ST PAUL'S GIRLS' SCHOOL

Name : _____

Group _____

Comprehension Paper - The Book of Food

1 hour 15 minutes

This booklet contains a series of articles about food. There is also a supplementary source book which you will need for Sections A and B. We have selected some interesting pieces about how the way we prepare and eat food has evolved over time. You will read about how diet and attitudes to food can be affected by circumstances and environment. We hope you will enjoy it.

Please answer the questions in the order set. Work at a steady pace, reading the information in the text passages and answering the questions as quickly as you can. If you find something tricky, leave it and go on to the next question. **Do not worry if you do not finish the paper.**

Write all your answers, including any working out or rough work, in this booklet. If you want to highlight or underline any details in the sources please do so.

You will need a ruler, a pencil, a pen and a rubber. You can write in either pencil or pen.



SAMPLE

Section A
Questions

Read the article entitled 'Record-breaking chilli is hot news' which can be found in the source book. Then answer the questions below.







1 Chillies belong to the same plant family as peppers and tomatoes.

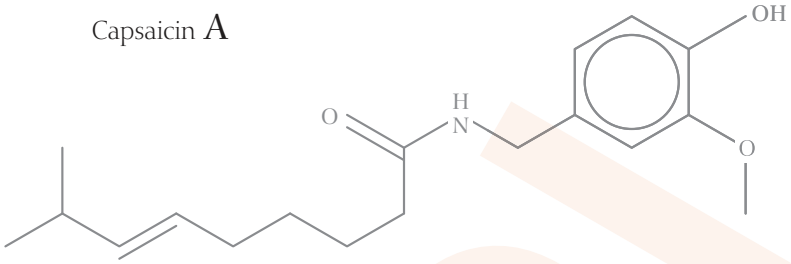
Why do you think chillies, along with tomatoes and peppers, are technically fruits rather than vegetables? Why do some people think they are vegetables? **[3]**

SAMPLE

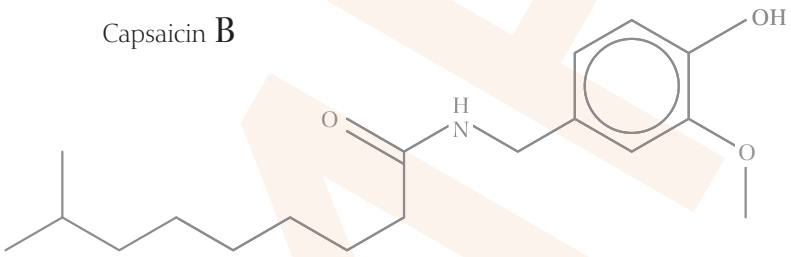
2 Fig 1 shows the chemical structure of four different types of capsaicin.

Fig 1

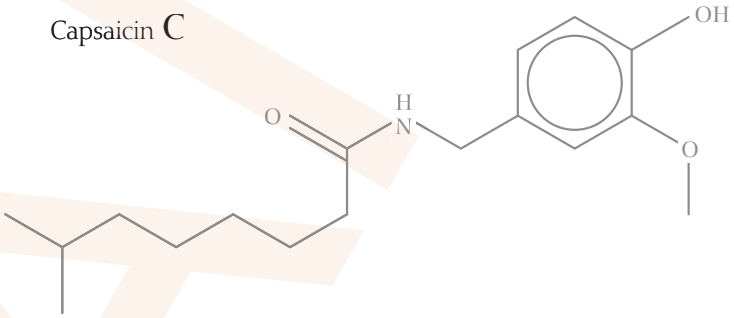
Capsaicin A



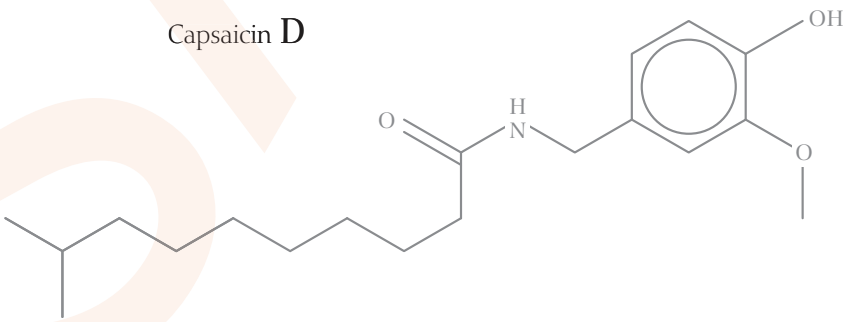
Capsaicin B



Capsaicin C



Capsaicin D



SAMPLE

a) On the diagram of capsaicin A circle the part of the structure that all four capsaicin types have in common. Label this as (a)

b) On the diagram of capsaicin B circle the difference between capsaicin B and capsaicin A. Label this (b)

