



Run for the planet

13-14



Co-funded by
the European Union

Run for the planet

Topic: Biology

Level: Secondary education (13-14 years old)

Concepts: Human body, muscular system, circulatory system

Time required: +/- 20 min

Summary of the activity: Three friends participate in a race, and you help them find out about muscle effort and body needs during this competition.

Material needed: For this story, you just need a pencil to write the words in the blanks and to tick the right answers!

Paths/mechanisms summary: Paragraphs are shuffled; the reader jumps from paragraph to paragraph, following the instructions.

Exercise mechanisms: Instructions given in the exercise; alternative narratives between correct and incorrect answers, then try the exercise again or continue the story.

Introduction

Three friends choose to participate in a charitable race in favour of the ecology and the planet. They will discover along the way how their muscles work but also learn to know their body better.

Help them by answering correctly to the MCQ exercises and filling the blanks of the texts with the right words.



To start playing, just read the first paragraph and see where it leads you!

1

Since they were very young, Adam, Léa and Mélanie have been best friends. They have always lived in houses next to each other in the same city, and although they may have completely different personalities, there is nothing else in the world they enjoy more than each other's company. They always listen to each other and never hesitate to give comfort to one another when it is needed.

Now, at the full height of their thirteen years old, they have ideas and opinions, and they want to have a voice in the world.

 **Go to paragraph 19.**

2

"You didn't drink enough water before we started the race. Now you need to drink a lot of water and stretch to make the cramp go away, then rest. I will stay with you," says Mélanie.

"You're right. But no, you have to end the race! Don't worry about me, I'll go find Adam. It will be fine," assures Léa.

"Are you sure?"

"Yes, go!"



Go to paragraph 33 to follow Mélanie.

3

"I'm glad we did all that. In the end, we will be able to express our ideas, and we have learned so many things about ourselves and our bodies today. Ultimately, our muscles are like the environment: we just have to make good use of the resources that are given to us and find a balance that allows us to stay in good health and to resist exhaustion — but without pushing ourselves too much and taking the risk of getting overwhelmed!"

"You're right. Well... Now, can we go home and read?" Adam asks.

They all laugh and start heading home.

Congratulations, you completed the story! You're now a true expert on muscles!

The end

4

After this small incident, they hear over the speakers a man saying the race will begin in ten minutes. They take place near the starting line. Mélanie and Léa start warming up: they jog in circles for a few minutes, and they stretch their legs, arms and neck, while Adam sits beside them and finishes a manga.

“You should warm up, Adam!” says Léa.

“I don't want to. I want to keep my energy for running.”

“But you should. Don't you remember what our professor told us last week?”



Go to paragraph 29 to find out about warming up.

5

“Excuse me?” asks a voice they don't recognize.

The three of them turn on their heels to face the mayor of the city. They can't believe their eyes. They greet her politely, and she gives them a warm smile.

“I saw your performance, young girl,” she tells Mélanie. “You would have won if you had kept going.” She turns to Léa and Adam. “I saw you seemed to have some physical pain. Are you okay?”

“We're fine, thank you. Only a little disappointed in ourselves, but most of all, we're happy to have engaged in the race together,” answers Léa.



Go to paragraph 15.

6

What's a cramp? Fill the blanks with the following words.

- dehydration sodium water stretch contraction
- shrink retract gaseous sudden

A cramp is a muscular of a part of a muscle or the whole of it. The muscle fibres violently and can make the muscle by up to 50%. This contraction is, intense and involuntary and doesn't generally last more than a few minutes.

Most of the time, if you have a cramp during a physical effort, it is because of In this situation, you need to stop and drink, still or : indeed, gaseous water is enriched in, which is salt, and it can be a good way to rehydrate yourself. You then need to the muscle the most you can.

➡➡➡ Go to paragraph 41.



7

Doping is the use of an illegal substance to improve athletic performance.

 **Go to paragraph 22** to follow the story.

8

"So? Did you win?" Adam asks.

"Actually, I gave up," answers Mélanie with a smile.


"What? But why?" Léa asks.

She puts her hands on their shoulders.

