

Independent Study Pack 8.1



Please work through this booklet so that it can be marked and feedback given.

- ✓ Use your own workbook to complete the tasks.
- ✓ Use the booklet to complete the tasks.

Name

VMG

Maths:

Complete 1 hour on Hegarty maths. Your teacher will be able to see what you have completed and give you feedback.



Reading – Pole to pole by Michael Palin

Read the text carefully and answer the questions below in full sentences in as much detail as possible.

The North Pole

It's 3.45 on a Saturday afternoon and I'm seventeen miles from the North Pole. Somewhere, a long way away, people are doing sensible things like watching cricket or digging gardens or pushing prams or visiting their mothers-in-law.

I'm squeezed tight into a small, noisy aeroplane descending through stale grey cloud towards an enormous expanse of cracked and drifting ice. With me are Nigel Meakin and his camera, Fraser Barber and his tape-recorder and Roger Mills and his pipe. With our two pilots, Russ Bomberry and Dan Parnham, we are the only human beings within 500 miles. Outside my window one of our two propeller-driven engines slowly eats away at a fuel supply which must last us another six hours at least. In little more than ten minutes our pilot will have to fashion a landing strip out of nothing more than a piece of ice - strong enough to withstand an impact of 12,500 lbs at eighty miles an hour. Below the ice the sea is 14,000 feet deep.

I'm sure I'm not the only one of us looking down on this desolate wilderness who hasn't wished, for an impure moment, that the North Pole, rather than being in the middle of an ocean, was solid, well marked and even supplied with a hut and a coffee machine. But the cracked and fissured ice-pack offers no comfortable reassurance - no glimmer of any reward to the traveller who has made his way to the top of the world. The Arctic Ocean, known to the Victorians as the Sea of Ancient Ice, stares balefully back as we descend towards it, reflecting nothing but the question: Why?

It's too late to ask the producer now, too late to begin to speculate why I so eagerly agreed to come here, and completely out of order even to mention that if we survive this ice landing we have only another 12,500 miles to go.

At two minutes past four our De Havilland Twin Otter, designed in the fifties and much loved and trusted by Arctic flyers, is finally over the North Pole. One almost looks for a point, a peak, a curve offering tantalizing glimpses of those huge land masses - Alaska, Siberia, Scandinavia and Canada - which back on to the Arctic. But all there is to see is ice and the nearer we get to it the more evident it is that the ice is not in good shape. Russ, a self-contained, taciturn man about whom I know nothing other than that my life is in his hands, leans forward from the controls, scanning the conditions below and frowning.

Technology cannot help him now. The decision as to how, when and ultimately whether to drop the plane onto the ice is for his judgement alone.