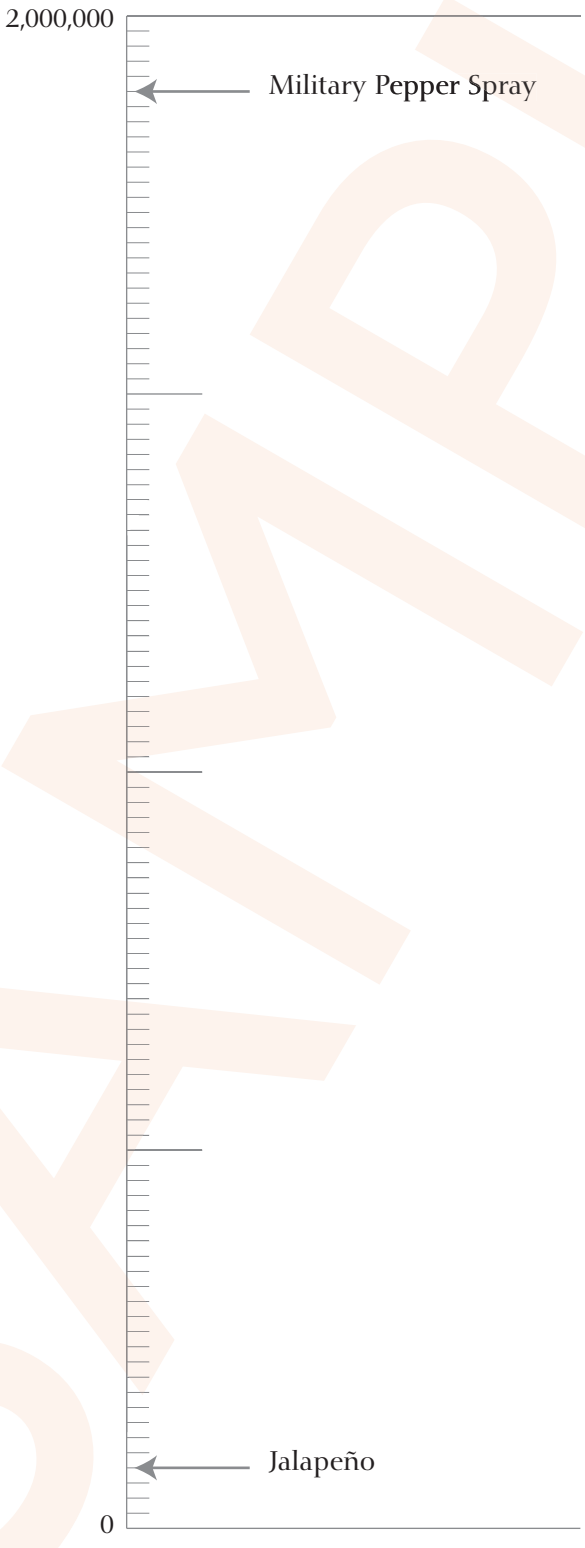
c) On the diagram of capsaicin D circle the difference between capsaicin C and capsaicin D. Label this as (c) **[4]**

SAMPLE

3 Fig 2 shows an incomplete chart of the Scoville scale.

Add the chillies described in the passage to the scale. Some have been done for you. **[3]**

Fig 2



SAMPLE

4 Using the description of Scoville's scale to help you, design an experiment to investigate the spiciness of different chillies grown in the garden.

Write a clear step by step method which clearly describes how you would carry out the experiment to compare the spiciness of the chillies. **[4]**

5 Name two variables that you would need to keep the same to make your experiment a fair test. Describe how you would do this and why it is necessary. **[4]**

6 What problems could arise from using the tongues of tasters to detect the level of capsaicin in chillies? **[2]**

SAMPLE

Section B

Rationing during the Second World War

Read the text and sources entitled 'Rationing during the Second World War' which can be found in the source book. Then answer the questions below.

