

## Spot on facts

**COMPREHENSION** **1** Choose one of the following options: **1. At a youth conference ...**

**LÖSUNGSVORSCHLAG** Individual answers expected.

**VISUALS** **2** Describe and interpret the cartoon. → S28.2

**LÖSUNGSVORSCHLAG** Description:

- The cartoon is made up of a series of four mini-pictures.
- A drone is speaking to the reader in a standing position.
- The drone begins by introducing itself and names three tasks it can be used for, e.g. delivering packages, pizzas and weapons.
- At the end the drone advises the reader to be careful while it flies away swiftly into the distance.
- The drone is visualised as a flying object with four thin metal feet, eight rotors/propellers and a rounded metal top with a smiling human-like face and a brown carrier box underneath.

### Interpretation/Analysis:

The intention of the cartoonist is to inform the reader concisely about the appearance and functions of drones. In doing so, the drone is humanised/personified as being friendly via its consistently benevolent smile and different facial expressions. The cartoon presents drones as a useful delivery service of both everyday objects and weapons. The destructive potential of drones in war is emphasised by the drastic wording that indicates it is able to "blow your village to kingdom come", a phrase which stands in stark contrast to the drone's friendly appearance. The cartoonist sends a clear message to be aware of the different purposes of drones. Thus drones exemplify science which is morally neutral and, depending on its use, may be a blessing or a curse.

**COMPREHENSION** **3** Turn the information from the texts above into a grid which explains, ...

**LÖSUNGSVORSCHLAG**

Speculative fiction	Utopia	Dystopia	Science fiction	Fantasy
<b>Definition</b>	optimistic description of an imaginary perfect future society	pessimistic description of an imaginary future society (anti-utopia)	description of scientific advances and their effects on society and private life	creation of a fantastic setting different from today's society
<b>Focus</b>	positive effects of technological progress	negative effects of industrialisation and science, e.g. a non-democratic government and the suppression of the individual	extrapolation = prediction of future developments from current trends in science	magic and supernatural elements; good vs. evil

LÖSUNGSVORSCHLAG	Speculative fiction	Utopia	Dystopia	Science fiction	Fantasy
Examples	Thomas More, <i>Utopia</i> (1516); Edward Bellamy, <i>Looking Backward</i> (1888)	Thomas More, <i>Utopia</i> (1516); Edward Bellamy, <i>Looking Backward</i> (1888)	Aldous Huxley, <i>Brave New World</i> (1932); George Orwell, <i>Nineteen Eighty-Four</i> (1949); Suzanne Collins, <i>The Hunger Games</i> (2008-2010)	H. G. Wells, <i>The Time Machine</i> (1895); Isaac Asimov's novels and short stories	J. R. R. Tolkien, <i>Lord of the Rings</i> (1954-55); J. K. Rowling, <i>Harry Potter</i> (1997-2007)

SPEAKING **4** Give a five-minute book report on a speculative fiction ... → Δ 2

LÖSUNGSVORSCHLAG Individual answers expected.

## Advanced texts

### Spot on facts

COMPREHENSION **1** 👤 Note down questions about genetics and genetic engineering ... → S25

- LÖSUNGSVORSCHLAG
- What does the field of genetics deal with?
  - What is the relationship between genes, DNA and chromosomes?
  - To what extent do genes inherited at birth determine a person's individual features?
  - What is genetic engineering, and how is it used in everyday life?
  - Why is genetic research conducted on stem cells?
  - What hopes and fears are connected with the process of cloning?

LISTENING © L3/5 **2** a) Make sure you know what IVF and ... b) Listen to the programme ...

LÖSUNGSVORSCHLAG a) IVF: in vitro fertilisation = process of making babies artificially in a test tube.