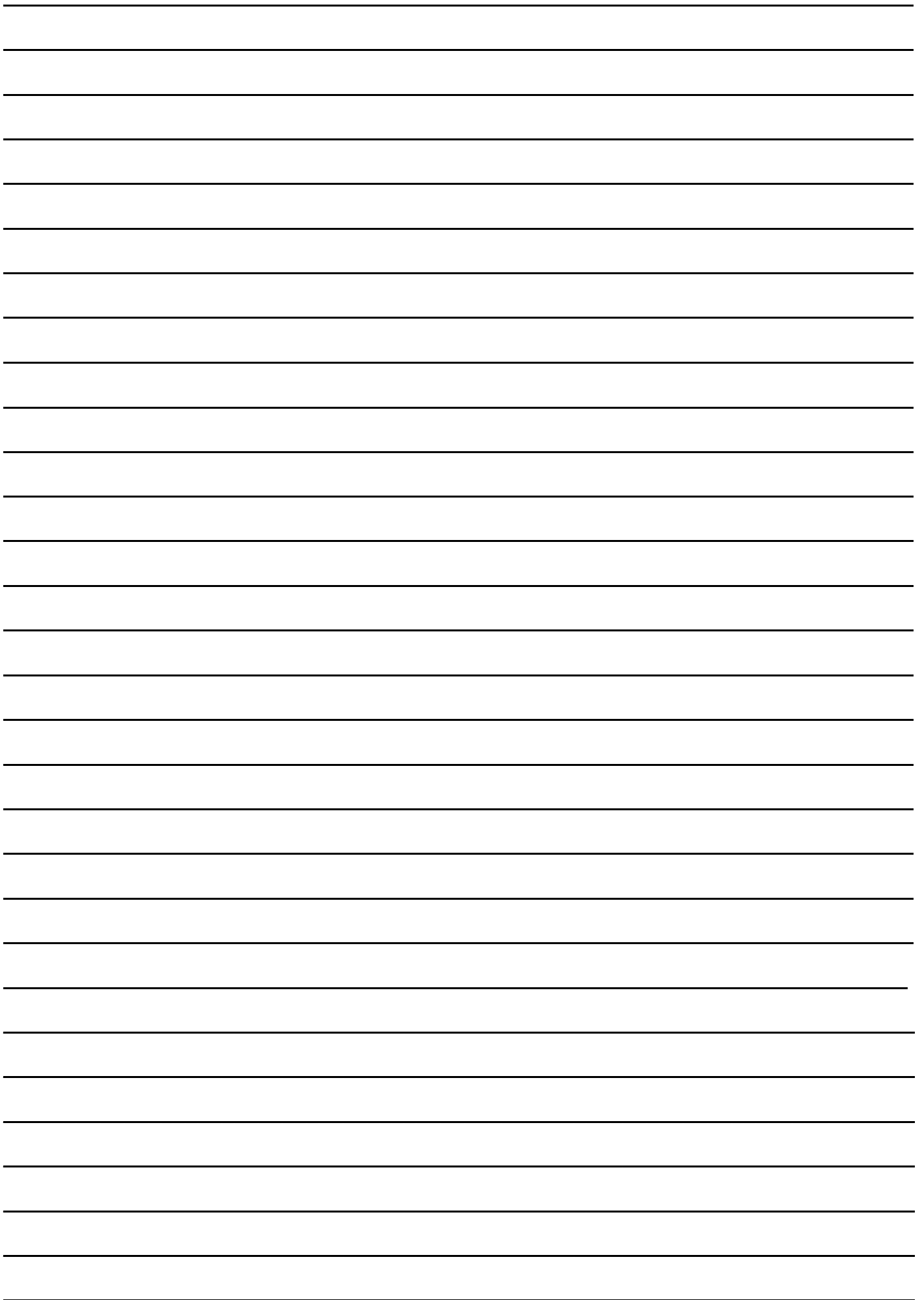
He clearly doesn't like what he sees and, by my watch, we have circled the roof of the world for nearly thirty minutes before a change in engine note indicates that he is at last throttling back in preparation for a landing. We drop low, running in over a tongue of open water, Russ staring hard at the ice as ridge walls taller than I'd expected rush up to meet us. Brace myself for impact, but it never comes. At the last minute Russ thrusts the overhead throttle control forward and pulls us up banking steeply away. He checks the fuel gauge and asks Dan, the young co-pilot, to connect up one of the drums for in-flight refuelling. Dan squeezes his way from the cockpit to the back of the plane, where he begins to fiddle around with spanners and tubes until the aircraft is rich with the smell of kerosene. The Pole remains 100 feet below us, tantalizingly elusive, probably in the middle of a black pool of melted water. Russ takes advantage of some marginally increased sunlight to attempt a second landing. Once again hearts rise towards mouths as the engines slow and a blur of ice and snow and pitch-black sea rises towards us, but once again Russ snatches the plane from the ice at the last moment and we soar away, relieved and cheated.

I make a mental note never to complain about a landing ever again. Russ circles and banks the plane for another fifteen minutes, patiently examining the floating ice for yet another attempt.