Questions

1 In your own words explain what rationing was. **[2]**

2 In which year did the Second World War end? Use the text to help you. **[1]**

3 Why do you think that rationing continued so long after the end of the war? **[2]**

4 Look at Source H. What do you think the aim of this poster was? Use details from the source in your answer. **[4]**

SAMPLE

5 Look at Sources D and E. What can you learn from these sources about children's diets during World War Two? Use details from the sources in your answer. **[4]**

6 Look at Sources A and C. They are very different sources. Why are they so different? **[6]**

7 Look at the two posters about carrots (Sources F and G). Which do you think is the more effective poster and why? **[6]**

SAMPLE

Section C

Foreign fruit

An intrepid explorer set off into the wilds of the tropical rainforest and was the first Westerner to come upon an indigenous tribe who had never met a foreigner before. He decided to try to learn their language and the first thing he set his eyes on was the wealth of fruit, so he went to and fro pointing at different things. The tribe members joined in the game and told him what everything was but he found it more complicated than he had expected.

Here are some examples of the fruits he looked at and the words used to describe them:



demati



bamati-na



hoset-na



debitia



fisetia

Cracking the code - Questions

1 What do you think the –na on the end of some of the words indicates? **[1]**

2 Which of the words below the fruit do you think should be used to describe it? Circle your answer. **[5]**

1



a) fimati
b) bamati
c) fiseti

2



a) debitia
b) hobitia-na
c) hobitia

3



a) bamati
b) hoseti
c) baseti

4



a) fipot
b) fibit
c) depot

5



a) demat
b) demat-na
c) homati-na

3 What patterns do you think the explorer worked out as he listened to the words and looked at the fruit? Give examples of what he might have found. **[3]**

SAMPLE

4 Using the tribal language, what would you call the following fruit? **[6]**

1 2 3







Then one day, the explorer discovered this fruit!



It had never been seen before and never been given a name!

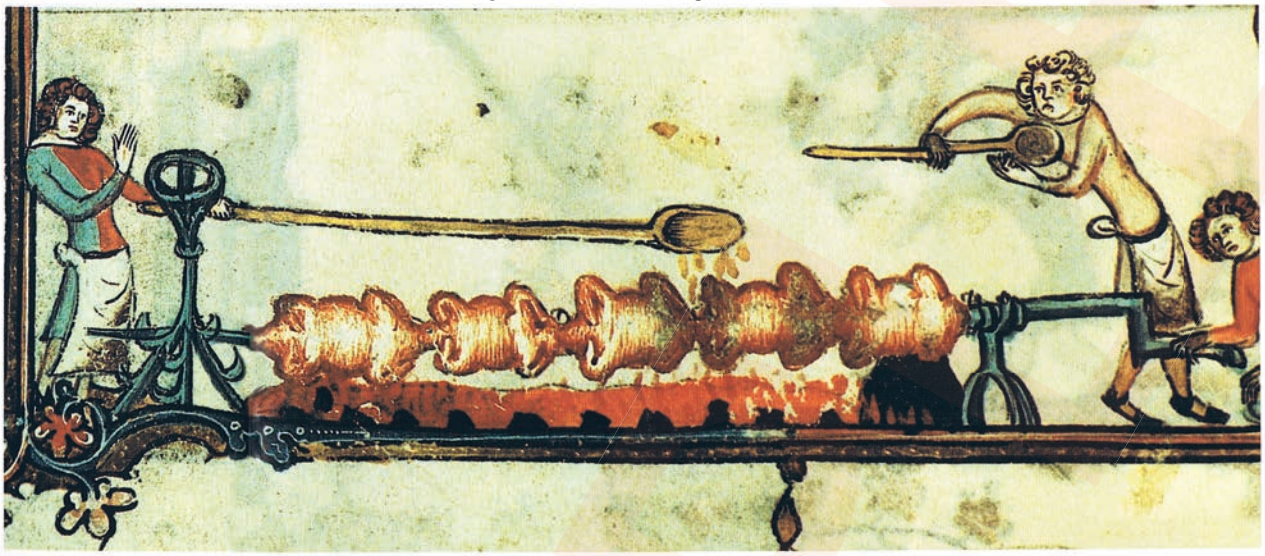
5 What name should he give it, bearing in mind what he has learned about the tribal language? Justify your answer. **[5]**

