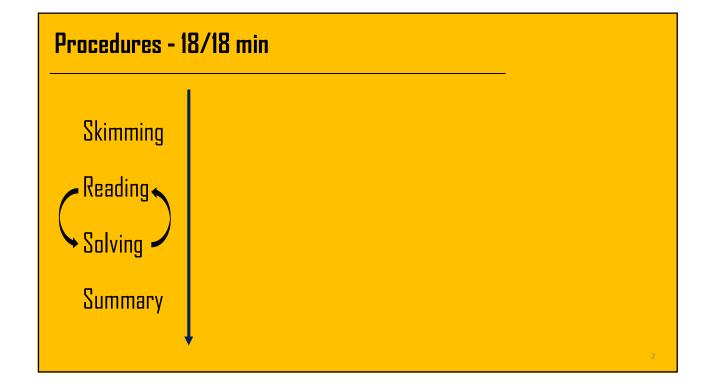
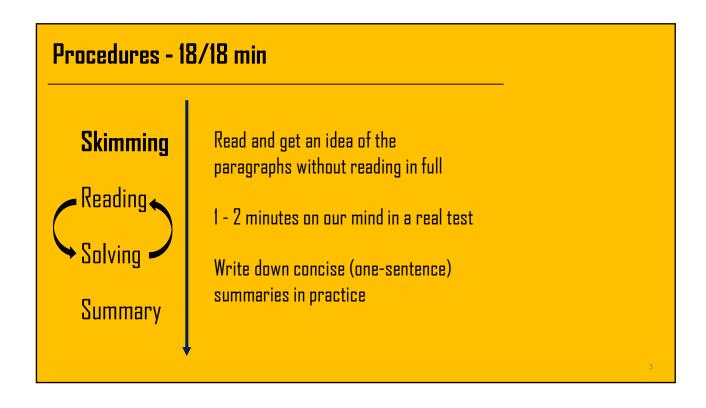
TOEFL Reading Season 1

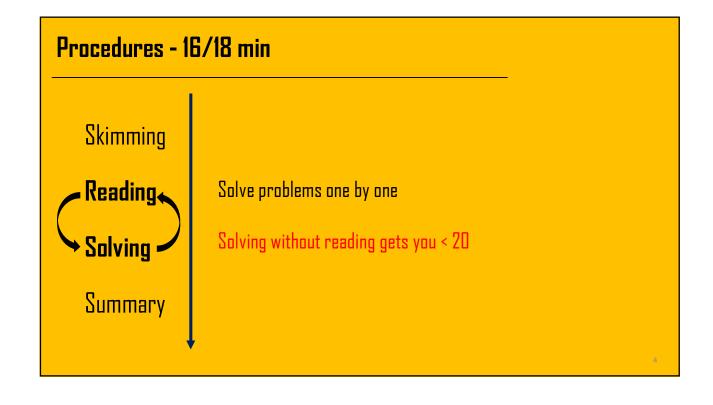
Session

- l. Intro
- 2. Prep plan
- 3. Skimming
- 4. Prob solving I
- 5. Prob solving II
- 6. Summary
- 7. From beginning to end









Reading Topics Animals and plants Natural science Social science Humanity & Arts	20% 30% 40% 10%	Listening Lecture To Animals and plants Natural science Social science Humanity	pics 20% 30% 24% 26%	Integrated Speaking Animals and plants Psychology Business Other topics	Topics 30% 26% 16% 28%
Prepare Progressively			Integrated Writing T Animals and plants Natural science	opics 30% 30%	
				Social science Other topics	20% 20% ⁵

TPO 15 / Official 15 A Warm-Blooded Turtle



Vocab Paragraph 1 of 6

physiology noun

The branch of biology that deals with the normal functions of living organisms and their parts

reptile adjective

A class of vertebrate animal including snakes, lizards, crocodiles, turtles, and tortoises

chilly adjective Uncomfortably cool or cold



Vocab Paragraph 2 of 6

contradiction noun

A combination of opposing ideas or statements

feat noun

An achievement requiring great effort

by-product noun

A secondary and unintended result or product

bask verb

lie exposed warmth and light

radiation noun

The emission of energy

Vocab Paragraph 3 of 6

proportion noun

A part in comparative relation to a whole

sheer noun

Nothing other than

NOT to be confused with "shear – cut off"