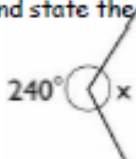
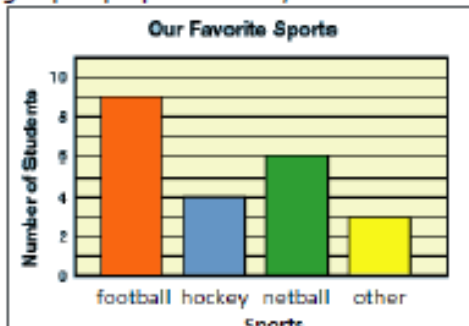
Question:

1. What do we learn about Michael Palin in this extract? (don't forget to use **inference**)
2. In paragraph two, what dangers are presented to us about the landing? Use quotes to back up your ideas.
3. What do we learn about the North Pole in this extract?
4. Highlight 8 **ambitious** vocabulary choices (that you don't already know) and ; a) explain what they mean , and b) write another, complex or compound, sentence to show your understanding.
5. What atmosphere is created in this excerpt? Use quotes to back up your ideas.

Answer the questions in the space below:



Maths

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Calculate $12 - 3 + (4 - 2) =$</p> | <p>2. Fill in the gaps on this function machine</p>  |
| <p>3. If the ratio of red socks to blue socks is 1:6, how many red socks would I have if I had 24 blue socks?</p> | <p>4. What is the perimeter of a football pitch of length 96m and width of 60m?</p> |
| <p>5. If I have 45 counters, 20 are red, 5 are green and the rest are blue, what is the probability of not choosing a red counter?</p> | <p>6. What is the mode of the following set of numbers? 64, 58, 64, 72, 55, 64, 55</p> |
| <p>7. Express 18 as a product of it's prime factors.</p> | <p>8. Write the nth term rule of the following sequence. -2, 5, 12, 19, 26</p> |
| <p>9. If I need 45g of sugar to make 5 donuts, how much sugar do I need to make 20 donuts?</p> | <p>10. Calculate the size of the angle labelled x, and state the reason for your answer.</p>  |
| <p>11. Find the median for the following set of numbers: 2, 8, 9, 2, 4, 5</p> | <p>12. If the probability of choosing a strawberry from a bag of strawberries, pears and apples is 0.37, and the probability of choosing a pear is 0.12, what is the probability of choosing an apple?</p> |
| <p>13. Write the following from smallest to largest: $\frac{1}{2}$ 0.6 $\frac{2}{3}$ 0.7 $\frac{4}{5}$</p> | <p>14. If $x = 6$ and $y = -3$, what is the value of $4x + 2y + 3x + 5y$</p> |
| <p>15. What is the width of a square with an area of 49cm²</p> | <p>16. What is the probability of choosing a red card from a standard pack of cards?</p> |
| <p>17. Decrease 140 by 15%</p> | <p>18. Solve the following equation: $4(x + 3) = 64$</p> |
| <p>19. How many metres are in 7.86km?</p> | <p>20. If the bar chart below represents favourite sports of a group of people, how many chose football?</p>  |

Science: Food groups



WEEK 7 SESSION 1 - Answer as many questions as you can in 5 mins

MENTAL STRATEGIES -
do these in your head

TIMESTABLES -
do these in your head

KEY SKILLS - you may use written calculations for these questions

| Q | Question | Answer |
|-----------------|----------------------------------------------------|--------|
| 1 | $4 + 1$ | |
| 2 | $66 + \square = 100$ | |
| 3 | What is half of 6? | |
| 4 | $122 - 10$ | |
| 5 | $56 + \square = 90$ | |
| 6 | $56 = 26 + \square$ | |
| 7 | $199 - 194$ | |
| 8 | $10 \times 5 = 50$, so $50 \div 10 = \square$ | |
| 9 | Write 2:15 pm in 24 hour clock format | |
| 10 | From 15:09, how many minutes until 15:30? | |
| Total out of 10 | | |

| Q | Question | Answer |
|-----------------|-------------------------|--------|
| 1 | $9 \times 5 = \square$ | |
| 2 | $60 \div 6 = \square$ | |
| 3 | $2 \times \square = 16$ | |
| 4 | $10 \div \square = 1$ | |
| 5 | $9 \times 10 = \square$ | |
| 6 | $12 \div 2 = \square$ | |
| 7 | $\square \times 5 = 20$ | |
| 8 | $\square \div 4 = 6$ | |
| 9 | $8 \times 3 = \square$ | |
| 10 | $18 \div 6 = \square$ | |
| Total out of 10 | | |

| Q | Question | Answer |
|-----------------|-------------------------------------------------------------------------|--------|
| 1 | List all the factors of 2 | |
| 2 | What is $\frac{1}{2}$ of 8? | |
| 3 | 65×38 | |
| 4 | $11661 - 7509$ | |
| 5 | 8.2×3.5 | |
| 6 | 173.2% as a decimal number | |
| 7 | $13 + 4.5$ | |
| 8 | $40 \div (-10)$ | |
| 9 | If $a = 4$ $b = 5$ and $c = 7$, what is the value of $3b - 2a$? | |
| 10 | $7 - (-5)$ | |
| Total out of 10 | | |



What's your **NINJA** Score?
Fill in your scores in the boxes
and calculate it now!

