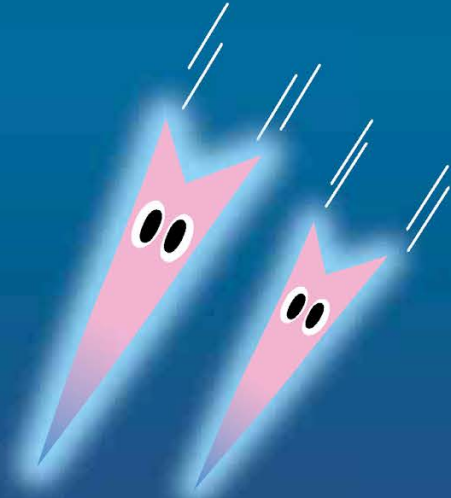


Hello! Radiation



INSS



Prologue

You might feel scared, in danger, or afraid of getting cancer or leukemia when you think about "Radiation."

We have heard a variety of stories and a lot of information about radiation because of the disaster at a nuclear power plant in Fukushima, Japan.

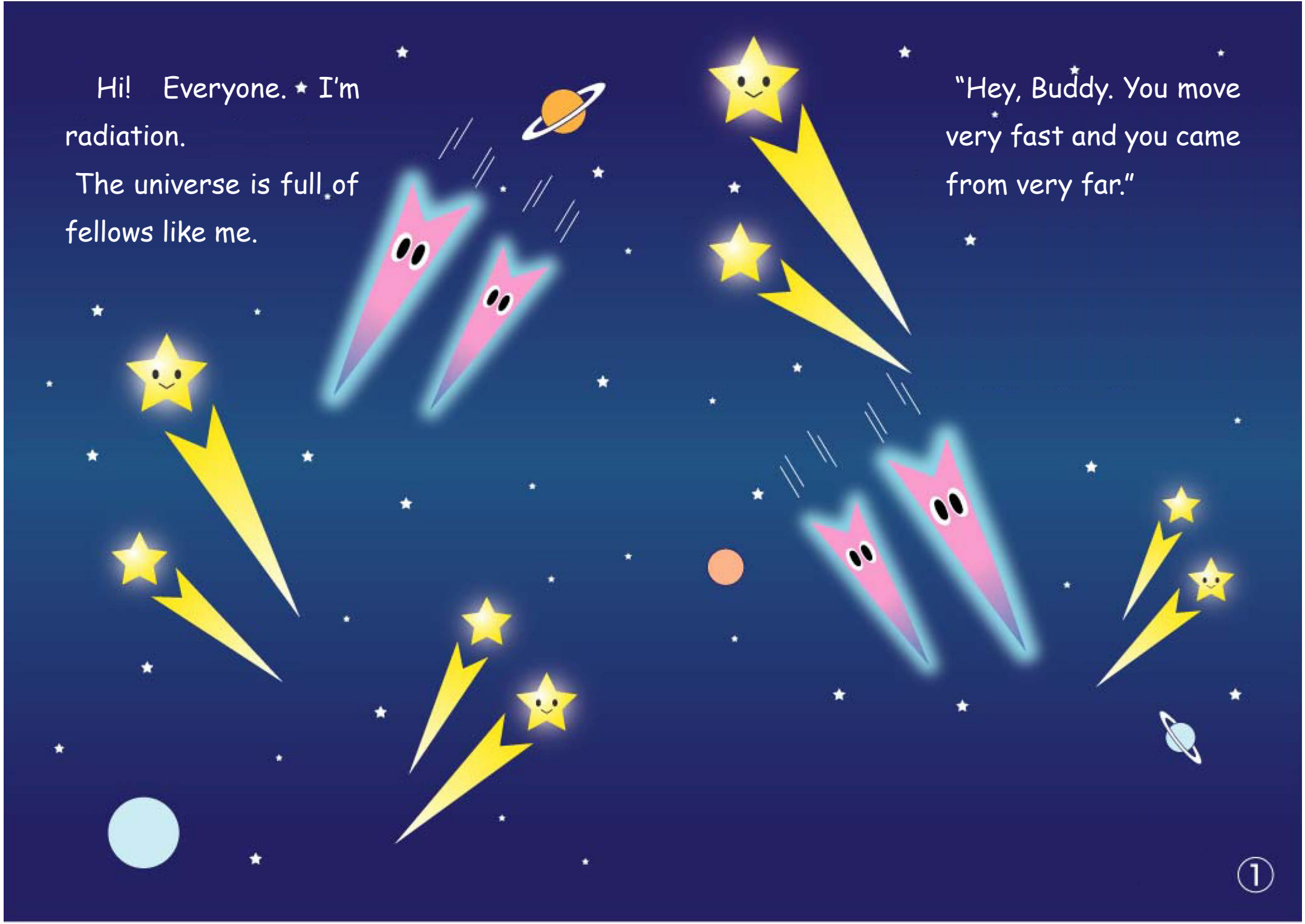
I hope this book will help you understand "RADIATION."