SAMPLE

Section D

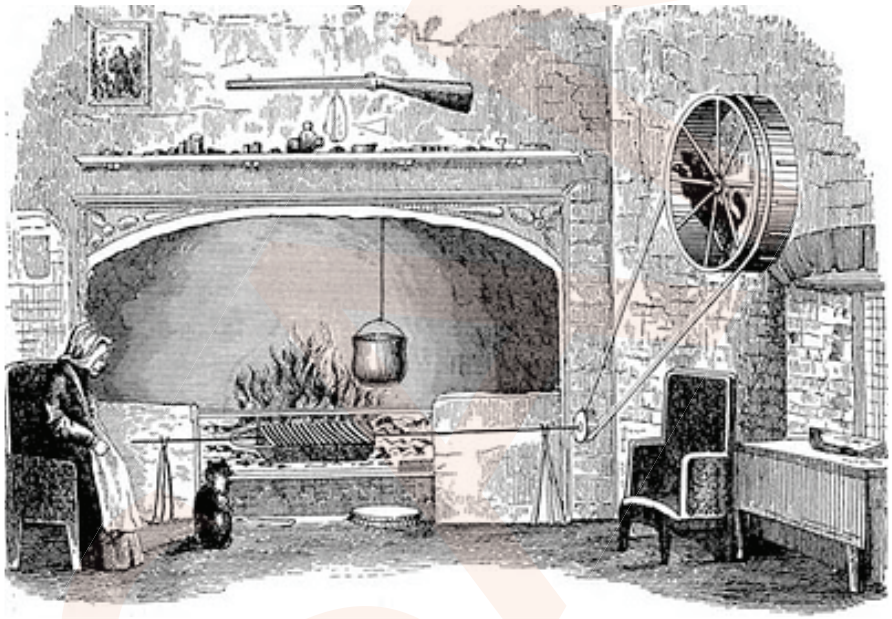
Roast Beef

Fig 1 – A medieval turnspit at work



It is a sad and surprising fact that very few modern Englishmen and women have ever tasted their national dish of roast beef. The dish we today call a 'roast' is in fact baked in an oven and is very different in character to the roast meat of our ancestors. To be truly roasted meat must be cooked on a spit in the radiant heat of an open fire. The meat is skewered on to the spit. This is a large metal rod which can be rotated so the meat is turned regularly.

Fig 2 – A turnspit dog working a **treadmill** attached to a spit



The most basic method was to turn the spits by hand which was a tiresome and very uncomfortable job due to the overpowering heat of the fire. A kitchen assistant known as a turnspit performed this task but dogs in treadmills were also frequently used to rotate the spits.

In the sixteenth century Doctor Caius described the turnspit dog as follows: 'There is comprehended under the curse of the coarsest kind a certain dog in kitchen service excellent. For when any meat is to be roasted, they go into a wheel which they turning about with the weight of their bodies so diligently look to their business that no drudge nor scullion can do the feat

more cunningly.' An eighteenth century writer tells us that these unfortunate creatures frequently ran away when there was any indication that a roast was about to be cooked.



Fig 3 – A bottlejack

In England, kitchens in large establishments were usually fitted with a smoke jack. This was a device that took advantage of the rising heat in the chimney to turn a vane which in turn rotated the spit via a simple train of gears and a chain. A visitor to a monastery in 1600 wrote 'I happened to notice a spit turning and immediately fell to wondering how it could carry on doing so seemingly all by itself. It had the power continuously to rotate like a clock that could wind itself up'.

By far the most popular method of roasting meat in England during the nineteenth century was the bottlejack. This was a small and convenient device that had a clockwork mechanism wound up with a simple key. The meat would be attached to the jack by a hook and then hung vertically in front of the fire. Bottle jacks were still being manufactured in the 1930s. As hot-air ovens became increasingly efficient during the course of the nineteenth century more cooks came to realise that open-fire roasting was very wasteful of fuel and the practice gradually died out. The oven door finally closed on the British roast just before the First World War..

SAMPLE

Questions



A turnspit dog



A modern day terrier

1 Look at the picture of a turnspit dog and a modern day terrier. What features do you think were bred into the turnspit dog to ensure it was able to turn the wheel efficiently? Why would they be useful features? **[3]**

2 Here is a description of how the smoke jack works from the 1826 book *A Treatise of Mechanics*.

'The smoke-jack is an engine used for the same purpose as the common jack; and is so called from its being moved by means of the smoke, or rarefied air, ascending the chimney, and striking against the sails of the **horizontal wheel** which being inclined to the horizon, is moved about of its axis together with the **pinion**, which rotates against the **cog wheel**. The cog wheel is connected to a **shaft** which causes the rotation of the **fly wheel**. The fly wheel carries the **chain**, which is attached and turns the spit. The horizontal wheel should be placed in the narrow part of the chimney, where the motion of the smoke is swiftest, and where also the greatest part of it must strike upon the sails.'