#### Mitochondrial diseases:

- an organelle is a part of a cell with a special function
- mitochondria are the organelles in a cell which generate energy (the 'battery' or 'powerhouses' of a cell)
- mitochondrial diseases are caused by dysfunctional mutations in the mitochondrial DNA and often inherited

#### b)

- **Name of new technique:** mitochondrial DNA transfer or 'three parent IVF' (an IVF technique that uses DNA from three people)
- **Why the DNA from three people is needed:** The technique aims to help women who suffer from mitochondrial disease to have a baby which is genetically theirs but free from the disease. A donated egg acts as a host which carries the parents' genetic material. The technique creates a child and subsequent generations of children free of mitochondrial disease.
- **Whose genes would determine the baby's looks (e.g. hair/eye colour):** The embryo has the nuclear DNA of the mother and father (which determines the child's looks, hair colour, intelligence, music, sporting ability) but has the mitochondrial DNA of the donor.
- **What is destroyed in the process:** 37 genes out of 20,000 in the nucleus of a cell
- **Arguments against this technique:**
  1. The new technique changes the DNA permanently through all subsequent generations down the maternal line.

2. The mitochondrial disease might recur in subsequent generations, or other health problems may appear as a result of the technique.
3. The treatment involves the destruction of either an unfertilised egg (in the case of nuclear transfer) or a fertilised embryo.
4. The technique is a first step towards designer babies and eugenics because the gene pool is being changed.

## Spot on language

### 1 Before you listen: Which recent invention has impressed you ...?

**LÖSUNGSVORSCHLAG** Individual answers expected.

### LISTENING © L3/6 2 You are going to listen to a report from a science fair. Before doing so, ...

**LÖSUNG** 1. a); 2. c); 3 a), c); 4. a), d); 5. a); 6. b)

### 3 Think about the following questions and use your answers as a basis ...

**LÖSUNGSVORSCHLAG** **Health data:** weight, blood pressure, heart rate, body fat, stress level etc.

**Advantages:** might raise more health awareness; if any of the data is alarming, you can consult a doctor straight away; fitness freaks might find the information interesting; shows personal progress

**Disadvantages:** more information about individuals collected; no guarantee that the data is kept safe; extreme focus on health problems might be more harmful than beneficial; how reliable is the information which is being transmitted?

### 4 Match form and function. Draw a table.

<b>LÖSUNGSVORSCHLAG</b> form	will future	going-to future	future perfect
function	<ul style="list-style-type: none"> <li>• predictions or assumptions about the future</li> <li>• spontaneous decisions, offers and promises</li> </ul>	<ul style="list-style-type: none"> <li>• intention or plans for the future</li> <li>• predictions about the future because there are already signs of sth happening</li> </ul>	<ul style="list-style-type: none"> <li>• actions and events which will be complete at a point of time in the future</li> </ul>

### 5 Bill Gates, the founder of Microsoft, and his wife Melinda set up a ...

**LÖSUNGSVORSCHLAG**

1. **will future:** prediction/assumption about the future
2. **will future:** prediction/assumption about the future
3. **going-to future:** plan or intention for the future
4. **will future:** prediction/assumption about the future
5. **will future:** prediction/assumption about the future
6. **future perfect:** actions and events which will be complete at a point of time in the future (here: 2035)

### 6 Remember other ways to say how certain, probable or improbable ...

**LÖSUNGSVORSCHLAG**

- The internet **is bound to** have spread even further.
- Looking at all the conflicts in the present, it **seems unlikely** that world peace will have been achieved within the next 50 years.
- English **is certain to** remain the language of computer technology.
- Medicine **might** have found a cure for cancer.
- Food **may** have been replaced by pills.

## 7 Your English pen pal would like to take part in a school competition ...

### LÖSUNGSVORSCHLAG

Hi ...

How are things? Any news on the competition front? If you're still looking for ideas, maybe I can help. I read this article about drones today. It's amazing what they can do. Did you know that Amazon is using drones to deliver parcels to their customers' doorsteps? Apparently, they can fly up to ten miles and carry a weight of five lbs.

