

KEYNOTE Upper Intermediate; H. Stephenson, L. Stansford, P. Dummett;
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- 4 Complete the paragraph about nanotechnology with these passive verbs.

can't be seen
needs to be regulated
will be disposed of

has been used
should be handled
was inspired

Nanotechnology (*nano* means extremely small) is a relatively new technology which ¹ was inspired by ideas that the physicist Richard Feynman had 50 years ago. The actual materials – nanomaterials – are so tiny that they ² _____ with a standard microscope. They include materials such as carbon or silver. Recently nanotechnology ³ _____ to improve products as diverse as sunscreen, solar cells and bandages. There are some worries about the long-term effects of nanomaterials and some scientists warn that they ⁴ _____ very carefully or that their use ⁵ _____ by governments. One problem is how products containing nanomaterials ⁶ _____ or recycled in the future.

- 5 Read about a new way of giving medicines to people. Choose the correct form of the verbs, active or passive, to complete the article.



Nanopatches:
pain-free vaccinations

- 6 Read the article in Exercise 5 again and choose the preposition used to say:

- 1 why many technological applications have been developed by / for
- 2 how a lot of medicines are delivered by / for

- 7 Complete the sentences with *by* and *for*.

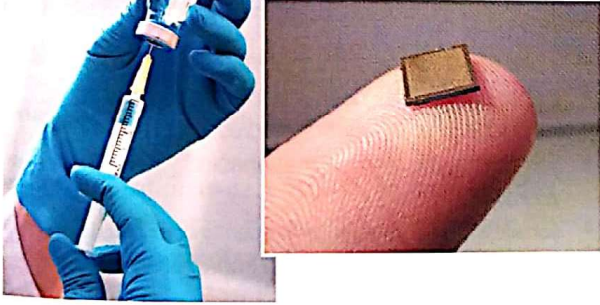
- 1 Calculations that would take humans years can be done _____ computers in minutes.
- 2 The authorities say that the disease can't be spread _____ animals.
- 3 The medicine should be taken _____ mouth.
- 4 Samples have been taken _____ analysis and the results will be available tomorrow.
- 5 Following complaints, all the products are being checked _____ faults.
- 6 Better results would be achieved _____ repeating the trial with more people.

SPEAKING Technology in everyday life

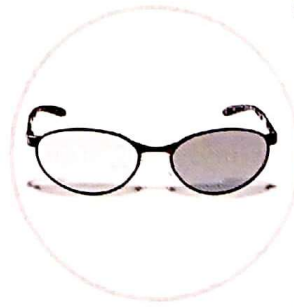
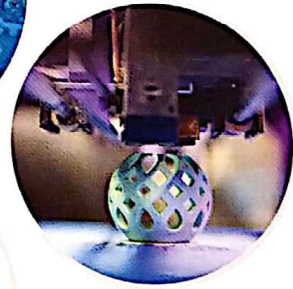
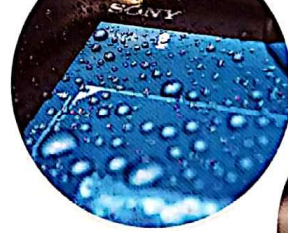
8 21st CENTURY OUTCOMES

Work in small groups. Look at the list of inventions and discuss what you know about each one. Then decide what problem each one solves or what purpose it has. Choose the two inventions you think are most important.





In medicine, many technological solutions ¹ *have developed / have been developed* for specific problems. A good example of this is giving medicine to prevent diseases, such as flu, which ² *cause / are caused by* infection. Most of these medicines ³ *deliver / are delivered* by needle. But approximately twenty per cent of people are afraid of needles. This ⁴ *can stop / can be stopped* them going to the doctor's. According to the WHO, half of the vaccines which ⁵ *give / are given* in tropical areas don't work because they ⁶ *haven't kept / haven't been kept* cold enough. Now a new way of giving these medicines to people – the nanopatch – ⁷ *is testing / is being tested*. The nanopatch is a small patch that sticks to your skin. Mark Kendall and his team at the University of Queensland in Australia ⁸ *have been working / have been worked* on the nanopatch for several years. He hopes that the nanopatch ⁹ *will make / will be made* a big difference to the number of deaths (currently 17 million a year) from infectious diseases.



- electric cars
- driverless cars
- 3D printers
- bionic limbs
- waterproof coatings
- biodegradable plastic
- solar panels
- smart materials (that react to changes in their environment)

EXERCISES

1 Rewrite the sentences in the passive form.

1 An astronaut took a 3D printer to the International Space Station.

2 When did they invent the computer mouse?

3 Were doctors using stem cell therapy in the 1990s?

4 They didn't install fibre optic cables in my area until last year.

5 Which company is manufacturing driverless cars?

6 Were they demonstrating electric cars at the exhibition?

2 Complete the sentences with the passive form of the tenses in brackets.

1 These medicines _____ (prescribe) since 1995. (present perfect)

2 The patients _____ (examine) before taking part in the trial. (past perfect)

3 The group _____ (contact) by the hospital. (present perfect)

4 Only one of the participants _____

4 Choose the best option to follow each sentence. Both are grammatically correct.

1 I love these photos you took on your trip to Venezuela.

a What did you use – a camera or your phone?

b What was used – a camera or your phone?

2 This is a state-of-the-art factory for new medicines.

a They built it last year.

b It was built last year.

3 Three ambulances were called to an incident in the town centre last night.

a They took several people with minor injuries to hospital.

b Several people with minor injuries were taken to hospital.

4 Our new local doctor is very different to the previous one.

a She's completely changed the appointments system.

b The appointments system has been completely changed.

5 Several health organizations are trialling a new drug for malaria.

a They will report their findings next year.

b Their findings will be reported next year.

6 The government has proposed changes to the public health service.

a They are discussing the proposals this week.

b The proposals are being discussed this week.

5 Choose the correct option to complete the sentences.

- 4 Only one of the participants _____ (not / speak) to. (present perfect)
- 5 _____ the results of the tests already _____ (give) to the patient? (past perfect)
- 6 Where _____ the patient _____ (take)? (present perfect)

3 Complete the sentences with the passive form of the modals.

- 1 Visitors to the factory _____ (should / accompany) at all times.
- 2 The new policy _____ (not / will / implement) until next year.
- 3 All changes to the system _____ (must / notify) in writing.
- 4 When _____ the building checks _____ (will / complete)?
- 5 The exit _____ (not / should / use) by unauthorised staff.
- 6 Which department _____ these boxes _____ (should / deliver) to?
- 7 _____ the invitations _____ (can / send) out today?
- 8 This email _____ (not / must / see) by anyone outside this department.

- 1 The research department is being funded *by / for* the government.
- 2 The plants are being investigated *by / for* new medicinal uses.
- 3 A survey into the use of prosthetics will be carried out *by / for* Professor Ross.
- 4 New medicines are being trialled *by / for* the most important diseases.
- 5 The work was carried out *by / for* an outside contractor.
- 6 Following the man's accident, he was checked *by / for* broken bones.

6 Correct the mistakes in these sentences.

- 1 The emails were send yesterday.
- 2 Too many changes are been made too quickly.
- 3 The faulty device was sold for most shops.
- 4 The report will publish next week.
- 5 Many people was questioned in the survey.
- 6 All of this work has done by our group.