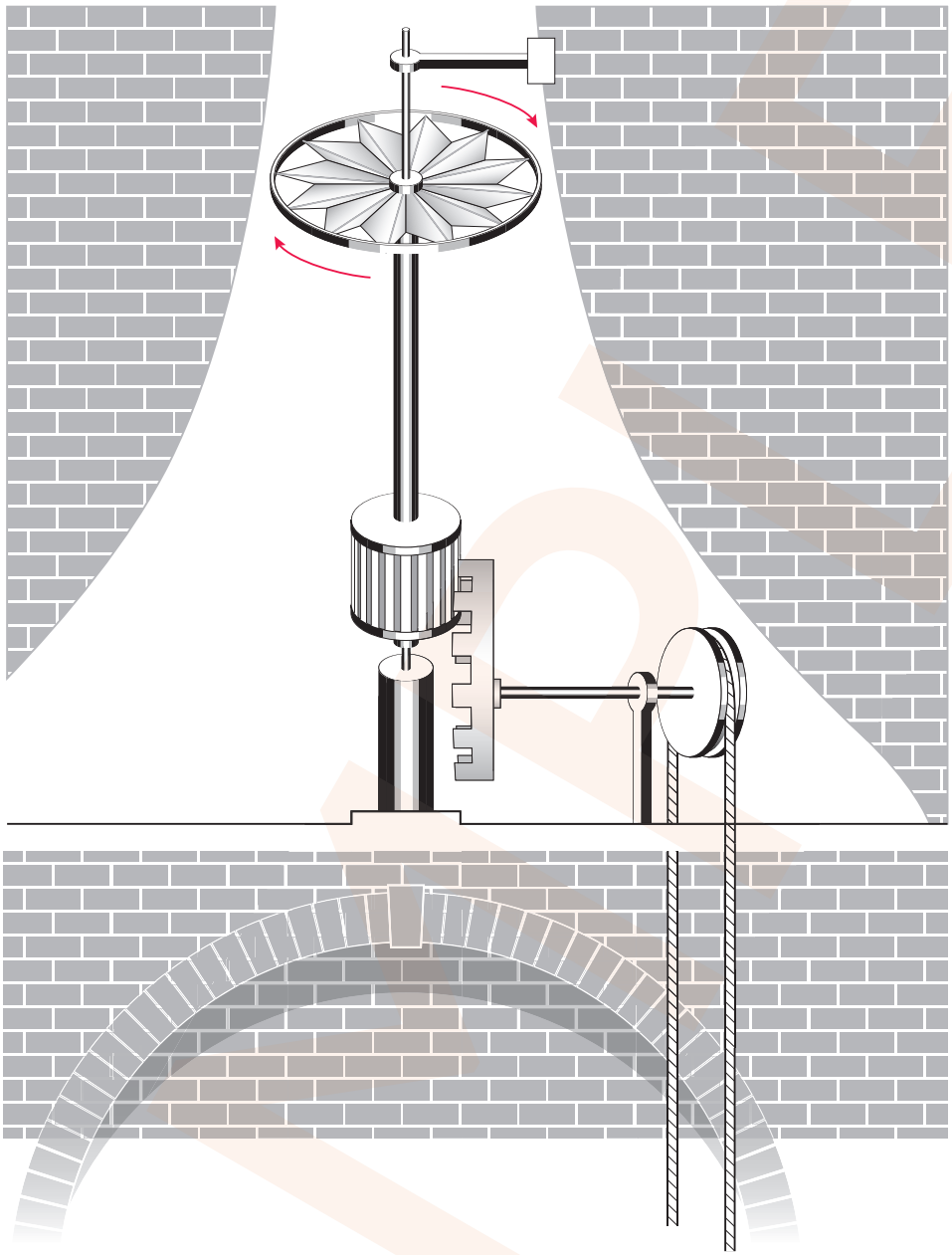
a) Label the parts underlined in the text onto the diagram of the smoke jack. **[3]**

b) The direction that one of the parts would rotate is marked on the diagram. Use arrows to indicate the directions the cog wheel and the chain would move. **[2]**

c) Finish the diagram using the space below it to show how you think the spit would be attached to the chain. **[1]**

SAMPLE

A diagram of a smoke jack



3 An owner of a large old country house found this bottle jack in his cellar and decided to carry out an experiment to find out if the mechanism was still working properly. He read in a book that one full winding up of the clockwork mechanism should last about an hour and should turn the meat four times one way and four times the other. His bottle jack was fully wound after seven turns of the key.