9

Vocab Paragraph 4 of 6

supplement verb & noun

Add an extra element or amount to / something that enhances something else

insulate verb

Protect by interposing material

flipper noun

A limb without fingers by animals for swimming

saturate verb

Cause to hold the greatest possible amount of another substance

fibrous adjective

Consisting of fibers

compromise verb & noun

An agreement reached by concessions / settle a dispute by concessions cause to become weak

aerodynamics noun

The study of moving air and the interaction between air and solid bodies

countercurrent adjective & noun

In opposing direction of flow / opposing flow

Vocab Paragraph 5 of 6

coil verb & noun

Arrange in a sequence of circles / a length of something arranged in a spiral sequence

course verb

Move; flow / course through = move through

gull noun

A long-winged web-footed seabird

11

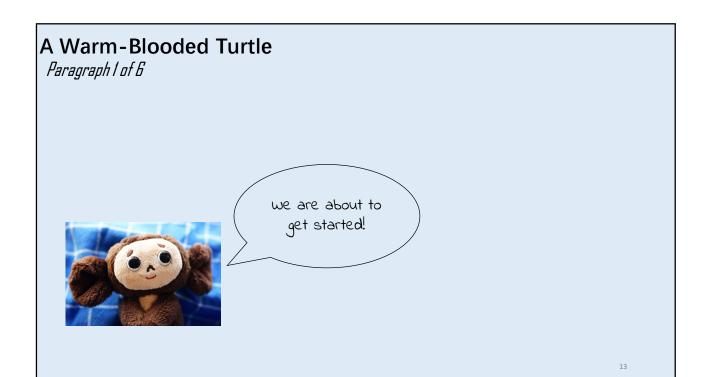
Vocab Paragraph 6 of 6

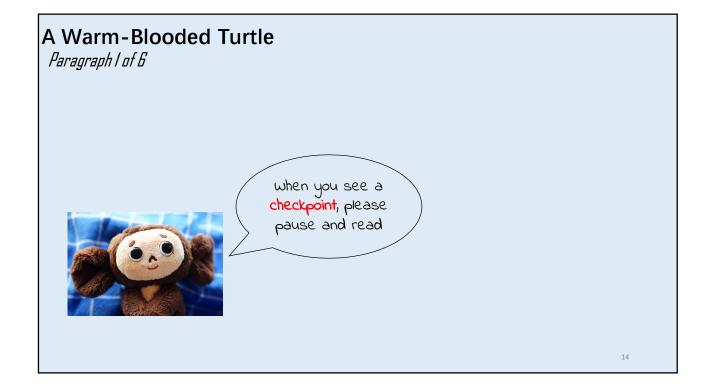
hatchling noun

A young animal that has recently emerged from its egg

immense adjective

Extremely large or great



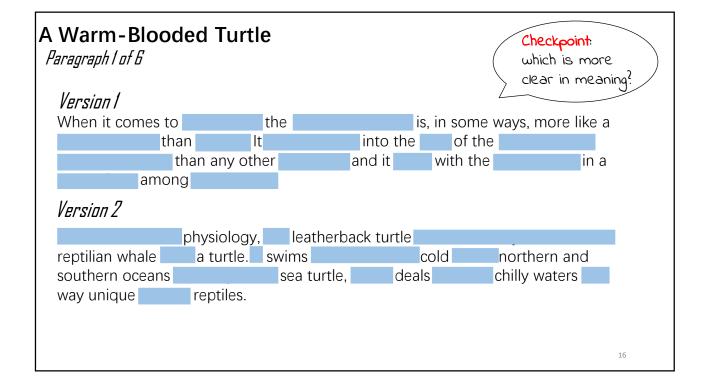


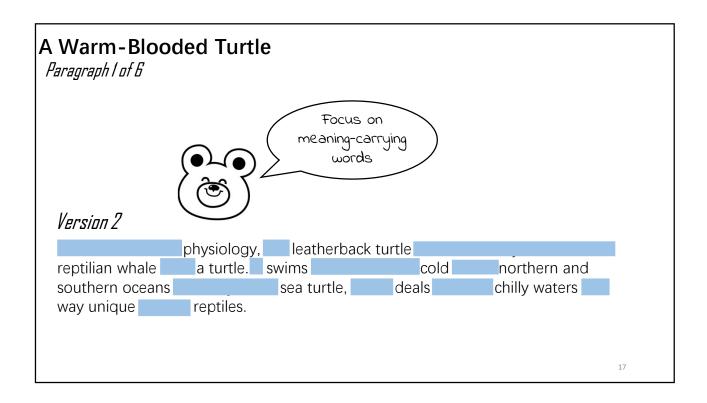
Paragraph I of 6



When it comes to physiology, the leatherback turtle is, in some ways, more like a reptilian whale than a turtle. It swims farther into the cold of the northern and southern oceans than any other sea turtle, and it deals with the chilly waters in a way unique among reptiles.

1.5





Paragraph 1 of 6

Summary:

Leatherback is like a whale and can swim in cold water.

Condensed summary:

Leatherback can swim in cold.

When it comes to physiology, the leatherback turtle is, in some ways, more like a reptilian whale than a turtle. It swims farther into the cold of the northern and southern oceans than any other sea turtle, and it deals with the chilly waters in a way unique among reptiles.

Paragraph 2 of 6

Checkpoint:
Spend 10-15
seconds on
the paragraph

