Unit

6

We're all in this together

You will learn about ...

- animal and plant adaptations
- ecosystems
- food chains, webs and pyramids

You will learn words like these ...

interact temperature carnivore consumer creature chain ecosystem species vein adapted pyramid climate diet web transfer herbivore multi-celled habitat artery

A place for everything

cacti

co_____

a chame_____

E._____

a mo_____

a sha_____

an ow_____

a mo_____

mangro_____

A Study the photographs.

1. g 084 Listen and complete the names.
2. What do all the things have in common?
3. How many of each living thing in the box can you see in the photos.

creatures: ___ insects: ___ birds: ___
aliens: ___ fish: ___ plants: ___

B How much do you know about the living things?

1. Which living things have each feature?
   - fur the mouse
   - feathers _____
   - skin _____
   - scales _____
   - leaves _____
   - spines _____
   - wings _____
   - legs _____
   - a tail _____
   - roots _____
2. Which living thing ...
   - lives in the desert?
   - lives in the ocean?
   - lives in rivers?
   - lives in a tree?
   - can change colour?
   - lives underground?
   - hunts at night?
   - eats grass?
   - comes from another planet?
   - does not eat?

C g 085 Listen to a Science teacher.

1. Which living thing is she describing each time?

It has feathers. It has a tail. It has wings and it can fly. It hunts at night with its very good eyes. It lives in a tree.

An owl.

2. Check your answers to Exercise B.

D Complete these sentences about the living things in this lesson.

1. Owls have wings and they can fly.
2. Mangroves live in _____.
3. Mice have _____ – white, grey, black or brown.
4. Chameleons _____ camouflage to help them to hunt.
5. Sharks are fish, but they don't have _____. They have very thick skin.
6. Cows produce the _____ called beef.
7. Cacti don't have leaves. They have _____.

E Work it out!

What is the connection between each pair or group?

- the cacti and the mangroves
- the owl and the moth
- the owl and the mouse
- the moth and the chameleon
- the owl, the shark and the chameleon (and perhaps the mouse)
- the moth, the mangroves and the cacti

Study skill: Using a dictionary (1)

fly \flaI\
1. (v) to move in the air: *A moth can fly.*
2. (n) a small insect: *There was a fly on the food.*

A dictionary is very useful for definitions of words and for spelling. But it can also help with grammar!

Look for the parts of speech:

(n) = noun (adv) = adverb
(v) = verb (prep) = preposition
(adj) = adjective

Look at the extract. What parts of speech can *fly* be?

What are the possible meanings and parts of speech of these words from this lesson?

spine root fish leaves scales

Check your ideas in a dictionary.

A world of their own

Do you listen to podcasts? They are a good way of doing research.

A **What is your favourite type of film – adventure, comedy, etc.? Why do you like that type?**

B **Read the description of this week's podcast below.**

1. Match the highlighted words with the meanings (a–f).
   a. changed to fit their environments — adapted
   b. creatures from other worlds — _____
   c. environment of plants or animals
   d. stories about creatures from other worlds
   e. abbreviation of science fiction — _____
   f. with many cells, like an animal — _____
2. g 086 Listen to Part 1 of the podcast and check your ideas.

Source: boxofficemojo.com

Listening skill: Listening for definitions

Study these sentences from the podcast.

1. *Every year, film studios make hundreds of science fiction films. Science fiction means stories about the future or about other worlds.*
   - *mean(s)* + definition
2. *So, this week, we're going to look at the aliens in science fiction. An alien is a creature from another planet, for example, Mars or Venus …*
   - the word(s) repeated + *is/are* + definition
3. *Aliens must be multi-celled … and they must be adapted or changed to fit their habitat.*
   - a word + *or* + definition
4. *They must fit with their habitat – you know, the environment around them.*
   - *you know* + definition

Speakers often use new words. Don't panic! The speaker often gives a definition of the new words.

g 086 Listen to the introduction (Part 1) of the podcast again. Does Oliver use sentence type 1, 2, 3 or 4 for each definition?

C g 087 **Listen to Part 2 of the podcast. Oliver is interviewing Isabel. What does she think about aliens in films?**

D g 088 **Listen to Part 3. Complete the notes. Write definitions of new words on the notes.**

Designing an alien

Habitat

1. temperature – ave. + diurnal range
2. g _____
3. a _____
4. e _____

Grammar for listening: Predicting content after a linking word – *and*/*but*

Subject	Verb	Extra information	Linking	Subject	Verb	Extra information
Aliens	must be	multi-celled …	and	they	must be	adapted to their habitat.
Animals	can live	in hot climates	but	the climate	affects	the shape of the creature.

