

Examinator*in: NN

Guidelines for our candidates:

1. Duration: 4 hours
2. The exam consists of 3 parts:
 - A Listening Comprehension (LC, blue)
 - B Reading Comprehension (RC, white)
 - C Essay (yellow)

3. Procedure:

The listening comprehension (LC) is the beginning of the exam. When the audio is started, you must turn to part 1 of the LC and read through it. After about 2 minutes the actual conversation begins. The CD will not be stopped before the end of the whole LC. Follow the instructions given in the audio and in the different sections of the LC. After 30 minutes you must hand in the LC.

After that you will be given the reading comprehension (RC). When you have finished the RC, hand it in. Remember that you cannot go back to the RC once you have handed it in!

Finally, you will be given the essay topics and a dictionary.

4. Attention: The LC counts 20%, the RC counts 30% and the essay counts 50% of your final written mark!

5. Assessment:

Part		Mark
LC	20%	
RC	30%	
Essay	50%	
Final Mark		

Fach: Englisch
Examinator*in: NN

A	LISTENING COMPREHENSION	pts.	/ 30 pts.
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For technical reasons, we cannot publish the audio file of our listening comprehension here, therefore, we also refrain from publishing the tasks and questions.

B	READING COMPREHENSION	pts.	/ 61 pts.
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The article below is divided into three parts. For each part, follow the given instructions.

The environment. The known unknowns of plastic pollution

So far, it seems less bad than other kinds of pollution (about which less fuss is made)
Mar 3rd 2018 edition. Image: Justin Hofmann.

PART I: SYNONYMS. GUESSING MEANING FROM CONTEXT.



MR MCGUIRE had just one word for young Benjamin, in “The Graduate”: plastics. It was 1967, and chemical engineers had spent the previous decade ¹**devising** cheap ways to splice different hydrocarbon molecules from petroleum into strands that could be moulded into anything from drinks bottles to Barbie dolls. Since then global plastic production has risen from around 2m tonnes a year to 380m tonnes, nearly three times faster than world GDP.

Unfortunately, of the 6.3bn tonnes of plastic waste produced since the 1950s only 9% has been recycled and another 12% ²**incinerated**. The rest has been dumped in landfills or the natural environment. Often, as with ³**disposable** coffee cups, drinks bottles, sweet wrappers and other packets that account for much of the plastic produced in Europe and America, this happens after a brief, one-off ⁴**indulgence**. If the stuff ends up in the sea, it can wash up on a distant beach or ⁵**choke** a seal. Exposed to salt water and ultraviolet light, it can ⁶**fragment** into “microplastics” small enough to find their way into fish bellies. From there, it seems only a short journey to dinner plates.

Circle the letter A, B, C or D in front of the expression that can best replace the words in bold in the given context.

1.	devising	A	describing	B	developing	C	criticising	D	transmitting
2.	incinerated	A	used	B	reused	C	burnt	D	started
3.	disposable	A	throwaway	B	makeshift	C	recyclable	D	refundable
4.	indulgence	A	necessity	B	strictness	C	intolerance	D	treat
5.	choke	A	fuel	B	suffocate	C	strangle	D	grip
6.	fragment	A	distinguish	B	dishonour	C	discover	D	disintegrate

Countries as ⁷**varied** as Bangladesh, France and Rwanda have ⁸**duly** banned plastic bags. Since last year anyone offering them in Kenya risks four years in prison or a fine of up to \$40,000. In January China ⁹**barred** imports of plastic waste, while the European Union launched a “plastics strategy”, aiming, among other things, to make all plastic packaging recyclable by 2030 and raise the ¹⁰**proportion** that is recycled from 30% to 55% over the next seven years. A British ¹¹**levy** on plastic shopping bags, introduced in 2015, helped cut use of them by 85%. On February 22nd Britain’s environment secretary, Michael Gove, ¹²**mused** about prohibiting plastic straws altogether.

Fearful for their ¹³**reputations**, big companies are ¹⁴**shaping up**. Coca-Cola has promised to collect and recycle the equivalent of all the drinks containers it ¹⁵**shifts** each year, including 110bn plastic bottles. Consumer-goods giants such as Unilever and Procter & Gamble ¹⁶**vow** to use more recycled plastics. McDonald’s plans to make all its packaging from recycled or renewable sources by 2025, up from half today, and wants every one of its restaurants to recycle straws, wrappers, cups and the like.