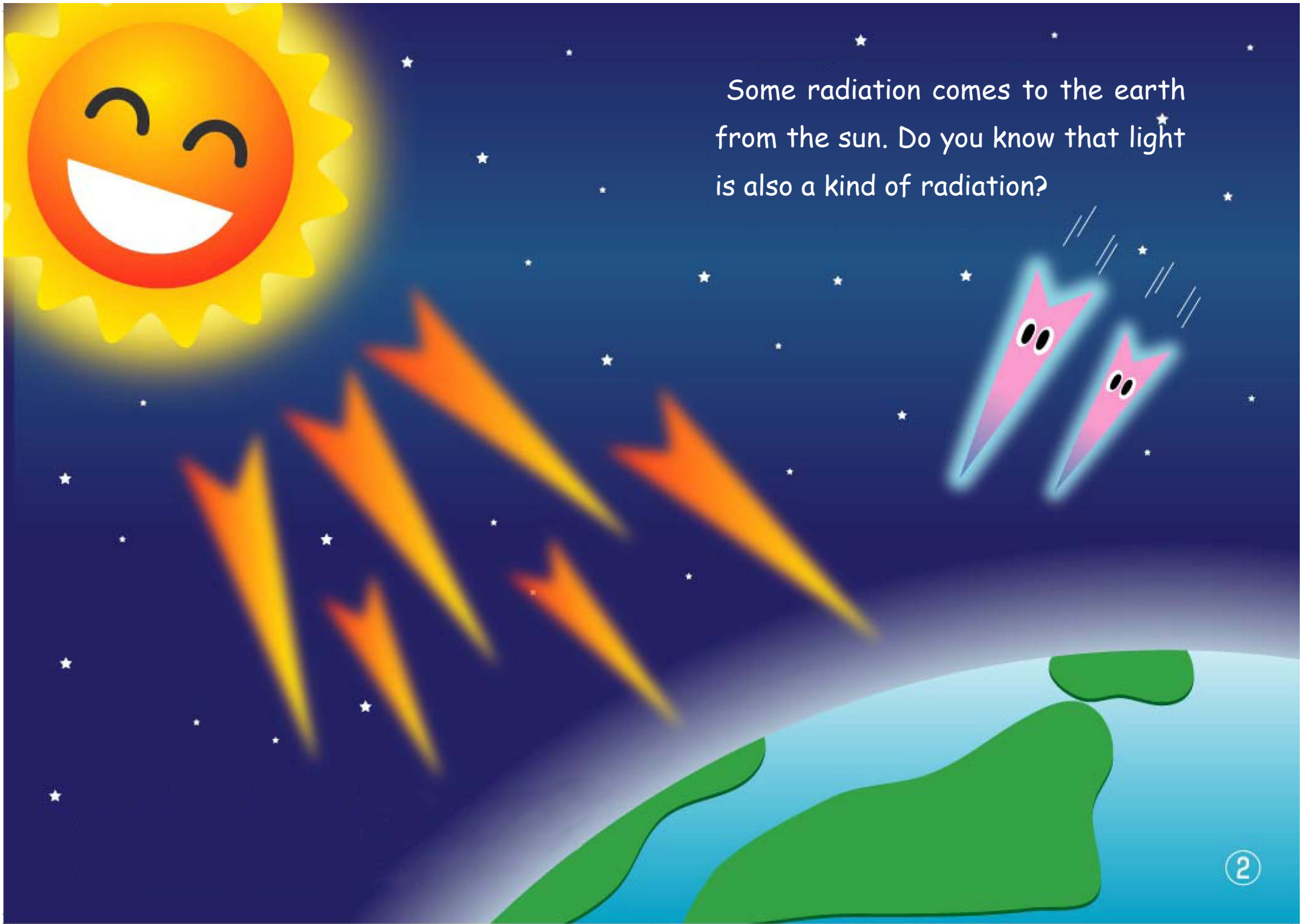
Hi! Everyone. ★ I'm radiation.

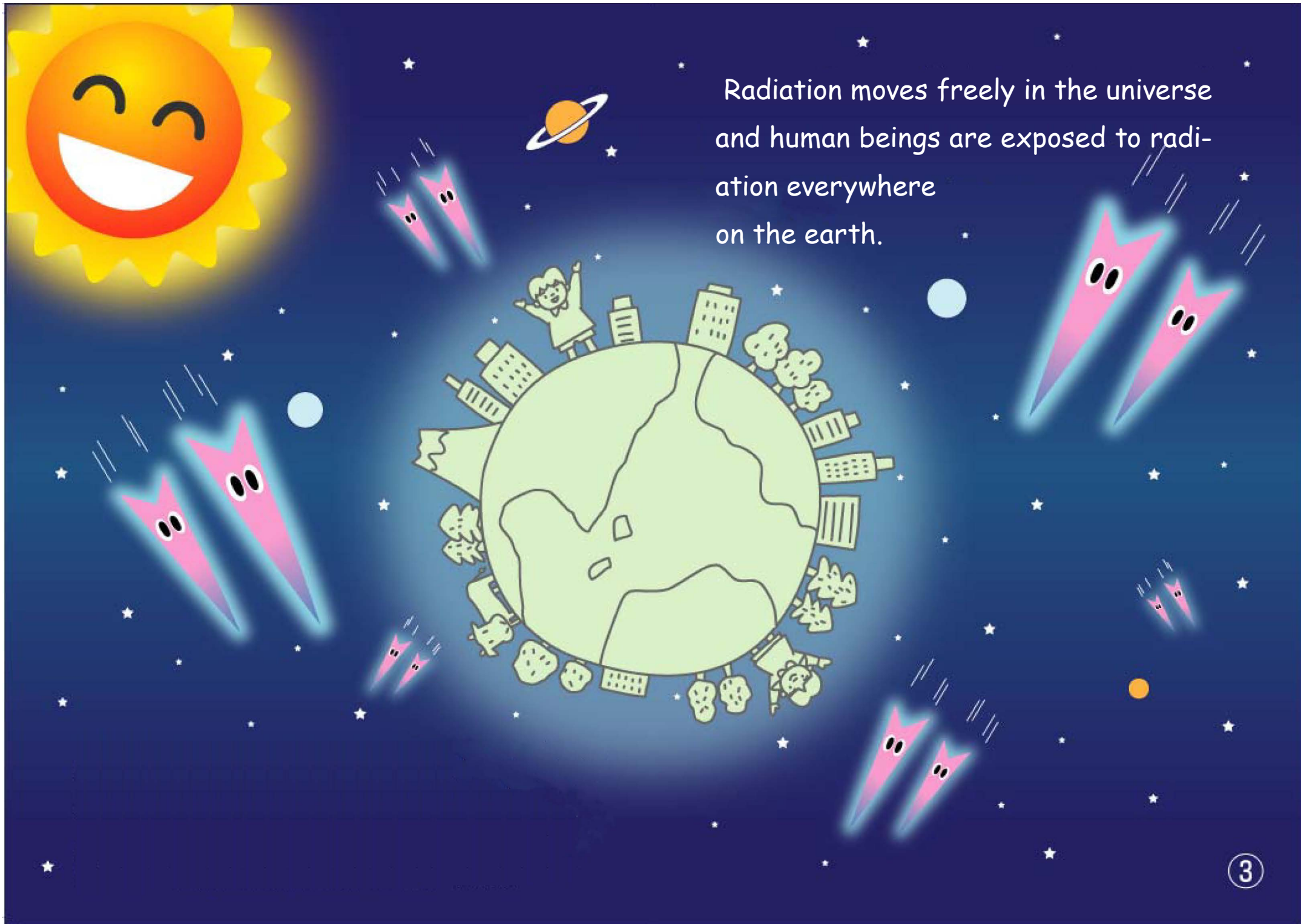
The universe is full of fellows like me.

"Hey, Buddy. You move very fast and you came from very far."