The text also mentioned another project in which drones have been developed to save people's lives. After a fire at a chemical plant, for example, drones can be sent out to gather information about the situation. They can collect data that helps emergency service personnel to make plans. That could be very useful after an accident at a nuclear power plant or after the eruption of a volcano. They can even transmit photos of the affected areas.

If this sounds useful and you'd like more info, just drop me a line.

Cheers

...

## Spot on vocabulary

### 1 a) Find the terms that match the ... b) Give definitions for the following ...

### LÖSUNGSVORSCHLAG

a) 1. technology, 2. to clone, 3. spying, 4. beneficial, 5. science fiction

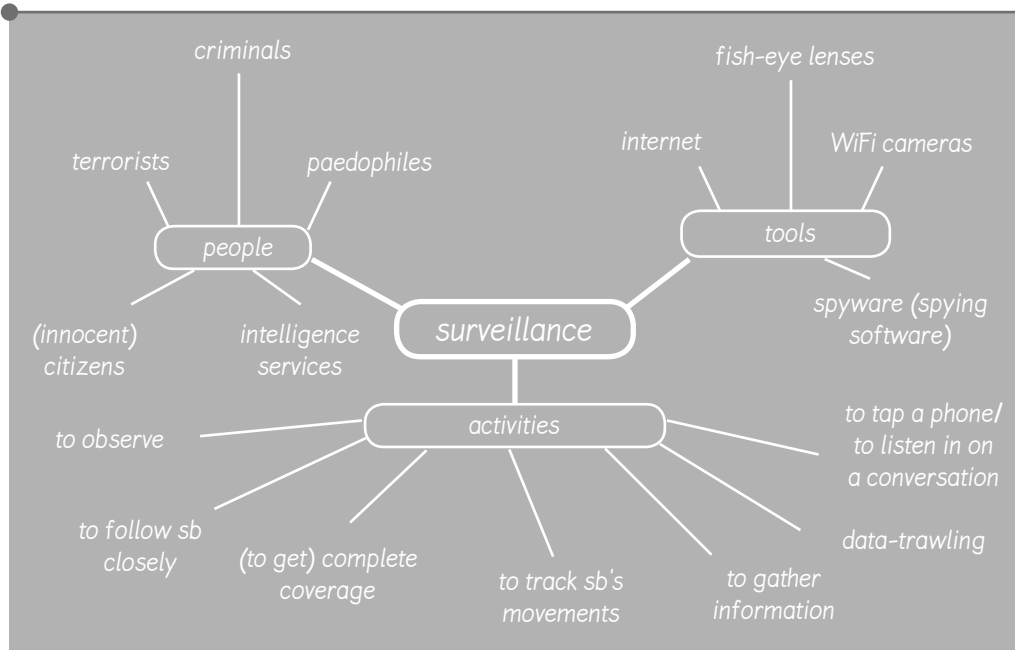
b) Possible definitions:

- **sustainability:** use of natural products and energy in a way that does not harm the environment
- **artificial intelligence:** area of study concerned with making computers copy intelligent human behaviour
- **GM foods:** food that has been genetically modified
- **ethics:** system of moral principles or rules of behaviour
- **dystopia:** pessimistic description of an imaginary future society

### 2 a) The following text is an excerpt from ... b) Explain the secretary's ...

### LÖSUNGSVORSCHLAG

a)



- b) The Secretary of State would like to increase surveillance. He claims that this is necessary because terrorists, criminals and paedophiles are using private houses to get together. In order to install surveillance cameras, the buildings regulations have to be changed. In the future, it will be possible to install surveillance equipment in private houses.

**3 Complete the following text written by the American SF author ...**

- LÖSUNGSVORSCHLAG** 1. extrapolative, 2. intensify, 3. extend, 4. prediction, 5. scientist, 6. works, 7. extinction, 8. escapist, 9. depressing, 10. logical