The ¹⁷**perception** of plastics as ugly, unnatural, inauthentic and disposable is not new. Even in “The Graduate” they symbolised America’s consumerism and moral ¹⁸**emptiness**. Visible plastic pollution is an old ¹⁹**complaint**, too (years ago, plastic bags caught in trees were nicknamed “witches’ knickers”). What is new is the ²⁰**suspicion** that microplastics are causing widespread harm to humans and the environment in an invisible, ²¹**insidious** manner. “Blue Planet 2”, a nature series presented by Sir David Attenborough that ²²**aired** in Britain last October and in America in January, made the case beautifully. But the truth is that little is known about the environmental consequences of plastic – and what is known doesn’t look hugely alarming.

Circle the letter A, B, C or D in front of the expression that can best replace the words in bold in the given context.

7.	varied	A	far apart	B	numerous	C	divided	D	heterogeneous
8.	duly	A	fittingly	B	presumably	C	inappropriately	D	mainly
9.	barred	A	allowed	B	forbid	C	secured	D	admitted
10.	proportion	A	sense	B	ratio	C	emotion	D	opinion
11.	levy	A	charge	B	blackmail	C	pressure	D	accusation
12.	mused	A	sang	B	whispered	C	thought	D	worried
13.	reputations	A	swimming	B	flying	C	running	D	standing
14.	shaping up	A	losing hope	B	making progress	C	gaining weight	D	showing resistance
15.	shifts	A	sells	B	produces	C	moves	D	destroys
16.	vow	A	try	B	declare	C	hope	D	expect
17.	perception	A	listening	B	reading	C	writing	D	experimenting
18.	emptiness	A	holiday	B	vacuum	C	credit	D	purpose
19.	complaint	A	personality	B	subjection	C	praise	D	objection
20.	suspicion	A	notion	B	unambiguity	C	certainty	D	disbelief
21.	insidious	A	harmless	B	harmful	C	careless	D	careful
22.	aired	A	ventilated	B	freshened	C	dried	D	broadcast

PART II: WORD FORMATION.

Use the word in capitals in the 2nd column to form a word that fits the gap with the same number in form and meaning.

A load of rubbish

We can be surest about how much plastic is produced and where it ends up. In a paper published last year in *Science Advances*, Roland Geyer of the University of California, Santa Barbara, and his colleagues put the ¹..... amount of solid plastic waste ²..... since the 1950s that has not been burned or recycled at 4.9bn tonnes. It could all have been dumped in a landfill 70 metres deep and 57 square kilometres in area - that is to say, the size of Manhattan.

If only it had all remained on land, or even washed up on beaches, where it could be collected. A bigger ³..... worry is that much plastic has ended up in the ocean, where, dispersed by currents, the stuff becomes virtually ⁴....., especially once it has fragmented into microplastics. Computer models suggest that seas hold as many as 51trn microplastic particles. Some are the product of larger pieces breaking apart; others, like microbeads ⁵..... to toothpaste or face scrubs, were designed to be tiny.

Whereas salt and sunlight can cause plastics ⁶..... to break apart into smaller pieces, chemically the hydrocarbons linked together into the polymer chains of which plastics are made do not ⁷..... decompose into other compounds. Like crude oil, from which most polymers are derived, that happens only if they are burned at a high temperature to release mainly carbon dioxide and water. In normal conditions plastic simply accumulates in the environment, much as carbon dioxide does in the atmosphere.

Even if the flow of plastic into the sea, ⁸..... perhaps 10m tonnes a year, was instantly stanchd, huge quantities would remain. And the flow will not stop. Most of the plastic in the ocean comes not from tidy Europe and America, but from countries in fast-developing East Asia,

**1 CUMULATION
2 PRODUCT**

3 ENVIRONMENT

4 RETRIEVE

5 ADDITIONAL

6 PHYSICS

7 SPONTANEITY

8 TOTAL

where waste-collection systems are flawed or ⁹.....

9 EXISTENCE

Last October scientists at the Helmholtz Centre for Environmental Research, in Germany, found that ten rivers – two in Africa and the rest in Asia – ¹⁰..... 90% of all plastic marine debris. The Yangtze alone ¹¹..... 1.5m tonnes a year.

On current trends, by 2050 there could be more plastic in the world’s waters than fish, measured by weight. Such numbers ¹²..... people and change their ¹³..... . Nine in ten Europeans worry about plastic’s impact on the environment. More than half told pollsters for Eurobarometer in 2017 that they try to ¹⁴..... plastic bags when ¹⁵..... . By comparison, only one-tenth consider fuel-efficiency when buying a new car. ¹⁶..... other kinds of pollution, plastic is an eyesore, notes Liz Goodwin of the World Resources Institute, a think-tank. Yet if a ¹⁷..... league-table of environmental ills existed – which it does not – plastics would not top it.