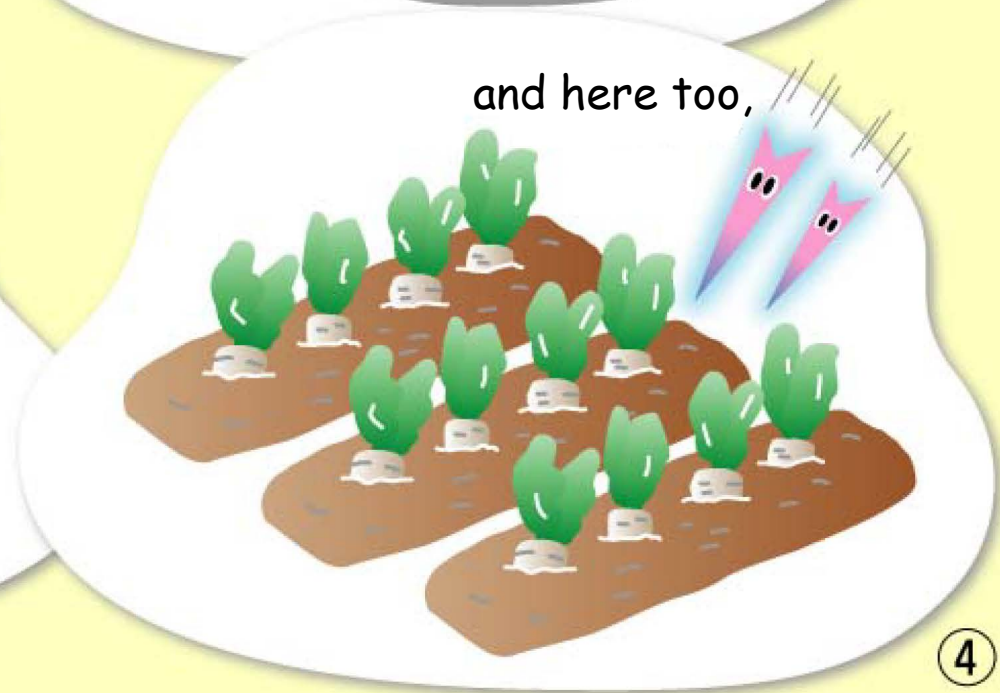


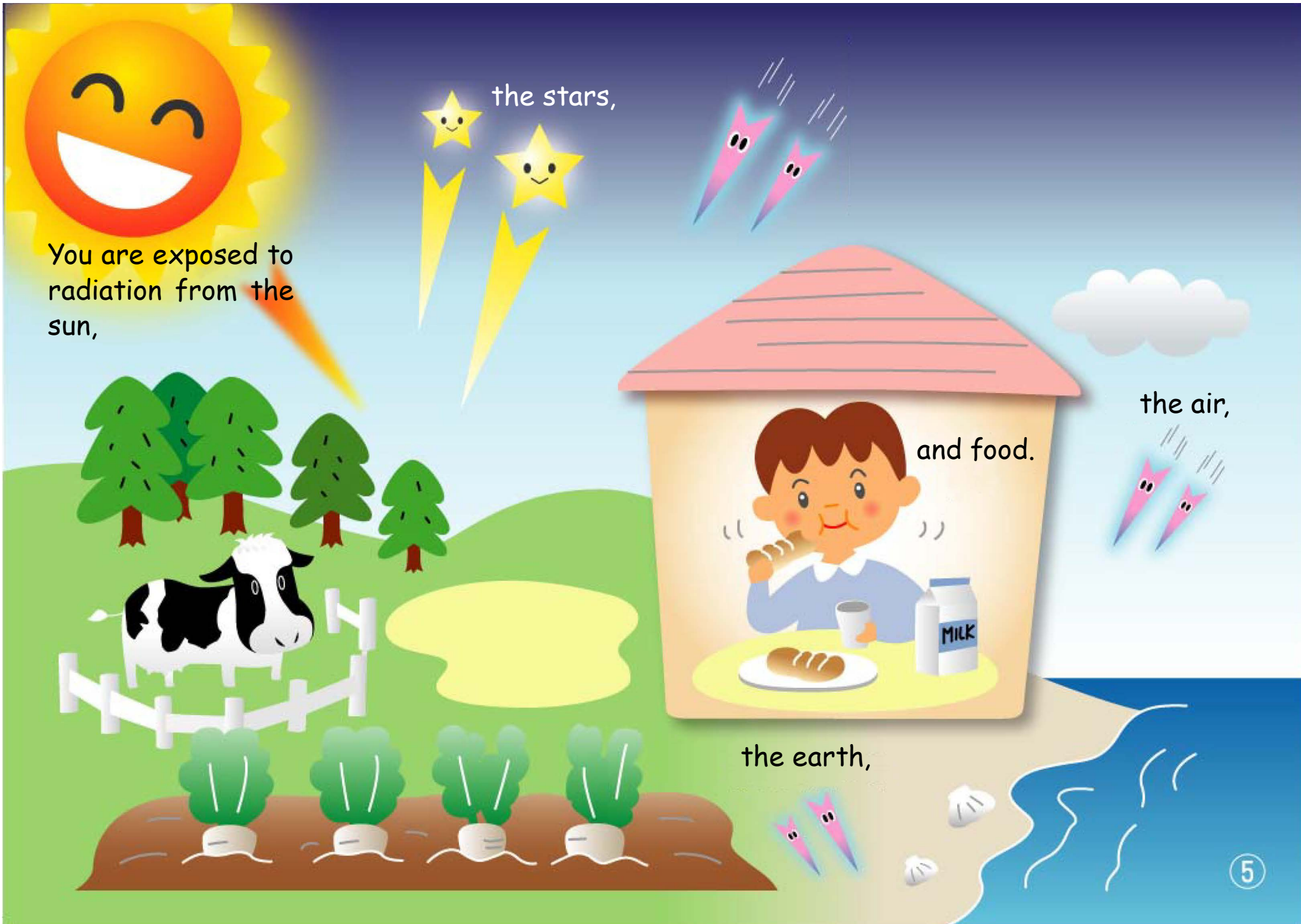
Some radiation comes to the earth from the sun. Do you know that light is also a kind of radiation?





Radiation moves freely in the universe and human beings are exposed to radiation everywhere on the earth.





You are exposed to radiation from the sun,

the stars,

and food.

the air,

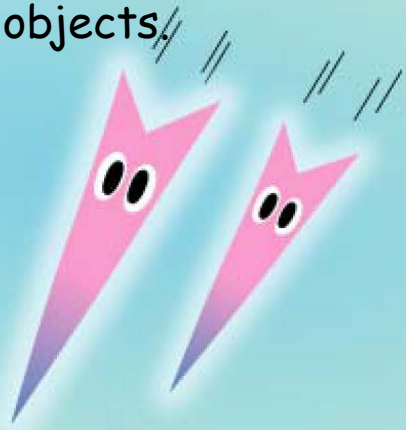
the earth,

Everyone is exposed to radiation.
The global average is 2.4 mSv
(milliSieverts) a year.