 **Go to paragraph 25.**

9

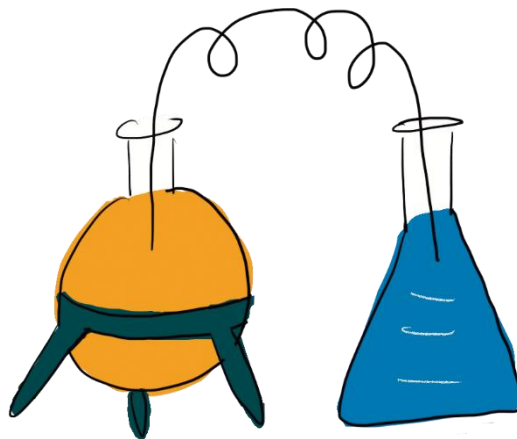
They start running. Adam takes off really fast, faster than he ran during the training: soon he is far beyond the two girls. He runs fast for a few minutes then, suddenly, they see him slow down. He is out of breath. He stops running and starts walking towards the sidewalk, giving up. The girls cheer him up and tell him to rest. But Adam knows the problem: their professor told them about it. Adam doesn't often do physical exercises, and despite his training of the last weeks with his friends, his endurance is very weak, and he started too fast. He sits down and thinks.

 **Go to paragraph 20** to find out what's happening to Adam.

10

Mélanie says, "Adam, remember what we talked about with our science professor last week. He told us about the things an athlete can sometimes do to cheat in a competition and improve their performance." You've got another chance:

 **Go back to paragraph 37** to try again.



11

"I'm not sure these would be the best things to eat right after a physical effort," says Adam.

"No, you're right... Let's think again," says Mélanie.

 **Go back to paragraph 36** to try again.

12



Mélanie is not really a sportsperson, but she likes to go for a run from time to time. She is really interested in science and loves to learn about it. She has a great knowledge of the human body and, most specifically, the muscles. As well as Adam, she is invested in the ecological cause but didn't necessarily want to participate in the race. She did it to follow her two friends, but also to demonstrate her scientific skills, which often bring her to help the people around her. She would like to observe the way her body reacts to effort as well.

 **Go to paragraph 31.**

13

“Ah, yes. Now I understand what's happening to my body,” Léa thinks.

 **Go to paragraph 2** to follow the story.

14

Léa says, "Come on, Adam. What does warm-up act against that allows you to feel better during the effort?"

"I don't remember. But I really want to finish my book before running, so it's alright, don't worry about me!" says Adam.

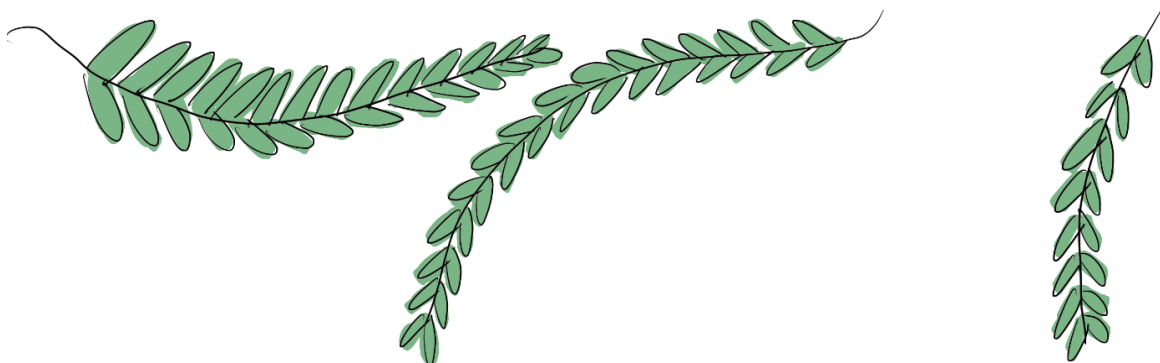
Léa answers, "It is not a good idea at all!"

 **Go back to paragraph 29** to try again.

15

"You're right. You know, I saw you three talking and it feels like you share a strong bond together. I happen to know Mr Smith, your science professor. He told me you were very involved with environmentalist ideas, and that of all his students you were the ones who had the most motivation to come to the city hall. Well... I know neither of you won, so you won't be invited to the official dinner. But I would very much like to welcome you in my office soon, to discuss these issues together."