Just 10% of 3.6m tonnes of solid waste discarded each day the world over is plastic. Whereas filthy air kills 7m people a year, nearly all of them in low- and middle-income countries, plastic pollution is not directly blamed for any. A report last year by the Lancet Commission on pollution and health, which put the total number of pollution-related ¹⁸..... at 9m, mentions plastics once in its 45 pages.

On land, the damage from litter, which exercises many anti-plastic campaigners, is ¹⁹..... . Most refuse does not spread too far beyond population centres, where (at least in principle) it can be managed. At sea, most plastics end up in vast rubbish patches ²⁰..... by ocean circulation patterns, the biggest of which can be found in the north Pacific.

Mid-ocean gyres are ²¹..... neither especially rich in fauna nor particularly biodiverse. The effects of plastics on ²²..... bits of the ocean, such as reefs, have been little studied.

10 CHARGE
11 CARRIAGE
12 FRIGHT
13 BEHAVE
14 GO
15 SHOP
16 LIKELY
17 COMPREHENSION
18 DEAD
19 LIMITATION
20 FOOD
21 FORTUNE
22 BUSY

One paper, published this year in *Science* by Joleah Lamb of Cornell University and colleagues, linked plastic litter to coral disease near Indonesia and Myanmar. But little similar work exists for other sedentary species, let alone slippery migratory ones.

Researchers have identified 400 species of animal ²³ members either ingested plastics or got entangled in it. It is known that because polymers repel water (which is why droplets form on their surface), plastic particles also attract certain compounds from their ²⁴ Some of these could be toxic.

Laboratory studies have shown that if swallowed by fish, compounds in plastic fragments can be absorbed from the digestive tract into flesh. However, no studies have so far been performed to test whether such toxins concentrate up the food chain, as mercury does in fish. The only direct evidence of plastic ²⁵ the human diet is a study by Belgian scientists who ²⁶ plastic fragments in mussels. Unlike fish, bivalves are eaten whole, guts and all.

Munching *moules-frites* seasoned with a pinch of plastic may sound ²⁷ but it is hard to say if it is dangerous, says Stephanie Wright, who studies the subject at King's College, London. Polymers are chemically inert, and so do not ²⁸ present a health risk. Some common additives such as phthalates (which soften PVC) or bisphenol-A (which ²⁹ many types of plastic used in consumer goods) are chemically akin to human hormones, and might therefore disrupt them in high concentrations. For decades both have been ³⁰ for use in everything from pipes to shampoo bottles because human exposure was unlikely to exceed safe limits. America now bans some phthalates in toys and child-care products because of potential harm to growing children.

23 WHO

24 SURROUND

25 ENTRANCE

26 COVER

27 APPETITE

28 THEY

29 HARD

30 LICENCE

PART III:

You are going to read the final part of the article. Nine parts have been removed from the article. Choose from the parts A – J the one which fits each gap (1 - 9). Write the correct letter into the respective box in the text. There is one extra part, which does not fit any of the gaps.

Weighing the damage & PET peeves

Trucost, a research arm of Standard & Poor's, a financial-information provider, has estimated that marine litter costs \$13bn a year, mainly through its adverse effect on fisheries, tourism and biodiversity. It puts the overall social and environmental cost of plastic pollution at \$139bn a year.

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To put that into perspective, the United Nations Development Programme says that the costs of overfishing and fertiliser run-off amount to some \$50bn and \$200bn-800bn a year, respectively. By 2100 ocean acidification, which is caused by atmospheric carbon dioxide dissolving into water, could cost \$1.2trn a year. The costs of rapid ocean warming caused by human-induced climate change are hard to fathom but are likely to be enormous.

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Making a kilogram of virgin plastic releases 2-3kg of carbon dioxide, about as much as the same amount of steel and five times more than wood. But a product made of plastic can weigh a fraction of a comparable one made of other materials. That is why replacing plastic with other things could raise environmental costs at least fourfold, according to Trucost's analysts. This is even true of the various virtue-signalling alternatives to plastic bags.

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The figure rises to 173 times if 40% of the plastic bags are reused as bin liners, reflecting the proportion in Britain that are so repurposed. The carbon footprint of a paper bag that is not recycled is four times that of a plastic bag.

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Imagine a hospital without surgical gloves, or promiscuity without condoms. By keeping food fresh for longer, plastic packaging substantially reduces organic waste, itself a growing environmental concern. In 2015 J. Sainsbury, a British grocer, reduced waste in a beefsteak line by more than half by using plastic vacuum packaging.

Plastic pollution "is not the Earth's most pressing problem", in the words of one European official. But, he immediately adds, just because plastics may not be the biggest problem facing humanity does not make them trouble-free.

