



GCSE

3700U20-1A



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MONDAY, 2 NOVEMBER 2020 – MORNING

ENGLISH LANGUAGE

UNIT 2

Reading and Writing: Description, Narration and Exposition

Resource Material

For use with Section A

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Text A is taken from a nature blog and gives information about insects.

Insect identification: common UK insects

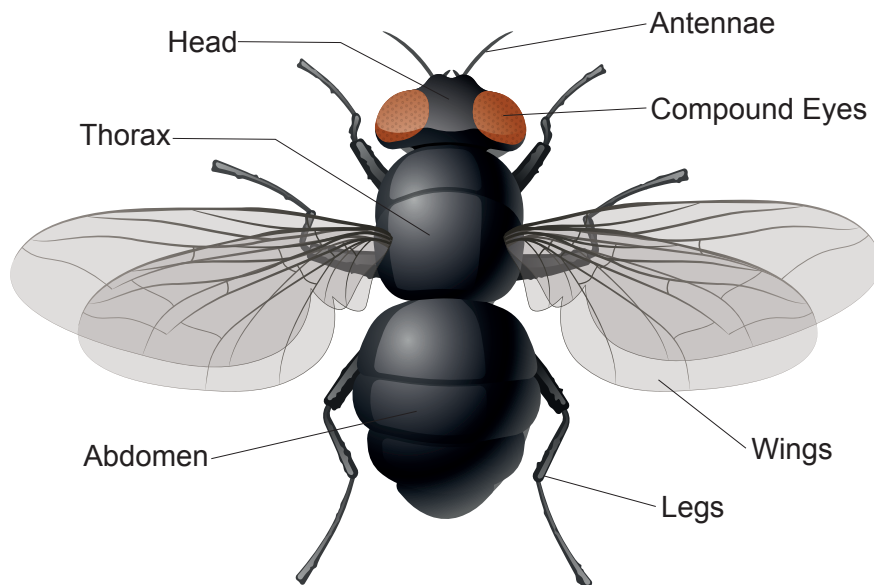
There are a staggering 27,000 types of insect in the UK. Here we look at some of our most commonly-encountered insect groups and the clues we need to identify them.

What is an insect?

An animal without a backbone is known as an invertebrate. There are many types of invertebrate such as multi-legged, hard-bodied minibeasts known as arthropods. Arthropods can be separated into different groups including insects, spiders and crustaceans (such as crabs and woodlice).

What to look for when identifying an insect:

- six legs
- three body sections (head, thorax and abdomen)
- pair of antennae
- compound eyes
- most have wings
- three or four stage life cycle



Text B is taken from a news article about eating insects on the BBC website.

Why not eat insects?

Would you eat ant eggs, scorpions or bugs? Most people turn their noses up at this kind of thing, some feel sick, and one (usually very cool) BBC channel controller ran squealing across the room when I dropped a roasted giant water bug into his hands. This is a pretty normal reaction here in the UK, where our eating of insect-related food is restricted to consuming honey, eating cochineal bugs (present in pink-purple food colouring E120) and the accidental munching of insect fragments in flour. But I think that insects have been given a bad press by *I'm A Celebrity Get Me Out of Here* (few people eat them uncooked, for starters) and I'm going to try to change your mind about bug-chomping.

Taste

There are some surprisingly delicious bugs around. My favourites are dry-fried Burmese bamboo grubs, which have an extraordinary sweetness similar to a root vegetable. Next best are Mexican chappulines (grasshoppers roasted with chilli, salt and lime), which make a fantastic sour-spicy snack. Fat-bottomed ants are available in the UK as a gimmicky snack.

Save the planet?

Beef is a significant source of protein but rearing cattle uses valuable land inefficiently. This land could be used to grow food for humans. Insects are tremendously efficient at converting vegetation such as leaves (much of which we can't get any nutritional value from) into protein that can be eaten. As the world population heads towards nine billion by 2045, eating insects could be a more appropriate source of protein.

Much of the world already eats insects

Insects already have a long history as foods in many places around the world. When you travel past the cosy borders of the UK you find that they are available in markets from Thailand to South Africa and across much of Central and South America. They command a high price in Mexico, where edible flies and ant eggs are highly prized.

They are healthy

Most insects contain little fat, lots of protein and are packed with iron and calcium.