2.4mSv

But you cannot feel radiation with your five senses. Moreover, radiation can pass through objects.



Are we like a ghost, aren't we?

You cannot see.



You cannot hear.



You cannot smell.



You cannot touch.

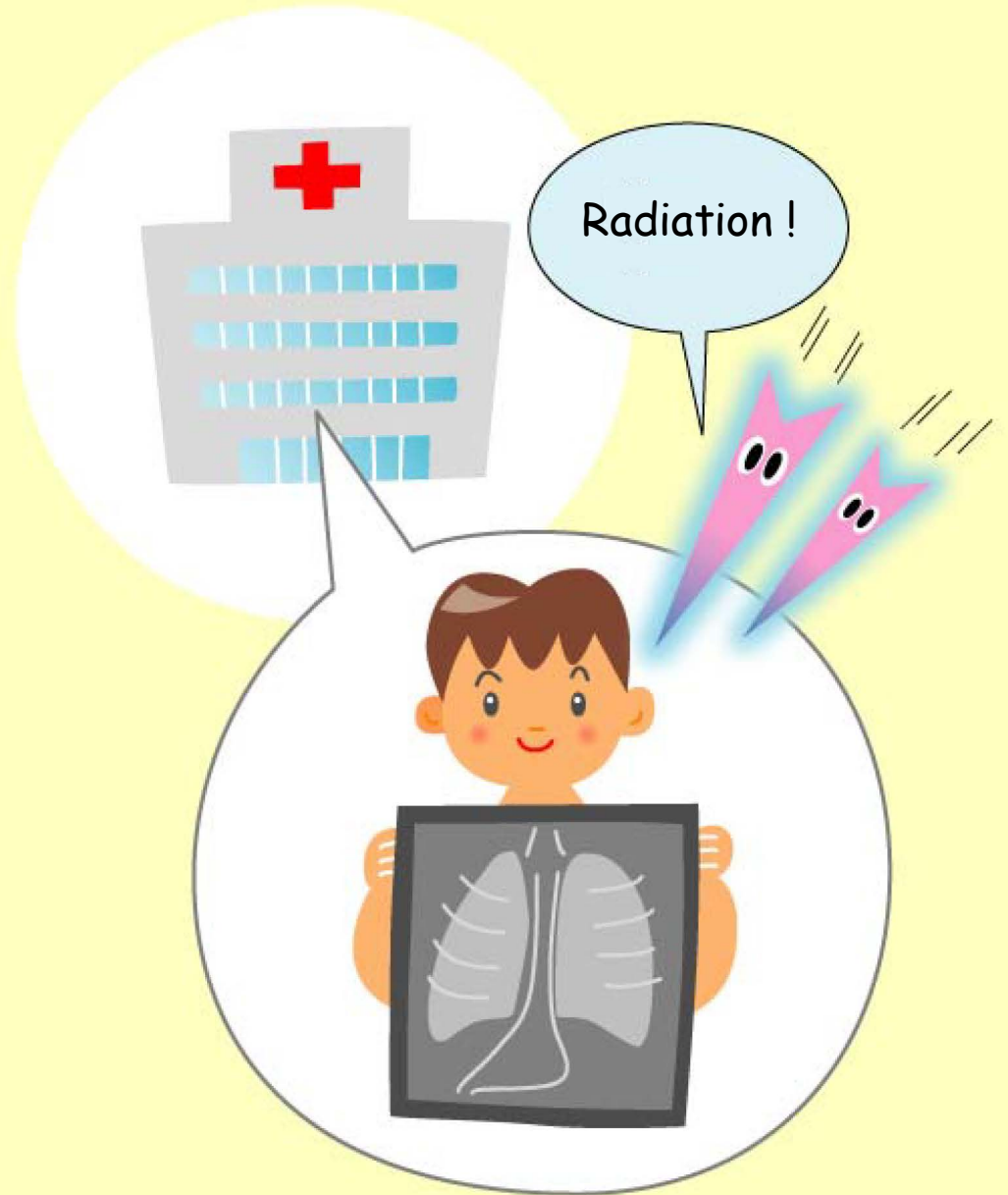
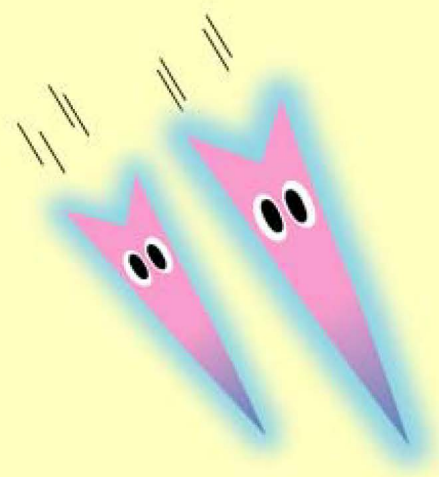


You cannot taste.



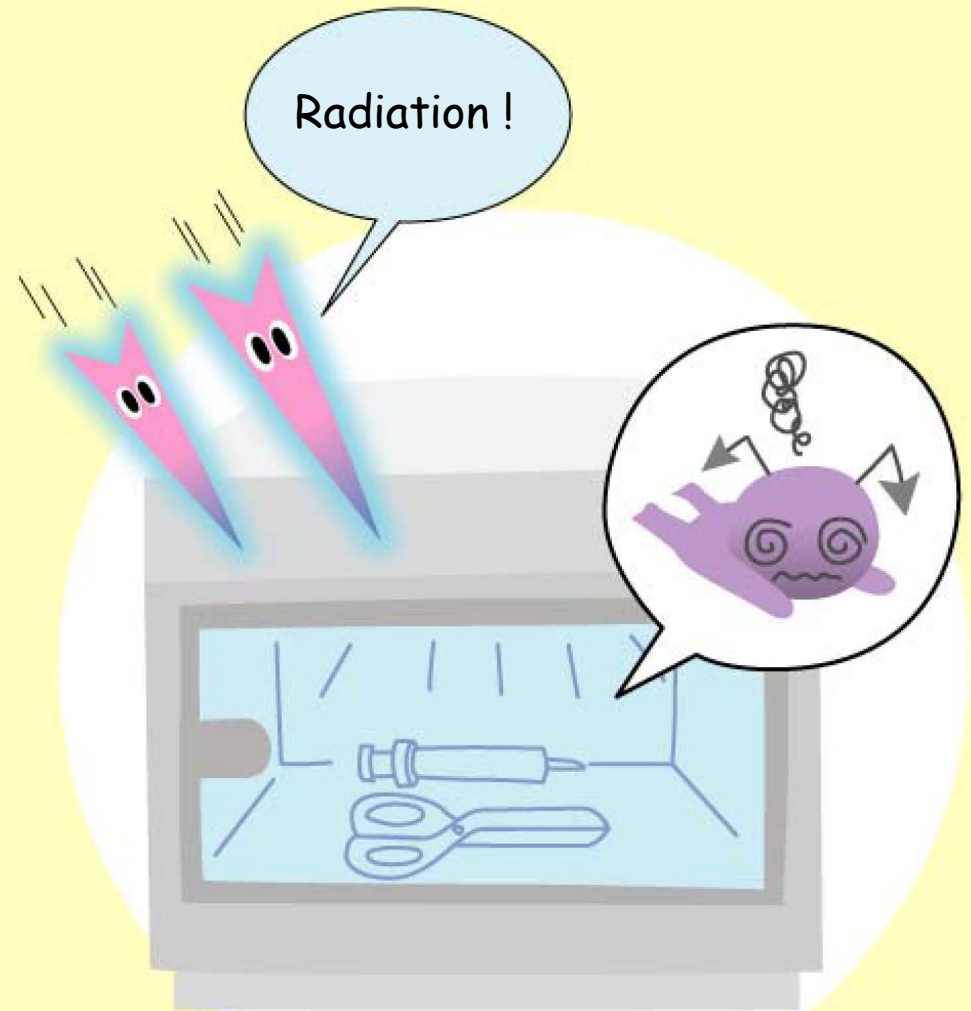
You can measure radiation, and you use it to create medicines and to help in factories and farms.