Every day for a week he wound up the bottle jack with different numbers of turns of the key and timed how long it twisted for each time. He wrote his results down in his diary.

'On Monday I turned the key once and the jack twisted for 8 minutes and 30 seconds. Seven full turns of the key on Tuesday caused the mechanism to twist for 59 ¾ minutes. On Wednesday two turns of the key resulted in the jack twisting for 17 minutes. Five turns of the key on the next day lasted 43 minutes. Six turns of the key lasted 51 and a half minutes. On the last day of the experiment three turns of the key made it twist for 25 minutes.'

a) Use the blank table on the next page to record the owner's results in a way which would help him see if there is a relationship between the number of turns of the key and how long the bottle twisted for. Remember to include suitable column headings.
Use the space below for rough working if you need it. **[4]**

SAMPLE

b) Draw a graph to show the results. **[5]**



c) Use your graph to estimate how long the bottle jack would turn for if the owner had remembered to turn the key four times. Show how you worked this out on the graph or in the space below. **[1]**

d) How many turns, forwards and backwards, would you expect the bottle jack to make if the key is turned three times? **[1]**

SAMPLE

Section E

Do certain foods make you happy?

Many people believe that there is a link between certain foods and our moods.
Here are a series of DIFFERENT opinions about whether foods affect our emotions.
Read them and answer the questions which follow.

"Most claims made on behalf of food affecting mental health are unsubstantiated".

Author 1

"Food does affect mood and in different ways. It is just very difficult to pinpoint the mechanisms involved".

Author 2

"Men and women certainly act as if they expect food to affect their behaviour – by consuming products that have virtually no nutritional value, such as alcohol and caffeine, because they know these are going to affect their moods."

Author 3

"American researchers who fed pieces of carrot to children found that the subjects rated those presented in McDonald's fries wrappers as being tastier than bits of carrot that were plainly wrapped. In reality, there was no difference".

Author 4

"I do research on the adult hippocampus, one of the few areas of the brain where new neurones continue to form throughout life, a process known as neurogenesis. The level of neurogenesis is closely linked to emotional states: if new neurones are encouraged to grow the likelihood of depression decreases. Research has found that diet can affect the growth of neurones in the hippocampus. We found that intermittent fasting – eating fully one day and taking no food the next day – had a substantial impact on the growth of new neurones. In addition, reducing calorie intake by around 30 per cent also boosted neural growth...I am convinced that the food we eat has an impact on our emotions",

Author 5

"It's not just what you eat that is important, it is the manner in which you consume it. Meals give you a chance to stop and take a break from the stress of the day. More and more people eat at their desks and that is not healthy. You should take half an hour out of your schedule and relax. Grabbing a bite out of a paper bag is not going to do your mental health much good".

Author 6

Questions

1 Look at the following words which are all underlined in the text. Which do you think is the most accurate definition of the words as used in the texts? Underline the correct answer **[5]**

unsubstantiated	~	not very clear	not very heavy	not backed up
mechanisms	~	workings	engines	structures
rated	~	found	judged	ranked
intermittent	~	irregular	random	off and on
manner	~	way	courtesy	speed

2 Using all the opinions and your own knowledge, explain how far you agree with the view that "There is enough evidence to prove that there is a link between food and happiness". **[10]**

SAMPLE

ST PAUL'S GIRLS' SCHOOL

Comprehension Paper - supplementary sources

You will need to read the article and sources in this booklet to help you with questions in Section A and Section B.

Read the article and sources carefully. You can highlight, underline or make notes in this booklet.

Section A

‘Record-breaking’ chilli is hot news

Experts have pronounced a chilli grown in the market town of Grantham as the hottest in the world.

Tests have revealed the “Infinity Chilli” to have a Scoville Scale Rating of 1,176,182 SHU; hotter than chilli reportedly used in hand grenades by the Indian military. But what is the attraction of this insanely hot ingredient?