A warm-blooded turtle may seem to be a contradiction in terms. Nonetheless, an adult leatherback can maintain a body temperature of between 25 and 26°C (77-79°F) in seawater that is only 8°C (46. 4°F). Accomplishing this feat requires adaptations both to generate heat in the turtle's body and to keep it from escaping into the surrounding waters. Leatherbacks apparently do not generate internal heat the way we do, or the way birds do, as a by-product of cellular metabolism. A leatherback may be able to pick up some body heat by basking at the surface; its dark, almost black body color may help it to absorb solar radiation. However, most of its internal heat comes from the action of its muscles.

19

A Warm-Blooded Turtle

Paragraph 2 of 6

A warm-blooded turtle may seem to be a contradiction in terms.

However, most of its internal heat comes from the action of its muscles.

Paragraph 2 of 6

Paragraph clues:

Contradiction

A warm-blooded turtle may seem to be a contradiction in terms.

Heat from muscles

However, most of its internal heat comes from the action of its muscles.

21

A Warm-Blooded Turtle

Paragraph 2 of 6

Paragraph clues:

Contradiction

A warm-blooded turtle may seem to be a contradiction in terms. Nonetheless, an adult leatherback can maintain a body temperature of between 25 and 26°C (77-79°F) in seawater that is only 8°C (46. 4°F). Accomplishing this feat requires adaptations both to generate heat in the turtle's body and to keep it from escaping into the surrounding waters. Leatherbacks apparently do not generate internal heat the way we do, or the way birds do, as a by-product of cellular metabolism. A leatherback may be able to pick up some body heat by basking at the surface; its dark, almost black body color may help it to absorb solar radiation. However, most of its internal heat comes from the action of its muscles.

Heat from muscles

Paragraph 2 of 6

Paragraph clues:

Contradiction

Maintain temperature Generate heat Pick up heat absorb radiation

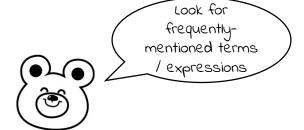
Heat from muscles

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23

A Warm-Blooded Turtle

Paragraph 2 of 6



Paragraph 2 of 6

Paragraph clues:

Contradiction

Maintain temperature Generate heat Pick up heat absorb radiation

Heat from muscles

Summary:

Source of turtle heat

How heat is generated

Where heat is from

2

A Warm-Blooded Turtle

Transition

Paragraph 2 of 6

Summary:

Source of turtle heat

How heat is generated

Where heat is from

A warm-blooded turtle may seem to be a contradiction in terms. Nonetheless, an adult leatherback can maintain a body temperature of between 25 and 26°C (77-79°F) in seawater that is only 8°C (46. 4°F). Accomplishing this feat requires adaptations both to generate heat in the turtle's body and to keep it from escaping into the surrounding waters. Leatherbacks apparently do not generate internal heat the way we do, or the way birds do, as a by-product of cellular metabolism. A leatherback may be able to pick up some body heat by basking at the surface; its dark, almost black body color may help it to absorb solar radiation. However, most of its internal heat comes from the action of its muscles.

Paragraph 3 of 6

Checkpoint:
Spend 15-20
seconds on
the paragraph

Leatherbacks keep their body heat in three different ways. The first, and simplest, is size. The bigger the animal is, the lower its surface-to-volume ratio; for every ounce of body mass, there is proportionately less surface through which heat can escape. An adult leatherback is twice the size of the biggest cheloniid sea turtles and will therefore take longer to cool off. Maintaining a high body temperature through sheer bulk is called gigantothermy. It works for elephants, for whales, and, perhaps, it worked for many of the larger dinosaurs. It apparently works, in a smaller way, for some other sea turtles. Large loggerhead and green turtles can maintain their body temperature at a degree or two above that of the surrounding water, and gigantothermy is probably the way they do it. Muscular activity helps, too, and an actively swimming green turtle may be 7°C (12. 6°F) warmer than the waters it swims through.

27

Ouiz 1:

Paragraph 3 of 6

What is the best title?

- A. Ways to keep warm
- B. A big turtle
- C. Size matters
- D. Muscles to keep warm

Checkpoint:
Pick your
answer ©

Leatherbacks keep their body heat in three different ways. The first, and simplest, is size. The bigger the animal is, the lower its surface-to-volume ratio; for every ounce of body mass, there is proportionately less surface through which heat can escape. An adult leatherback is twice the size of the biggest cheloniid sea turtles and will therefore take longer to cool off. Maintaining a high body temperature through sheer bulk is called gigantothermy. It works for elephants, for whales, and, perhaps, it worked for many of the larger dinosaurs. It apparently works, in a smaller way, for some other sea turtles. Large loggerhead and green turtles can maintain their body temperature at a degree or two above that of the surrounding water, and gigantothermy is probably the way they do it. Muscular activity helps, too, and an actively swimming green turtle may be 7°C (12. 6°F) warmer than the waters it swims through.

Paragraph 2 of 6

Paragraph clues:

Contradiction

Maintain temperature Generate heat Pick up heat absorb radiation

Heat from muscles

Summary:

Source of turtle heat

How heat is generated

Where heat is from

2

A Warm-Blooded Turtle

Paragraph 3 of 6

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Paragraph 3 of 6

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31

A Warm-Blooded Turtle

Paragraph 3 of 6

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Paragraph 3 of 6

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- A. ways to keep warm
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33

A Warm-Blooded Turtle

Paragraph 3 of 6

Summary:

Way 1 of 3 to keep heat – size Leatherbacks keep their body heat in three different ways. The first, and simplest, is size. The bigger the animal is, the lower its surface-to-volume ratio; for every ounce of body mass, there is proportionately less surface through which heat can escape. An adult leatherback is twice the size of the biggest cheloniid sea turtles and will therefore take longer to cool off. Maintaining a high body temperature through sheer bulk is called gigantothermy. It works for elephants, for whales, and, perhaps, it worked for many of the larger dinosaurs. It apparently works, in a smaller way, for some other sea turtles. Large loggerhead and green turtles can maintain their body temperature at a degree or two above that of the surrounding water, and gigantothermy is probably the way they do it. Muscular activity helps, too, and an actively swimming green turtle may be 7°C (12. 6°F) warmer than the waters it swims through.