 **Go to paragraph 35** to discover the 3 friends' reactions.



16

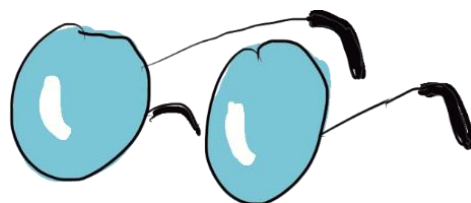
Mélanie says, “Adam, remember what we talked about with our science professor last week. He told us about the things an athlete can sometimes do to cheat in a competition and improve his or her performance.” You’ve got another chance:

➡➡➡ → **Go back to paragraph 37** to try again.

17

Adam isn’t at all a sportsperson. He is passionate about books and, most specifically, manga. If you asked him, he would, without any doubt, prefer to stay in his bedroom reading instead of participating in the race. However, he is really invested in the cause defended by the competition. He reads a lot about the environment and campaigns a lot for its protection. He then decided a few weeks ago to train a little alongside his two friends, and now he hopes to win in order to speak his mind to the mayor.

⚡ → **Go to paragraph 12** to learn more about Mélanie.



18

Today is the D-day. Our three friends meet near the starting line of the race and greet each other with love and encouragement. Adam notices that Mélanie is behaving weirdly. He asks her if she's okay.

"Actually, I have to tell you something," says Mélanie. "I failed my last training yesterday. I couldn't keep up and had to give up the run before getting to 5 miles. So, I thought of something. Do you know about doping?"

Léa suddenly gives her a concerned look. Adam shakes his head.

"No, what is it?"

 **Go to paragraph 37** to find out about doping.

19

Their city, along with its mayor, has organised a running competition. But it's a very special one: this competition is called "Run for the planet", and it grants money to environmentalist associations and organisations. The objective is to run for three miles, following a circuit around the town, alongside thousands of other contestants. But most of all, there is a big prize at stake: the person who wins the competition will be granted an invitation to the city hall for an official dinner with the mayor and her board, to discuss the environmental cause. The winner will be able to express his or her ideas and points of view, as well as suggest different environment-friendly solutions that could be implemented in the city to prioritise ecology.

 **Go to paragraph 30** to learn more about Léa.

20

The importance of physical exercises: fill the blanks with the following words.

oxygen

increase

exhaustion

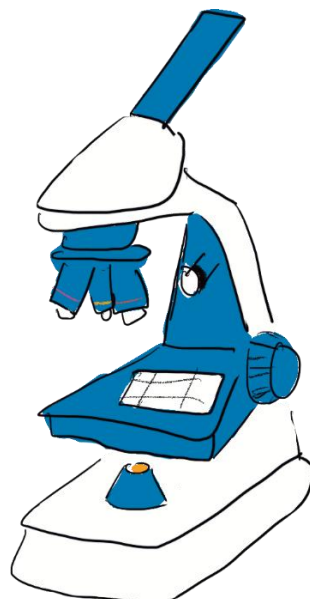
bloodstream

mitochondria

metabolism

Physical exercises (swimming, biking, jogging...) lead to an of the capillary vascularisation of muscles — which means that the is improved. That allows the, which is the place of cellular breathing, to get bigger and thus to give the muscles a better supply of during the effort. By doing physical exercises on a regular basis, the is in better health: it increases its endurance, its strength, and its resistance to

→ **Go to paragraph 40** to see the correct order.



21

Léa finally finds Adam. He is sitting on the sidewalk; his breath is still fast. He smiles at her and gives her a water bottle. She takes it and smiles too.

“You need to stretch if you don’t want to end up having a cramp or muscle soreness like me.”

“You’re right.”

Adam gets up. They both stretch for a little while, then they see Mélanie walking towards them. They leap to her feet.

 **Go to paragraph 8.**

22

“But you know it’s illegal, right? And most of all, those substances are very dangerous for your body. Did you actually use some?” Léa asks.