Like many great discoveries Nick Woods, the owner of Fire Foods sauces, says he developed the Infinity Chilli accidentally when breeding chilli plants for his sauces.

“I knew as soon as I saw it in the polytunnel. It stood out, and when I dissected it I could tell by the skin tissue and the seeds that it was a hot one.”



Technically the chilli is not a vegetable but a fruit, from the plant genus Capsicum. The heat comes from the substance “capsaicin” which is found in all chillies. The attraction of it lies in the way it livens up our foods and makes the body produce pleasurable endorphins afterwards. It’s boom time for the chilli because Britain’s taste buds are thoroughly globalised. Many of us get used to curries and other hot snacks. Now the experts say we’re looking for bigger and better chilli-based thrills in the kitchen.

The chilli fire is measured by the Scoville Heat Unit (SHU) designed by American chemist Wilbur Scoville in 1912. He found that the tongue was far more sensitive than chemical tests being capable of detecting capsaicin dissolved in a solution a million times its volume. No laboratory test at that time could detect such a low concentration.

To put the Grantham chilli in context a cayenne can score up to 45,000 SHU on the Scoville scale. Even the hottest jalepeno is a tiny 80,000 SHU and the fiery Tabasco sauce is a mere 130, 000 SHU. The small, but deadly, bird eye chilli measures an average of 225,000 SHU. A scotch bonnet has a heat rating of 650,000 SHU. The Bhut Jolokia chilli weighs in at just over 820,000 SHU. At opposite ends of the scale there are the normal bell pepper at 0 SHU and military pepper spray at 1,900,000 SHU.

Despite the obvious immediate discomfort that comes from eating the hottest of chillies, doctors are yet to notice any lasting ill effects from them. In fact it's thought they could play a valuable part in pain relief and there are reports of them being used to help people undergoing chemotherapy.

Earlier this week Nick Woods decided to try one of his Infinity Chillies. "I actually ate one yesterday. It was all a bit worrying. The burn on my tongue lasted half an hour and the effects went on and on. At one point I was doubled over in pain and thinking about ringing the hospital. The worst was over by 11 o'clock, but it wasn't funny."

Section B

Rationing during the Second World War

Before the Second World War began, Britain imported about 55 million tons of food from many different countries every year. When war began in September 1939 this importing was stopped because the ships were being torpedoed by German submarines. There was a worry that this would lead to a shortage of food supplies in the shops so rationing was introduced in January 1940. Everyone was issued with a ration book containing coupons that had to be handed to the shop keeper when buying goods; the shop keeper would remove the appropriate coupons and take the correct amount of money. Bacon, butter and sugar were the first foods to be rationed, followed by others such as meat, eggs, cheese and milk. Potatoes, fruit and fish were not rationed. People were encouraged to grow their own food in their gardens or in an allotment. Gardens and parks were also used and children were encouraged to get involved by digging and planting seeds. Food rationing lasted for 14 years in Britain even though the war only lasted 6 years.

Source A

"Although most people suffered minor hardships, the poorest people in Britain ate better during the war than they had before it began. Unemployment had reached record levels during the 1930s but with the outbreak of war most of the unemployed found work in war industries or the military. As a result they could afford more food. Furthermore, unlike in peace-time, the government took measures to make sure that people ate reasonably well".

Pat Levy: ***The Home Front in World War II***, 2003

Source B

"The worst aspect of rationing, for most people, was that it made life even more of a struggle, even more tedious. Calculating coupons and points, queuing for ages and wondering how to make interesting meals out of not very much, were daily problems. Many people worked hard, for long hours and unappetising meals added to the monotony of life. People longed for an orange, or a chocolate bar".

Christopher Culpin: ***The era of the Second World War***, 2002

Source C

"We never starved, but we ate some...funny things. Best was American dried egg. You poured a thick trickle into the frying pan, then it blew up like a balloon, till it was two inches thick, like a big yellow hump backed whale. And we had whale meat...there was so much of it – great big steaks as big as your plate...we didn't care what it tasted like".