Paragraph 4 of 6

Checkpoint:
Spend 15-20
seconds on
the paragraph

Gigantothermy, though, would not be enough to keep a leatherback warm in cold northern waters. It is not enough for whales, which supplement it with a thick layer of insulating blubber (fat). Leatherbacks do not have blubber, but they do have a reptilian equivalent: thick, oil-saturated skin, with a layer of fibrous, fatty tissue just beneath it. Insulation protects the leatherback everywhere but on its head and flippers. Because the flippers are comparatively thin and blade-like, they are the one part of the leatherback that is likely to become chilled. There is not much that the turtle can do about this without compromising the aerodynamic shape of the flipper. The problem is that as blood flows through the turtle's flippers, it risks losing enough heat to lower the animal's central body temperature when it returns. The solution is to allow the flippers to cool down without drawing heat away from the rest of the turtle's body. The leatherback accomplishes this by arranging the blood vessels in the base of its flipper into a countercurrent exchange system.

35

A Warm-Blooded Turtle

Paragraph 4 of 6

What is the best title?

- A. Size is not enough
- B. Fat and system
- C. Issues with flippers
- D. Blood vessels in flippers

Checkpoint:
Pick your
answer ©

Gigantothermy, though, would not be enough to keep a leatherback warm in cold northern waters. It is not enough for whales, which supplement it with a thick layer of insulating blubber (fat). Leatherbacks do not have blubber, but they do have a reptilian equivalent: thick, oil-saturated skin, with a layer of fibrous, fatty tissue just beneath it. Insulation protects the leatherback everywhere but on its head and flippers. Because the flippers are comparatively thin and blade-like, they are the one part of the leatherback that is likely to become chilled. There is not much that the turtle can do about this without compromising the aerodynamic shape of the flipper. The problem is that as blood flows through the turtle's flippers, it risks losing enough heat to lower the animal's central body temperature when it returns. The solution is to allow the flippers to cool down without drawing heat away from the rest of the turtle's body. The leatherback accomplishes this by arranging the blood vessels in the base of its flipper into a countercurrent exchange system.

A Warm-

Paragraph 4 of 6

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37

A Warm-Blooded Turtle

Paragraph 4 of 6

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A Warm-Blooded Turtle

Paragraph 4 of 6

Summary:

Way 2 of 3 to keep heat – fat insulation Way 3 of 3 to keep heat – the "system" Gigantothermy, though, would not be enough to keep a leatherback warm in cold northern waters. It is not enough for whales, which supplement it with a thick layer of insulating blubber (fat). Leatherbacks do not have blubber, but they do have a reptilian equivalent: thick, oil-saturated skin, with a layer of fibrous, fatty tissue just beneath it. Insulation protects the leatherback everywhere but on its head and flippers. Because the flippers are comparatively thin and blade-like, they are the one part of the leatherback that is likely to become chilled. There is not much that the turtle can do about this without compromising the aerodynamic shape of the flipper. The problem is that as blood flows through the turtle's flippers, it risks losing enough heat to lower the animal's central body temperature when it returns. The solution is to allow the flippers to cool down without drawing heat away from the rest of the turtle's body. The leatherback accomplishes this by arranging the blood vessels in the base of its flipper into a countercurrent exchange system.

A Warm-

Paragraph 4 of 6

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A Warm-Blooded Turtle Paragraph 5 of 6

Checkpoint: Spend 15-20 seconds on the paragraph In a countercurrent exchange system, the blood vessels carrying cooled blood from the flippers run close enough to the blood vessels carrying warm blood from the body to pick up some heat from the warmer blood vessels; thus, the heat is transferred from the outgoing to the ingoing vessels before it reaches the flipper itself. This is the same arrangement found in an old-fashioned steam radiator, in which the coiled pipes pass heat back and forth as water courses through them. The leatherback is certainly not the only animal with such an arrangement; gulls have a countercurrent exchange in their legs. That is why a gull can stand on an ice floe without freezing.