When you are injured or get sick,
radiation explores what is going on
inside your body.



You can see inside your body.

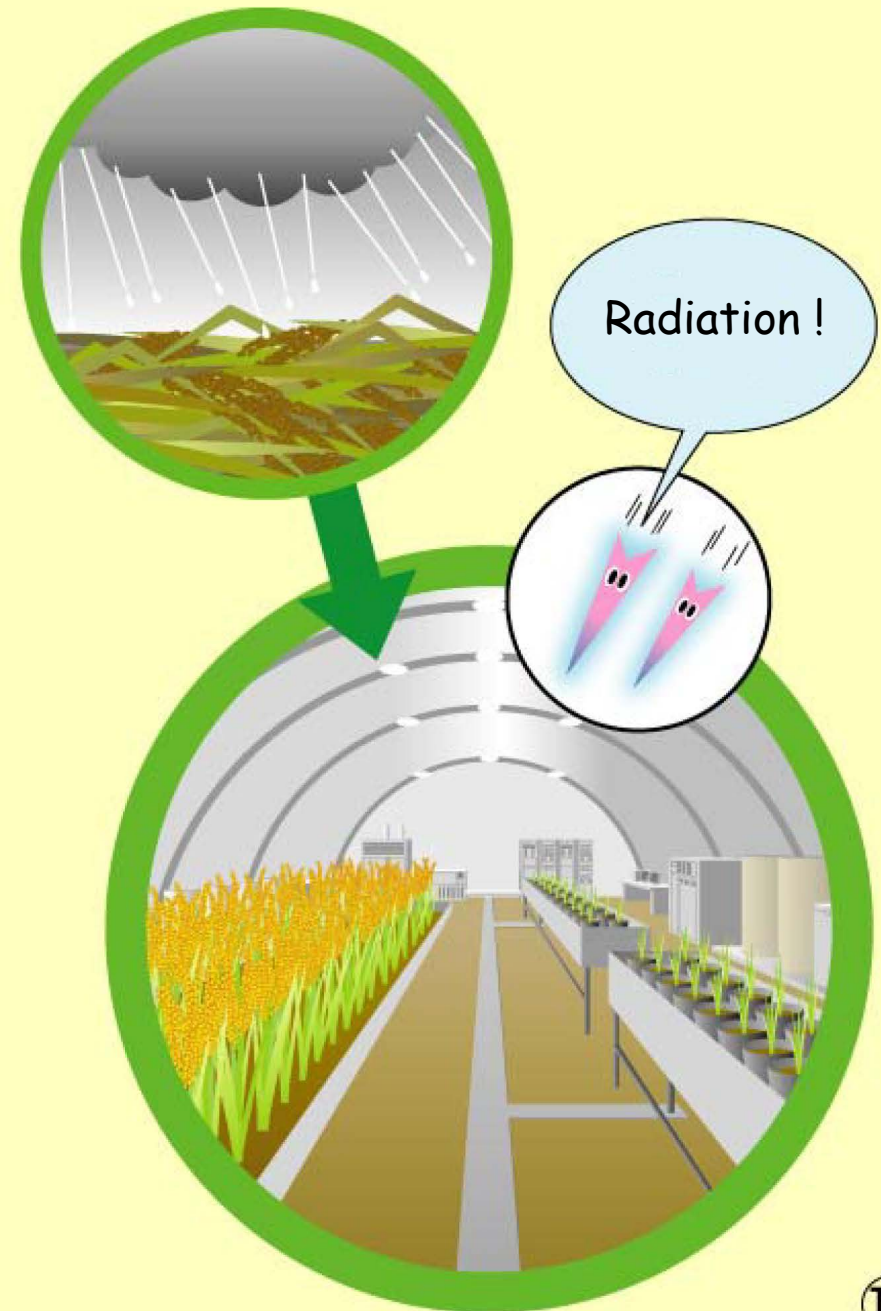
Medical instruments, and also first-aid instruments are sterilized by radiation.



