

Do the preparation task first to help you with the difficult vocabulary. Then read the article and do the exercises to check your understanding.

Preparation

Match the vocabulary with the correct definition and write a–f next to the numbers 1–6.

- | | |
|--------------------|--|
| 1..... prestigious | a. in three dimensions |
| 2..... 3D | b. a machine that examines the inside of something and gives an image of this |
| 3..... landmine | c. a photograph of the inside of something (a part of the body or a suitcase), produced by having X-rays passed through it |
| 4..... X-ray | d. a set of rules which is followed when making calculations, especially by a computer |
| 5..... algorithm | e. something which inspires a lot of respect |
| 6..... scanner | f. an explosive device which is placed just under the ground |

1. Check your understanding: multiple choice

Circle the correct option to complete the sentences.

- Security measures at airports nowadays result in

| | | |
|------------------------------------|------------------------------------|--|
| a. suitcases being very expensive. | b. people having to wait in lines. | c. all luggage having to pass through at least two machines. |
|------------------------------------|------------------------------------|--|
- The new 3D scanner

| | | |
|--|--|---|
| a. will not affect the speed of security checks. | b. could help security workers to do their job more quickly. | c. might damage some pieces of luggage. |
|--|--|---|
- The new three-dimensional picture of luggage

| | | |
|-------------------------------|--|---|
| a. was invented very quickly. | b. involves complicated mathematical calculations. | c. involved a lot of thinking before it was invented. |
|-------------------------------|--|---|
- The RTT80 machine

| | | |
|---|-------------------------------|--|
| a. won an important prize in a German magazine. | b. is already being produced. | c. has been tested in different countries. |
|---|-------------------------------|--|

5. The mathematical calculations used in making the 3D scanner
- a. might also be used for removing landmines from parts of Africa and Asia.
 - b. might also be used for removing landmines from parts of the UK.
 - c. might also be used for detecting mines over the next one hundred years.
6. According to Professor Lionheart,
- a. mathematics is a question of discipline.
 - b. mathematics is particularly useful when building bridges.
 - c. mathematics can be used to solve problems in different areas of engineering.

2. Check your understanding: gap fill

Read the text and write the correct form of the word to complete the gaps. Look at the example at the beginning of the text.

A new 3D scanning machine could mean that security checks at airports happen more *QUICKLY* (**QUICK**). The new machine will allow security staff to have a much _____ (**CLEAR**) picture of what is inside a piece of luggage because they can see it in three dimensions. Security people should be able to _____ (**SUCCESS**) identify a suspicious object inside a suitcase faster than with a normal scanner. However, designing this new scanner involved some complicated mathematical _____ (**CALCULATE**). The thing that was most _____ (**PROBLEM**) was creating a 3D image. Despite some _____ (**DIFFICULT**), the people who designed the machine finally managed to make a three-dimensional picture and the new machine won an important prize. The company which makes the new scanner also manufactures metal detectors and they are _____ (**HOPE**) that the mathematics involved in the new scanner can also be applied to removing landmines. The _____ (**CLEAR**) of landmines in some countries is something which is of great _____ (**IMPORTANT**).

Discussion

How do you think that security in airports will change in the future?

I think that ...

If ... then ...