“No, not at all. I had a moment of hesitation because I was feeling bad about my performance, but I would never do something like that. I know it would only hurt me and have very negative effects on my body. But I still wanted to tell you because you’re my closest friends. I know I don’t need it, and I will do my best in any case.”

Léa and Adam both give her a hug.

“I’m glad you told us, and I’m glad you didn’t do it,” says Adam.

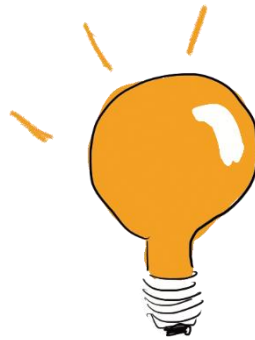
 **Go to paragraph 4.**

23

Léa thinks to herself, "I know this. My dance teacher told me many times about it. I think it has to do with the fact that I didn't drink enough water before starting..."

 **Go back to paragraph 6** to try again.

24



"You're right, I remember now," says Adam. He puts down his manga and starts warming up for a few minutes with his friends. He already feels better and he's more ready to begin the race.

 **Go to paragraph 27** to begin the race.

25

"It's no fun if I'm out there alone. We wanted to do this together, so... When one falls, the others follow, right? I preferred to make sure both of you were okay."

They hug each other and laugh. Adam sighs.

"Well, I guess no one will be able to go to the city hall today."

"It's alright, maybe another time!" says Mélanie. "But now we have to eat something to regain some energy."

 **Go to paragraph 36**

to find out what to eat after a physical effort.

26



"I'm not sure these would be the best things to eat right after a physical effort," says Adam.

"No, you're right... Let's think again," says Mélanie.

 **Go back to paragraph 36** to try again.

27

They hear the voice over the speakers saying the race will start in a few seconds. Mélanie and Adam both take a drink from their water bottle. The three of them take place on the starting line, alongside the other competitors. They are very determined to win.

3, 2, 1... Go!

 **Go to paragraph 9** to start running.



28

Adam asks himself, "What was it that the professor said again? I think he said that physical exercises improve the body's health and resistance, because the cells in the muscles can breathe more freely. Or something like that... Let's try again."

 **Go back to paragraph 20.**

29

The importance of warming up: fill the blanks with the following words:

body

motricity

conditions

activities

cold

performance

effort

Warming up helps prepare the body for the It warms the, helps avoid muscle injuries, improves the and the According to the done and the in which they are practised (weather, heat, time of the day, etc.) the duration of the warm-up can vary.



Go to paragraph 39 to see the correct order.

30

The challenge is very exciting for the three friends, and all of them want to prove themselves in their own way. Léa is a great sportsgirl. She has been practising ballet since she was little, and she trains several times a week. She mostly wants to win the race to win her spurs, so for a few weeks now, she has been doubling her usual training and wants to go beyond her usual capacities. She needs to outperform the other candidates.



Go to paragraph 17 to learn more about Adam.

31

The week before the race, they followed a science lesson on the muscles. Their professor taught them about their specificities. For instance, they learned that the muscle fibres have 3 characteristics: they are excitable (they can be stimulated by an electric current), they are contractile (they can shorten during a stimulation), and they are elastic (they always take back their form after a contraction or a stretch). They began to know more about their muscles.

 **Go to paragraph 18.**

32

“Ah, yes” Adam thinks. “I get it now. I guess I should do more physical exercises on a regular basis.”

 **Go to paragraph 34** to follow the story.

33

Mélanie starts running again. She's still feeling fine, and soon enough, she resumes her position in the race. Her breathing is alright, and she goes beyond most of the other runners. She starts to see the finish line...

 **Go to paragraph 21.**

34

Further away, Mélanie and Léa are still running, when Léa suddenly screams, "Ouch!"

She stops running and falls. Mélanie rushes to her.

"Are you okay? What's going on?"

"I have a cramp," says Léa. "It's a bad one, it really hurts." She starts to get back up, but Mélanie protests.

"If it hurts so badly, then you have to stop! Don't push it. I know you've been training all the time for the last few weeks. This is your body's reaction to an overly intensive training."