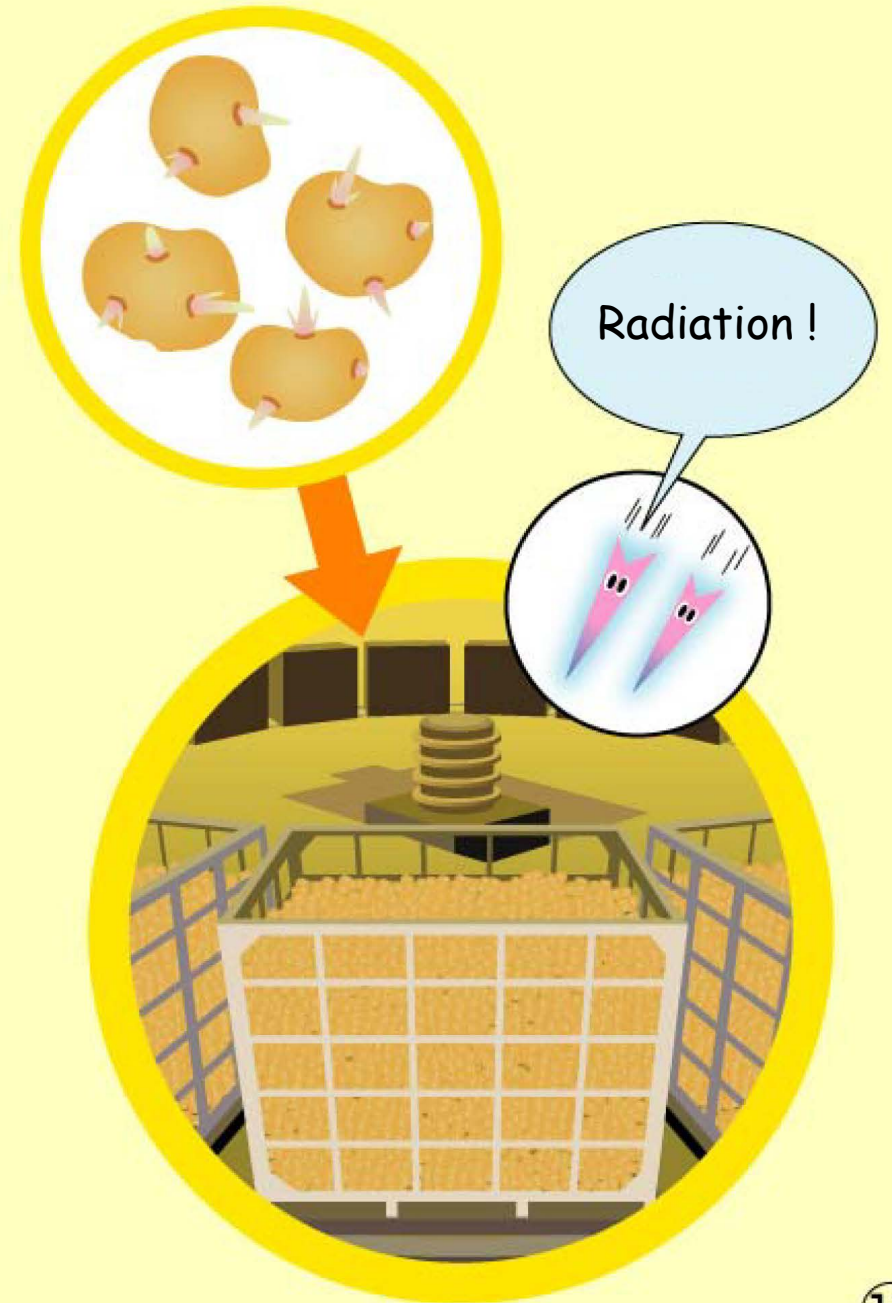
bye-bye bacteria !

Once upon a time, there was a poor rice harvest.

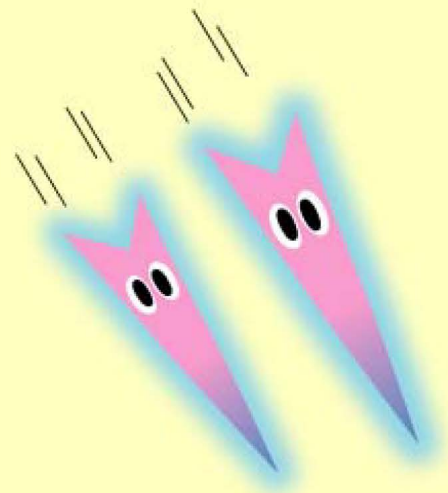
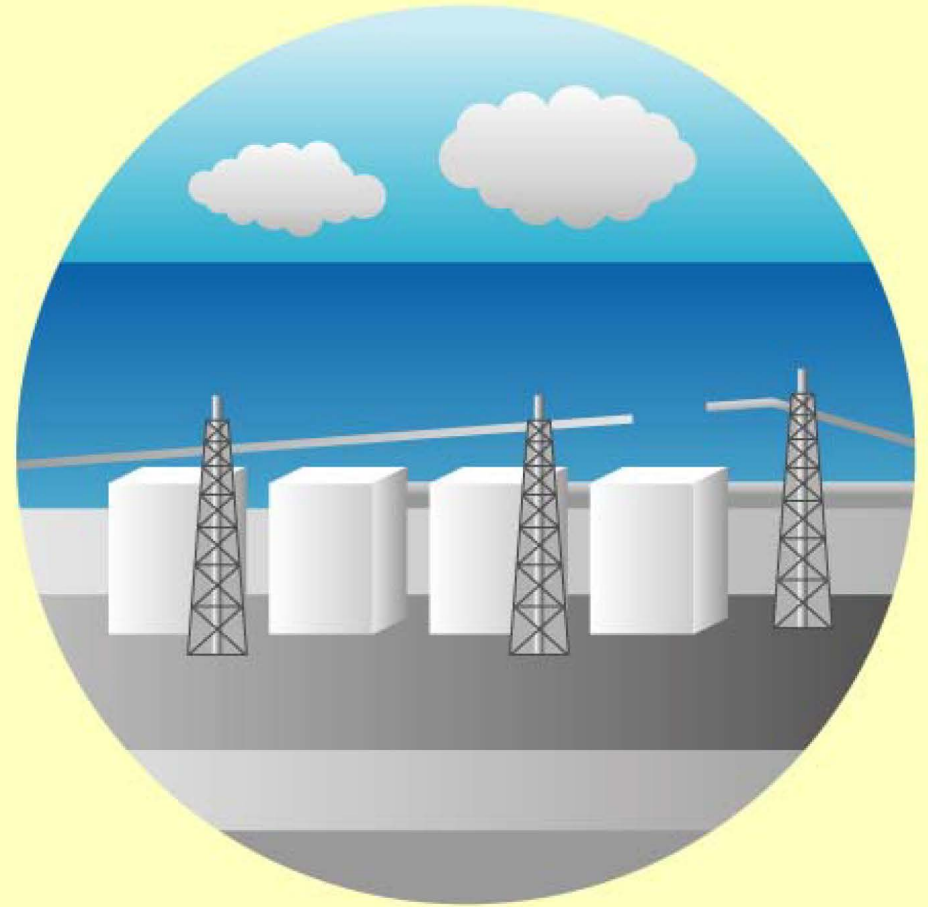
To make the harvest better, the rice seeds were treated with radiation to improve the rice's strength against wind and rain.



In Hokkaido (northern Japan), the famous potatoes are lightly radiated to stop the sprouts from growing before they are sold.



Radiation is used to generate power
in nuclear power plants.