MY **NINJA** BELT:

MENTAL STRATEGIES:

TIMESTABLES:

KEY SKILLS: +

NINJA SCORE:

NUMERACY NINJAS

5 MINUTE SKILL CHECK

WEEK 6 SESSION 5 - Answer as many questions as you can in 5 mins

MENTAL STRATEGIES -
do these in your head

| Q | Question | Answer |
|-----------------|----------------------------------------|--------|
| 1 | $1 + \square = 20$ | |
| 2 | Double 54 | |
| 3 | $22 + 10$ | |
| 4 | $44 - 40$ | |
| 5 | $7 = 2 + \square$ | |
| 6 | $75 - 11 = 75 - 5 - \square$ | |
| 7 | $6 + 6 + 6 + 6 + 6 = 6 \times \square$ | |
| 8 | What is the time on the clock? | pm |
| 9 | Double 7 | |
| 10 | What is half of 44? | |
| Total out of 10 | | |

TIMESTABLES -
do these in your head

| Q | Question | Answer |
|-----------------|-------------------------|--------|
| 1 | $6 \times 6 = \square$ | |
| 2 | $2 \div 2 = \square$ | |
| 3 | $6 \times \square = 12$ | |
| 4 | $40 \div \square = 5$ | |
| 5 | $1 \times 9 = \square$ | |
| 6 | $40 \div 8 = \square$ | |
| 7 | $\square \times 7 = 49$ | |
| 8 | $\square \div 3 = 1$ | |
| 9 | $2 \times 2 = \square$ | |
| 10 | $48 \div 6 = \square$ | |
| Total out of 10 | | |



KEY SKILLS - you may use written calculations for these questions

| Q | Question | Answer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------|---|-----|--|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|---|---|---|---|---|---|---|---|---|---|--|
| 1 | What is the value of 11^2 ? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | $7905 + 626$ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | $(10 - 9) \times 1$ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Write 744620 in words. (Use the opposite page for your answer) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | $0.67 \div 100$ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | $3 \times (-1)$ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Round 1.982 to 2 d.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | $(-3) + (-6)$ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | Round 0.2352 to 3 s.f. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Letter at (0, 1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Q | R | S | T | U | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| V | W | X | Y | Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total out of 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

What's your **NINJA** Score?
Fill in your scores in the boxes and calculate it now!



MY **NINJA** BELT:

MENTAL STRATEGIES:

TIMESTABLES:

KEY SKILLS: +

NINJA SCORE:

What's on the menu?



There are seven things needed for a good diet; carbohydrate, fat, protein, vitamins, minerals, fibre and water. These things are needed for energy, growth and repair, and health. Answer the questions about these three meals.

| Meal A | Meal B | Meal C |
|---------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------|
| two sausages and a few chips, cola | two fish fingers, peas, carrots, mashed potato, milk | small amount of pasta with beans, lettuce and tomatoes, water |
| no pudding | apple pie | a pear |

- 1
 - a Which meal would be best for an active, growing teenager?
 - b Explain your answer.

- 2
 - a Which meal would be best for someone who wants to lose some body mass?
 - b Explain your answer.

 - c People often say that they are going on a diet. What does the word 'diet' really mean?

3 a Choose one of the meals and say what food substances are missing.

b What does the body need these substances for?

4 a Name one food from each meal that contains carbohydrates.

b One type of carbohydrate is sugar. Pick out the one thing from all the meals that you think contains the most sugar.

c What might happen if you have too much sugar?

5 What mineral would you expect to find in milk?

Geography - Sustainability of food resources... Can McDonalds help?