A Warm-Blooded Turtle Paragraph 5 of 6

Summary:

Way 3 of 3 to keep heat the "system"

Arrangement of system

In a countercurrent exchange system, the blood vessels carrying cooled blood from the flippers run close enough to the blood vessels carrying warm blood from the body to pick up some heat from the warmer blood vessels; thus, the heat is transferred from the outgoing to the ingoing vessels before it reaches the flipper itself. This is the same arrangement found in an old-fashioned steam radiator, in which the coiled pipes pass heat back and forth as water courses through them. The leatherback is certainly not the only animal with such an arrangement; gulls have a countercurrent exchange in their legs. That is why a gull can stand on an ice floe without freezing.

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A Warm-Blooded Turtle Paragraph 6 of 6

Checkpoint:
Spend 5-10
seconds on
the paragraph

All this applies, of course, only to an adult leatherback. Hatchlings are simply too small to conserve body heat, even with insulation and countercurrent exchange systems. We do not know how old, or how large, a leatherback has to be before it can switch from a cold-blooded to a warm-blooded mode of life. Leatherbacks reach their immense size in a much shorter time than it takes other sea turtles to grow. Perhaps their rush to adulthood is driven by a simple need to keep warm.

A Warm-Blooded Turtle Paragraph 6 of 6

What is this paragraph?

- A. Passage conclusion
- B. Theory limitation
- C. Future implication
- D. Personal anecdote



All this applies, of course, only to an adult leatherback. Hatchlings are simply too small to conserve body heat, even with insulation and countercurrent exchange systems. We do not know how old, or how large, a leatherback has to be before it can switch from a cold-blooded to a warm-blooded mode of life. Leatherbacks reach their immense size in a much shorter time than it takes other sea turtles to grow. Perhaps their rush to adulthood is driven by a simple need to keep warm.

A Warm-Blooded Turtle Paragraph 6 of 6

Conclusion, limitation, implication...etc.

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A Warm-Blooded Turtle Paragraph 6 of 6

Summary:

How do small turtles keep warm?

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A Warm-Blooded Turtle

1/6 - Leatherback can swim in cold

2/6 - Source of turtle heat

3/6 - Keep warm by size

4/6 - Keep warm by fat and system

5/6 - Arrangement of system

6/6 - How do small turtles keep warm?

Group9120

Session summary - skimming techniques

- 1. Focus on meaning-carrying words
- 2. Look for frequently-mentioned terms / expressions
- 3. Beware of transitions and twists
- 4. Expect conclusion / limitation / implication at the end
- 5. Skim the whole paragraph beginning and end could be misleading

Let the beginning and end fool you!



Procedures - 18/18 min

Skimming

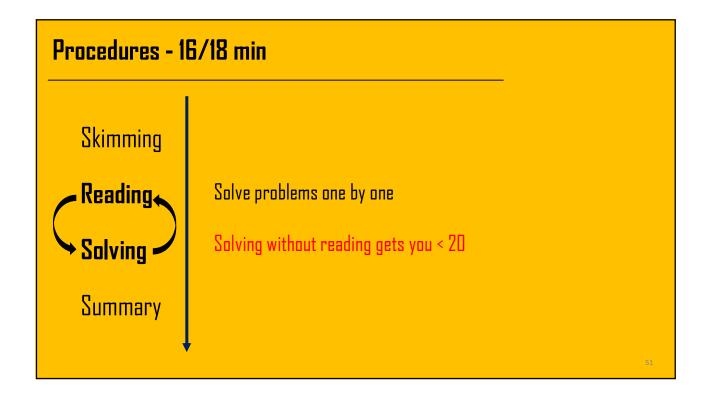
Reading

Summary

Read and get an idea of the paragraphs without reading in full

1 - 2 minutes on our mind in a real test

Write down concise (one-sentence) summaries in practice



TOEFL Reading Season 1

Session

- l. Intro
- 2. Prep plan
- 3. Skimming
- 4. Prob solving l
- 5. Prob solving II
- 6. Summary
- 7. From beginning to end





THANK YOU Any questions? © Leave a comment and I will get back to you.

