot to work autonomously, it has to understand its environment. Stereoscopic vision, integrating the images from two "eyes" looking at the same thing from different angles, is one approach, but it involves a lot of complicated computer processing. The preferred method these days, therefore, is SLAM (Simultaneous Localisation And Mapping), which uses sensors such as laser-based range finders that "see" by bouncing beams of light of their surroundings and timing the return.

Dr. Davison, however, wants to replace the range finders, which are expensive and fiddly, with a digital camera, which is small, cheap and well understood. With this in mind, he is developing ways to use a single, moving video camera to create continually updated 3D maps that can guide even the most hyperactive of robots on its explorations. His technique involves collecting and integrating images taken from different angles as the camera goes on its travels. The trick is to manage to do this in real time, at frame rates of 100 to 1 000 per second.

The shape of the world pops out easily from laser data because they represent a direct contour map of the surrounding area. A camera captures this geometry indirectly and so needs more (and smarter) computation if it is to generate something good enough for a self-directing robot. The answer is a form of triangulation, tracking features such as points and edges from one frame to the next. With enough measurements of the same set of features from different viewpoints it is possible, if you have a fast enough computer program, to estimate their positions and thus, by inference, the location of the moving camera.

Developing such a program is no mean feat. In the milliseconds between successive frames, relevant information from each fresh image must be extracted and fused with the current map to produce an updated version. The higher the frame-rate, the less time there is to do this work. Rather than throwing more computing power at the problem, though, Dr. Davison is using standard processors and concentrating on making his programs super-efficient by analysing the bottlenecks within them and devising ways to cut the number of computational steps. As a result, he and his colleagues have recently been able to show this new form of SLAM working at 200 frames a second on a camera tossed from hand to hand, using just a laptop computer to run the program.

Rates as high as this can track fast movement, so single-camera eyes could be built into flying or jumping robots used to explore areas such as collapsed buildings that are too dangerous for people. Alternatively, the same programs can run at standard webcam speeds of 30 or fewer frames a second, bringing camera-based SLAM to mobile phones, games consoles and even vacuum