A boy from the North of England remembers rationing

Source D

"just a bit of news, I ate a real orange last week; also we have a new puppy, all black"

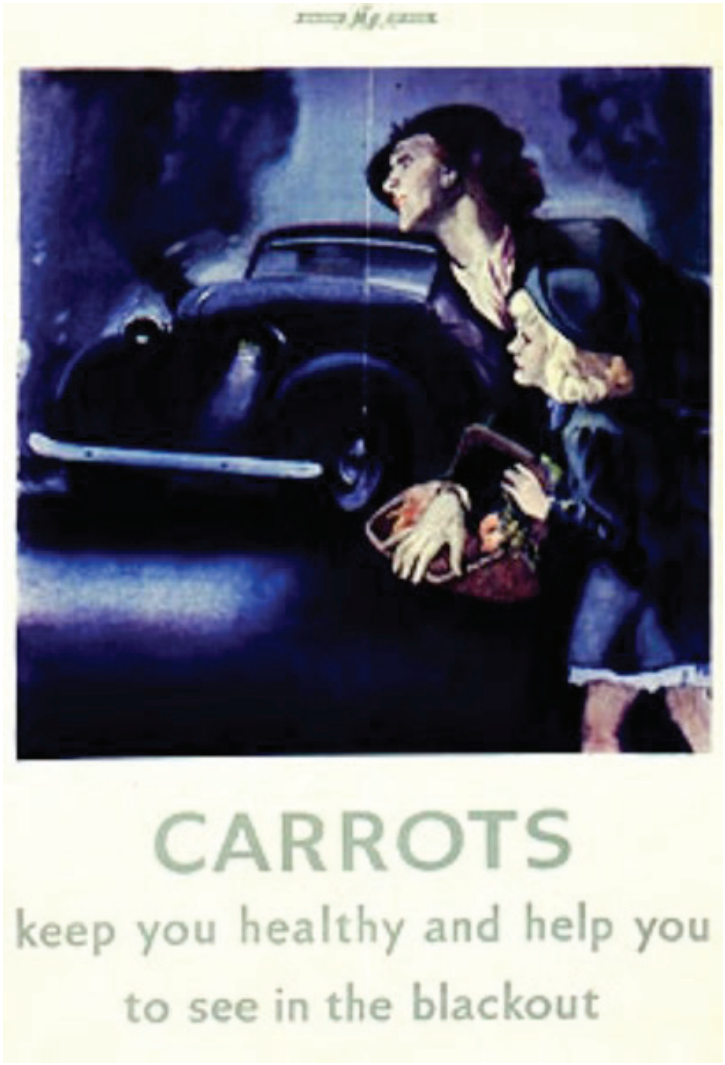
Letter from a mother to a child who had been evacuated during the Second World War

Source E



Children eating carrots on sticks during the Second World War

Source F



Source G

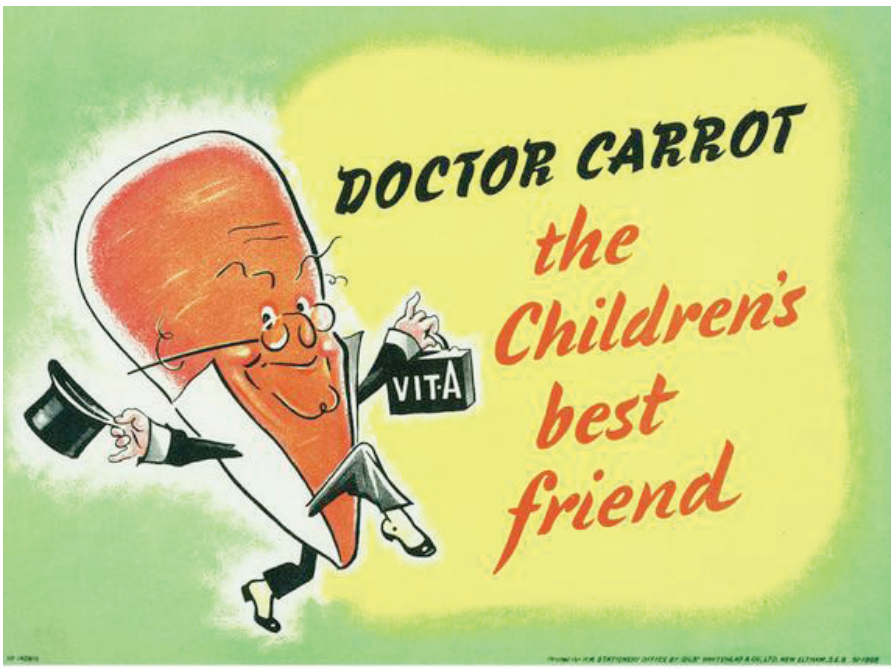


image © Imperial War Museum

Source H


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