 **Go to paragraph 6** to find out about cramps.

35

Their faces light up with big smiles. They nod vigorously and accept the offer. The mayor nods with a smile and goes towards the finish line, where she meets the winner of the race.

"Wow," says Léa.

"Yes," says Adam, "that's amazing news!"

 **Go to paragraph 3.**

36

Water is the principal element that has to be given to the body after an effort. But food is important too:

What is it better to eat after a physical effort? (One correct, two incorrect)

- Dried fruits (fast sugars); Bread, cereals (starch); Milk, yoghurt (lactose)

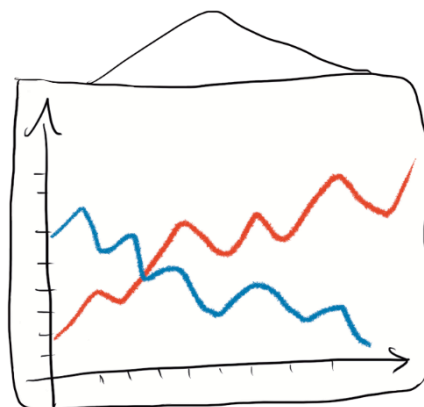
➡➡➡➡ ➔ **Go to paragraph 38.**

- Bread, cereals (starch); Milk, yoghurt (lactose); Red meat (fats)

➡➡➡➡ ➔ **Go to paragraph 26.**

- Red meat (fats); Sodas (sweet drinks); Bananas (fruits)

➡➡➡➡ ➔ **Go to paragraph 11.**



37



What is doping? (One correct, two incorrect)

- The use of an illegal substance to improve an athletic performance

 **Go to paragraph 7.**

- The fact to train a lot, in an intensive way, a few hours before an athletic performance

 **Go to paragraph 16.**

- The fact of giving up a competition after many hours of training

 **Go to paragraph 10.**

38



They pick out food from their backpacks. Léa brings out a bag of dried grapes, Mélanie starts drinking a liquid yoghurt and Adam eats a bar of cereals.

 Go to paragraph 5.

39

Check the correction.

Warming up helps prepare the body for the **effort**. It warms the **body**, helps avoid **cold** muscle injuries, and improves **performance** and **motricity**.

According to the **activities** done and the **conditions** in which they are practised (weather, heat, time of the day, etc.), the duration of the warm-up can vary.

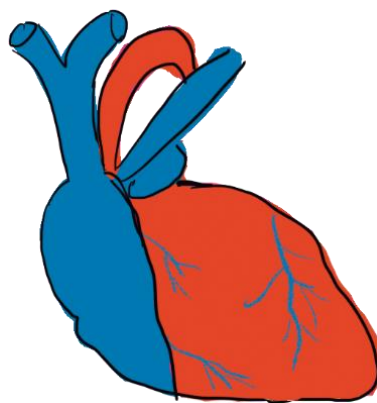
- If you put the words in this order  Go to paragraph 24.
- If you didn't  Go to paragraph 14.

40

Check the correction.

Physical exercises (swimming, biking, jogging...) lead to an **increase** in the capillary vascularisation of muscles — which means that the **bloodstream** is improved. That allows the **mitochondria**, which is the place of cellular breathing, to get bigger and thus give the muscles a better supply of **oxygen** during the effort. By doing physical exercises on a regular basis, the **metabolism** is in better health: it increases its endurance, its strength, and its resistance to **exhaustion**.

- If you put the words in this order  **Go to paragraph 32.**
- If you didn't  **Go to paragraph 28.**



41

Check the correction.

A cramp is a muscular **contraction** of a part of a muscle or the whole of it. The muscle fibres violently **retract** and can make the muscle **shrink** by up to 50%. This contraction is **sudden**, intense, and involuntary and doesn't generally last more than a few minutes.

Most of the time, if you have a cramp during a physical effort, it is because of **dehydration**. In this situation, you need to stop and drink **water**, still or **gaseous**: indeed, gaseous water is enriched in **sodium**, which is salt, and it can be a good way to rehydrate yourself. You then need to **stretch** the muscle the most you can.

- If you put the words in this order >>> → **Go to paragraph 13.**
- If you didn't >>> → **Go to paragraph 23.**





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