Europe, and the UK in particular, is increasingly seen as a place where being greener is good business sense.

Campaigns by various organisations and celebrity chefs have raised awareness of sustainable food, and the latest company to sit up and take notice is the fast-food giant McDonald's.

From this month, all of McDonald's Filet-O-Fish sandwiches sold in Europe will now bear a label from the Marine Stewardship Council (MSC), a British environmental watchdog, certifying that the fish used was caught in a sustainable way.

That means 100 million fish sandwiches a year will be made with fish caught in ways that should not leave oceans desolate and marine life at risk.

And each one will carry a label on the box to tell us so - much like fairtrade-certified coffee, or beef from cattle raised on land that does not threaten the rainforest.

McDonald's says its vision is to go even further than this - and "to become one of the leaders in sustainability for our industry sector and for major industries within our supply chain, driving positive changes through our entire operations".

Most people buy fish and don't have a clue where it is from - so what McDonald's is doing is a good thing" - Cat Dorey, Fishing expert, Greenpeace

Cat Dorey, a fishing expert with Greenpeace, welcomes the move by McDonald's - though she warns there are some flaws within the MSC system.

She says a fishery - an area where a certain type of fish is caught - can get an MSC certificate, and so sell its fish to chains like McDonald's, while still using practices that are detrimental to the environment.

"In some areas a fishery could be performing well, in other areas a fishery could be under-performing and endangering the environment, yet still pass and get MSC certified," Ms Dorey says.

"Also, MSC will certify companies who use 'bottom trawling' - an instant no-no for us because it destroys the bed of the ocean."

But, despite these reservations, she warns against dismissing McDonald's efforts.

The four species of wild fish that are used in the Filet-O-Fish are now all traceable to four legal fisheries because of the new MSC certification process.

McDonald's will source some of its cod from a sustainable Baltic fishery

They are:

- cod and haddock from the Barents Sea
- cod from the Baltic Sea
- pollock from Alaska
- hoki from New Zealand

Ms Dorey says: "There are so many illegal fisheries which destroy the environment and most people buy fish and don't have a clue where it is from. So what McDonald's is doing is a good thing."

Joanna Trigg, the spokeswoman for McDonalds understands that McDonalds is an extremely powerful company. "McDonald's has a voice that is heard," she says.

"We touch millions of customers on a daily basis and want to use this influence to make a real difference... We are proud to have made real progress in keeping fish available and affordable across Europe."

Sustainable future

The environmental journalist Eben Harrel says in his leading blog Ecocentric that the change is down to good business sense rather than sudden conversion to green principles.

"Big Food is starting to realise that unless it starts serving sustainable products it might find itself without a supply chain in the future," he writes.

Other, smaller food chains like the sandwich shop Pret A Manger, have long been using the labelling system to show that the fish in its sandwiches has been caught sustainably.

And the Marine Stewardship Council insists that its certification works. It says it can point to hard evidence that the scheme has helped fend off total collapse of some fisheries, avoiding a situation where so much fish has been caught that breeding can no longer take place, leaving the sea barren.

MSC spokeswoman Kate Wilcox says the standards it sets are designed to benefit both the fishing industry and the environment.

She says that if a fishery manages to qualify, then that reflects a "scientific certainty that the impact of the fishery on fish and the wider marine ecosystem is sustainable - that means that the fishery can continue productively indefinitely into the future".

And in order to carry an MSC label, fisheries must undergo a complete reassessment after five years by an accredited team.

Experts believe that when a huge corporation chooses ethical or sustainable food, it can have a significant impact.

They seem optimistic that putting the little blue label on the side of the burger box - even if just in Europe - will make a real difference.

1. Do MEDCs or LEDCs have a bigger carbon footprint?
2. Will McDonalds new concept of becoming more sustainable be introduced in MEDC's or LEDC's?
3. Why does a multinational company have more influence in changing people's ideas and helping to make countries more sustainable?
4. From reading the text and looking at the positive and negative arguments of what McDonalds and MSC are trying to achieve. Which argument is stronger? Why?
5. What else do you think McDonalds could do to be more sustainable and help influence the public to be more sustainable? Give reasons for your answers.