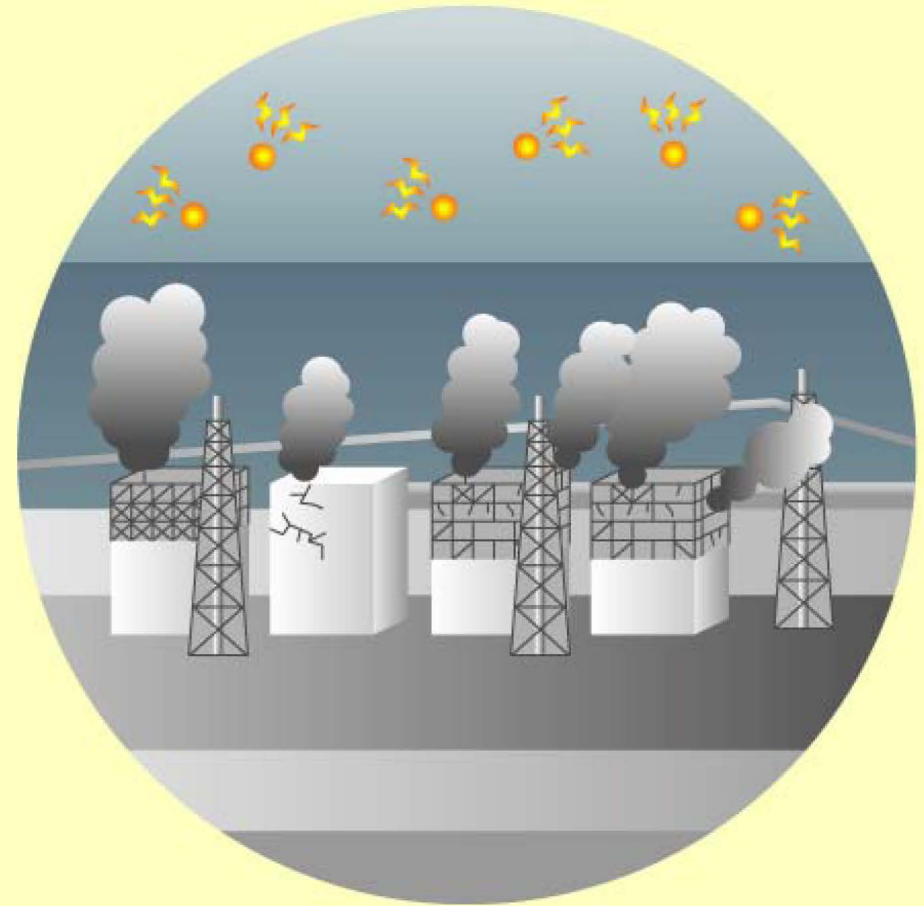
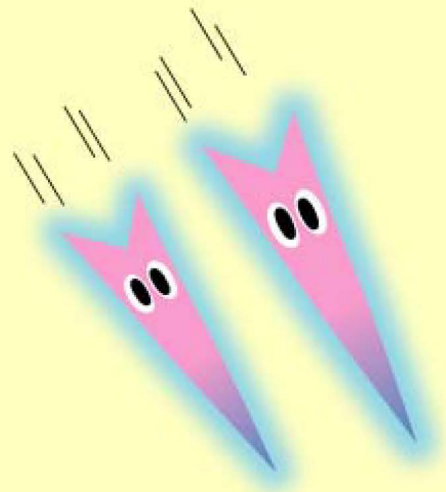


On the 11th of March, 2011, the East Japan Great Earthquake occurred.

The Fukushima Daiichi Nuclear Power Plant was critically damaged by a tsunami.

A large amount of radioactive substance was released.

It went into the mountains, the sea, the rivers, the fields, the streets, the ground, and the schoolyards in Fukushima.

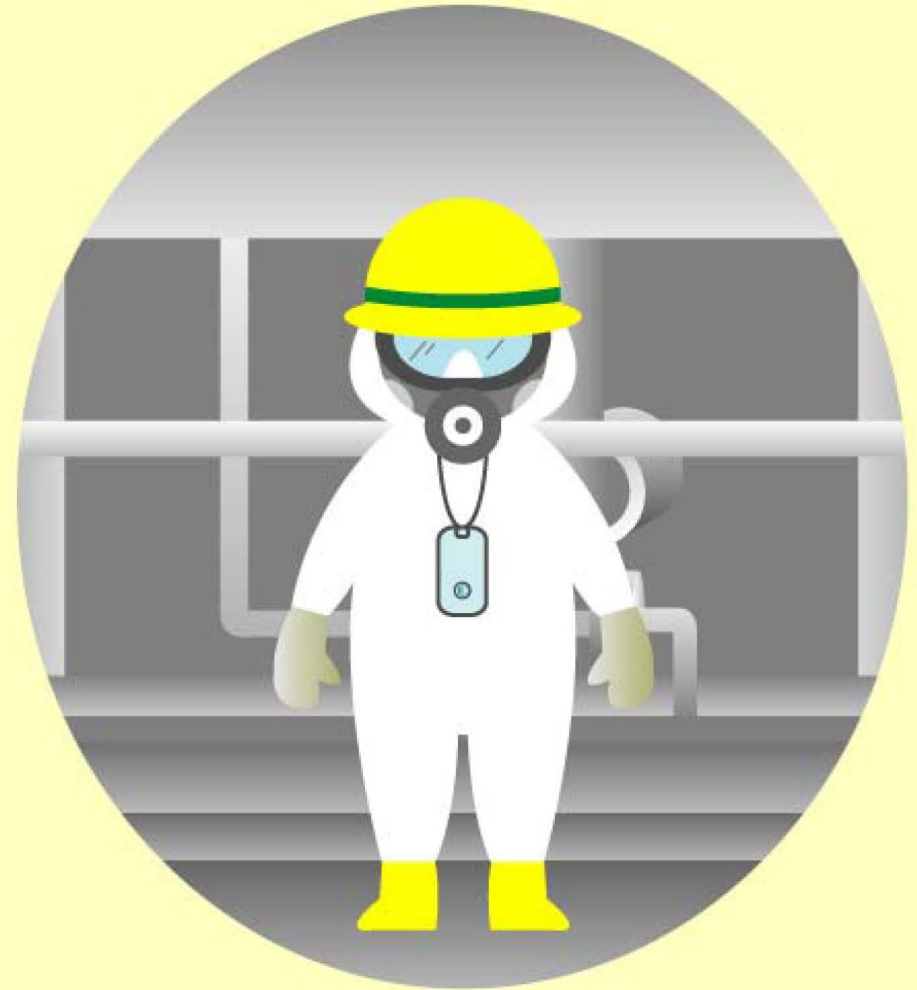


A large number of people in Fukushima had to move from their homes to avoid a larger than normal dose of radiation exposure.



Sometimes families moved away separately from their hometowns so they would not get too much radioactive substances.

There is no difference between the natural radiation around you and the radiation released from the nuclear power plant in the accident.