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Fresh science may be forthcoming. In the past two years Ms Wright has noticed an uptick in grants for plastics-related research. Erik van Sebille, of Utrecht University in the Netherlands, recalls that a few years ago a seminar on ocean plastic pollution organised by America's National Oceanic and Atmospheric Administration drew perhaps 200 participants. This year organisers had to cap attendance at 600 and turn people away. While researchers get a better handle on the science, campaigners badger politicians and browbeat consumers to kick the polymer habit.

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As the proliferation of plastic bans and strategies suggest, they are having some success. Much of this activity makes scarcely a dent in the world's plastic pollution problem, however. Some has unintended consequences. Making plastics biodegradable, by adding corn starch or vegetable oil to petroleum-derived hydrocarbons, renders them harder to recycle. Recyclers already struggle to invest in capacity or innovation even in countries that collect lots of their rubbish. Periodic declines in the oil price, which makes virgin plastic cheaper, can bankrupt recyclers, many of which are small or medium-sized companies, says Peter Borkey of the OECD, a rich-country think-tank.

Meanwhile consumer-goods firms sometimes say that too little recycled plastic is available to buy. With costs of some recycled plastic competitive with virgin stuff, "supply is a bigger issue than cost," says Virginie Helias, Procter & Gamble's vice-president for sustainability.

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There is no guarantee that targets like the EU's will solve it. China's import ban may provide the necessary jolt. Introduced as part of a broader clampdown on pollution, it took waste exporters by surprise. In 2017 European countries shipped a sixth of their plastic waste for disposal abroad. Most sailed to China. In the short run some surplus waste can go to Malaysia or India, but those countries' capacity is a fraction of China's.

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Building recycling capacity is one option. Incineration is falling out of favour for heating or electricity generation as coal-fired plants are replaced with gas, which emits less greenhouse gases than waste-to-energy plants.

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Plasma recycling, where refuse is heated to as much as 5,000°C, turning it into unadulterated hydrocarbons plus a solid residue, looks promising but remains some way from commercialisation.

To be disposed of, though, plastic waste must be collected. In Europe, America and other developed places, virtually all of it is. To eliminate marine litter in particular, more rubbish needs to be picked in the leaky Asian countries. China's anti-pollution drive may bring about improvements, although the country now pays more attention to filthy air and water, which are more pressing concerns. Indonesia has launched its own National Action Plan on marine plastic.

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Reminder:

Choose from the parts A – J the one which fits each gap (1 - 9). Write the correct letter into the respective box in the text. There is one extra part, which does not fit any of the gaps.

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|----------|--|
| A | A British government analysis from 2011 calculated that a cotton tote bag must be used 131 times before greenhouse-gas emissions from making and transporting it improve on disposable plastic bags. |
| B | Eventually, refuse exporters will have to deal with more of it at home. |
| C | As scientists never tire of repeating, more research is needed. It is the absence of evidence about how plastics influence health rather than evidence of absence that explains their bit part in the Lancet Commission report, says Philip Landrigan of the Icahn School of Medicine in New York, who chaired it. |
| D | The other big polluters are eyeing similar measures. What happens there over the next few decades will matter more than any number of Western plastic-bag bans. |
| E | And other materials could not replace plastics in all circumstances. |
| F | Of that half arises from the climate effects of greenhouse-gas emissions linked to producing and transporting plastic. Another third comes from the impact of associated air, water and land pollution on health, crops and the environment, plus the cost of waste disposal. |
| G | From an ecological standpoint, landfilling is not as bad as it looks, so long as additives that might leach out of the polymers are prevented from escaping. |
| H | In other words, erratic demand appears to dampen supply while insufficient supply inhibits demand. Recyclers everywhere face that problem. |
| I | The overall cost of plastic pollution compares favourably with other sorts of man-made harm mostly because plastics are light. |
| J | They often invoke the precautionary principle. If the impact of something is uncertain but could be great, the argument goes, better forestall it just in case. |

Name:

Class:

FACH: Englisch

KLASSE: 4AW

Examinator*in: NN

C	ESSAY
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Choose one topic (!) relating to the works you have read in class or the article you have read in the reading comprehension.

Write an essay of 500 - 700 words (recommended). Count your words! Hand in a fair copy (Reinschrift)!

1. ENVIRONMENTAL ISSUES IN TIMES OF CORONA

In an article dating from 2020, the author quotes Dan Parsons, director of the Energy and Environment Institute at the University of Hull with the words

There are good reasons why the public has turned to plastics. People know that it protects them from the coronavirus.

Looking back on our times of Corona so far, there are indications that Western civilisations have treated the protection of their environment as a 'First World Problem' that can be suspended for the time being.

In your essay, elaborate on this notion. Base your argumentation on well-selected examples from the recent crisis. Do not restrict yourself to the aspect of plastic only.

2. – 4. Literary topics