You'll eat them eventually – may as well start now

Insect protein is cheap to produce, and animal protein is becoming more expensive. Eventually we'll see bug-burgers in the shops and you'll buy them not because you prefer them, but because a bug-burger will cost £5, while a beef burger will cost £25.

One final point

In the future, we could farm insects in the UK or offer poorer countries an income from selling them to us.



Text C is adapted from an article in a current affairs magazine.

Eating insects isn't as eco-friendly as people say

Insects such as crickets are often declared to be the future of food – an edible, eco-friendly solution to an eventual protein shortage that farm animals just can't fix. Even the United Nations promotes insect-eating as a promising, protein-packed way to feed the 9 billion people that will live on earth by 2050. In their report it says, "A benefit of insects as an alternative animal protein source is that they can be reared sustainably on organic waste (e.g. manure and compost)."

Because insects emit far fewer greenhouse gases than livestock and consume way less water, they have a comparatively tiny ecological footprint, and they're thought to thrive on basically anything, even organic waste. This sums up the main ecological appeal of eating insects because growing the grain used in animal feed takes up huge water and energy resources.

But do crickets really have the potential to be the new chicken or beef? Not yet, according to a new study. When researchers raised crickets on several different diets and tried to see how much protein they produced, they got some disappointing results. One group of crickets ate grain-based feed, while others survived on food waste. The researchers measured how big the crickets grew and how much edible protein they produced. Diet made a huge difference. Those that ate a diet of food waste were no more efficient in producing protein than chickens. The most successful crickets at producing protein were those that ate a grain-based diet similar to what most chickens eat. However, these crickets were only slightly better than chickens at producing protein.


Swapping chickens for crickets – while feeding them the same thing – is unlikely to make a real difference. The farming of insects is more likely to contribute effectively to human nutrition if the insects do not rely on a similar diet to conventional livestock.



Dried grasshoppers, mealworms and crickets seasoned with spices


Text D shows information about bees.

WHY IS THE HONEY BEE SO IMPORTANT?




THE HONEY BEE IS A POLLINATOR

HOW MUCH OF THE WORLD'S CROPS RELY ON THE HONEY BEE?




According to the Pollination Handbook, "one-third of our total diet is dependent on insect-pollinated plants."




Greenpeace USA takes it further, claiming, "70% of our food crops are pollinated by bees."


HOW MANY OF THE WORLD'S WILD FLOWERS DO THEY POLLINATE?




90% of wild plants thrive because of cross-pollination by bees.




MEDICINAL USE



Bee sting API therapy can be used to treat arthritis.




Antibiotic treatment (with honey) has been used to help victims of burns.



Studies have shown that honey can help to relieve a sore throat.

DIFFERENT TYPES OF BEES



There are around 25,000 known species of bee worldwide, and they can be divided into over 4,000 types of bees, belonging to 9 groups or 'families'.

Text E is adapted from a fantasy novel about bees.

The extract below is a fictional account of a young bee's arrival into the world.

- 1 The cell squeezed her and the air was hot and fetid. All the joints of her body burned from her frantic twisting against the walls. Her head was pressed into her chest and her legs shot with cramp, but her struggles had worked – one wall felt weaker. She kicked out with all her strength and felt something crack and break. She forced and tore and bit until there was a jagged hole into fresher air beyond.
- 5 She dragged her body through and fell out onto the floor of an alien world. Static roared through her brain, thunderous vibration shook the ground and a thousand scents dazed her. All she could do was breathe until gradually the vibration and static subsided and the scent evaporated into the air. Her rigid body unlocked and calmed her mind.
- This was Arrivals Hall and she was worker bee Flora, number 717.
- 10 Certain of her first task, she set about cleaning out her cell. In her violent struggle to hatch she had broken the whole front wall, unlike her neater neighbours. She looked, then followed their example, piling her debris neatly by the ruins. The activity cleared her senses and she felt the vastness of the Arrivals Hall, and how the vibrations in the air changed in different areas.
- 15 Row upon row of cells like hers stretched into the distance, and there the cells were quiet as if the occupants still slept. Immediately around her was great activity with many recently broken and cleared-out chambers, and many more cracking and falling as new bees arrived. The differing scents of her neighbours also came into focus, some sweeter, some sharper, all of them pleasant to absorb.