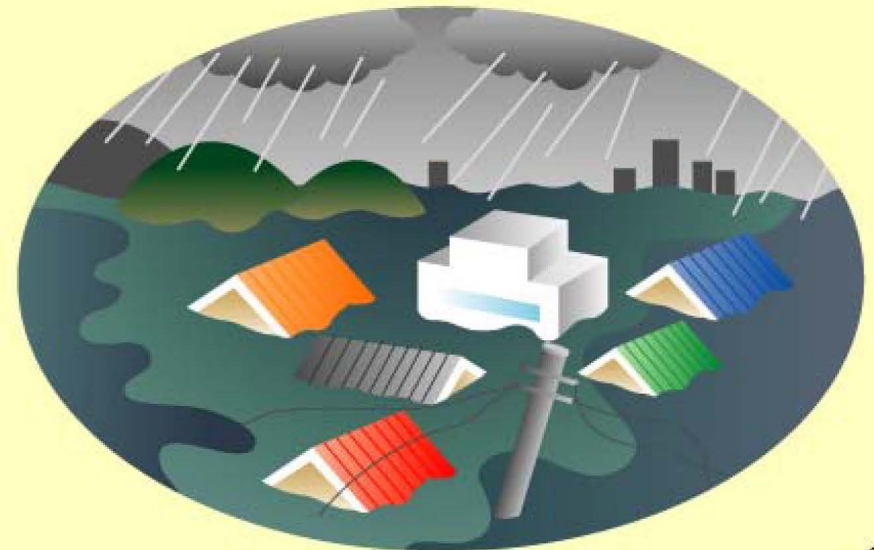
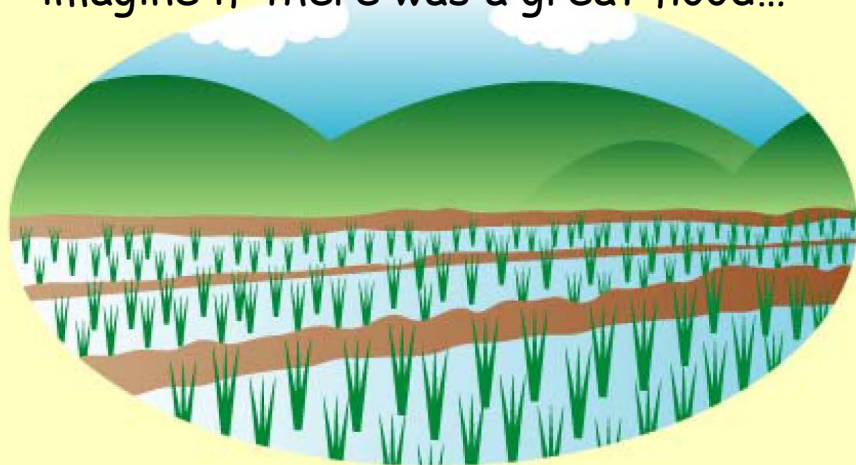


Radiation is radiation, so what makes it different?

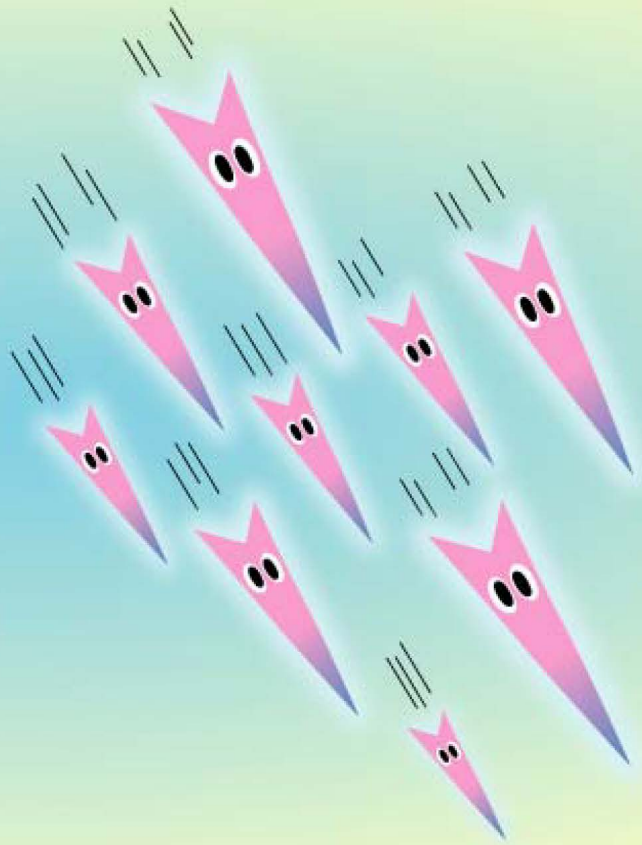
Fire is one of the most useful things for your lives, but imagine if there was a huge fire...



Water is very important to live, but imagine if there was a great flood...



Too much radiation exposure is dangerous and is very bad for your body. Humans have already learned how to avoid it.



Please remember these words "time," "shield," and "distance."

You can avoid radiation:

- by staying a short time in the contaminated area;
- by using a shield which protects you from too much radiation exposure;
- by keeping a long distance away from radioactivity.



Then the radiation will slowly go away naturally.

Radiation has existed since the universe began. It was discovered by chance while researchers were looking for something else.

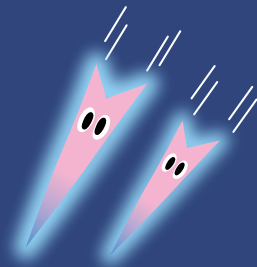
Since then radiation has been studied for approximately 120 years.

Radiation has contributed to society as a treatment for cancer, as a way to strengthen materials, in the production of semiconductors, and as a way to generate electricity.

However, the nuclear power plant disaster in Fukushima was awful.

Therefore, radiation was hated at that time.

Will it be possible for you to understand radiation scientifically, and to accept nuclear technology's contribution again?





Epilogue

Invisible but very real, that is me, radiation.

You humans have evolved in an environment of radiation exposure.

There are different kinds of radiation and each has its own characteristics.

You have utilized these characteristics to develop and improve science, engineering, agriculture, and medical fields and so on.

You might learn about radiation again as you grow up.

It is my pleasure that this book might help you in your first encounter with "RADIATION."



Reference note:

Hajimemashite Hoshasen (Original in Japanese)

Hello! Radiation

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* An American and author of *TRAVEL INSTINCTS*, the earnings from which he has donated to a charity that supports kids who lost their families in the Tohoku tsunami. His donation is through Living Dreams (<http://www.livingdreams.jp/main>).