You must recognize linking words in sentences. They help you predict the next information.

and = more information about the subject

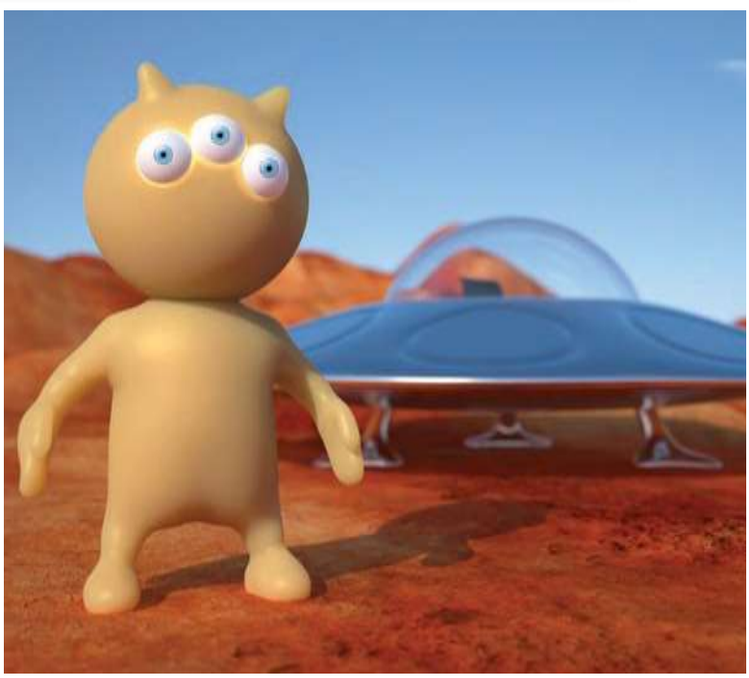
but = contrasting information about the subject

g 089 Listen. What is the sound of *and*? What about *but*?

E g 090 **Listen to a summary of the podcast. Number the next statement in each case.**

Science fiction films are just stories, but …

- [ ] aliens must follow the laws of science.
- [ ] diurnal range is more important.
- [ ] how do they interact?
- [1] people want to believe in the alien world.
- [ ] she points out mistakes.
- [ ] the atmosphere affects the respiration method.
- [ ] they are adapted to their environment.



F **Work it out!**

An alien in a film:

- is very big
- has very big arteries and veins
- has big teeth
- can change colour

What does this tell you about the alien's habitat?

Grammar reference page 189

Mercurians, Venusians or Martians?

All life is based on scientific principles.




	Mercury	Venus	Earth	Mars
Gravity (in m/s²)	3.7		9.8	
Temperature (diurnal range in °C)			+36 to +31 (equator, summer)	
Atmosphere (% of main gases)			N: 79 O: 21	

A Do the inner planets quiz!

1. Study the information about Earth in the table above. Then write the information in the box below in the correct places in the table.

+427 to -173 +20 to -100 +465 to +460
3.7 3.7 8.9
Ar: 2 N: 3 N: 3 CO_2: 95
CO_2: 96 CO_2: 96

2. g 091 Listen to Isabel, the astrobiologist, and check.

B Three Science students, Anita, Bella and Carlos, are working on the project below.

Science 101: Project

Design an alien for one of the planets in the solar system. The alien must be adapted to its environment. Think about:

- body covering – skin, fur, etc.
- size
- respiration

1. g 092 Listen to the conversation (cover the transcript). What are they going to research?
2. Uncover the conversation. Write the missing phrases in the gaps. g 092 Listen again and check.
3. Work in groups of three. Practise the conversation.

A: OK. First of all, we need to choose a planet.
B: _____ one of the inner planets.
C: _____. There's more information on the web.
A: But the outer planets are more interesting.
C: So, _____ a decision? One of the inner planets?
B: Yes.
A: OK. How _____ choose the planet?
B: _____ picking one and then finding out about it?
C: _____. I _____ we should find out about the planets first.
B: OK. So _____ the key points for each one? You know, temperature, gravity and atmosphere?
A: _____. Then we choose the best one.
C: OK. _____ with Mercury. What's the average temperature?
B: I don't know. _____ on the internet?
A: Yes, please.
B: OK. _____ a good website and print off all the information.
C: And I'll do the other two …

Grammar reference page 189

Speaking skill: Taking part in a meeting

		Replies
Introducing the topic	First of all, … Let's discuss/talk about …	Good idea! OK!
Asking for suggestions	How can/should we (do) …? What shall I/we (do) …?	How about …? I'm not sure.
Making suggestions	Why don't we (do) …? How about (do)ing …? Shall I/we (do) …?	Yes, definitely I (don't) agree. I think …
Making a decision	OK, I'll (do) …	Great./Cool.

C Make suggestions and decisions.

1. Write the words in the correct order.
   a. website / a / find / . / good / I'll
      I'll find a good website.
   b. a / we / ? / decision / shall / make
      _____
   c. planet / choose / how / can / the / ? / we
      _____
   d. of / . / inner / let's / the / planets / one / choose
      _____
   e. the / ? / shall / on / I / internet / check
      _____
   f. ? / each / why / don't / find / the / key / out / for / one / points / we
      _____
   g. planets / about / we / . / find / should / the / out / first
      _____
2. 093 Listen and check.
3. 093 Listen again. What were the replies?

D Work in groups.

You are doing the Science project on the opposite page. Look at the notes below.
Decide on the planet. Then decide on the alien's:

- body covering (skin/fur/scales)
- size
- respiration

Body covering
skin/scales = hot climates
fur = cold climates
feathers = flight
what about diurnal range?
camouflage?

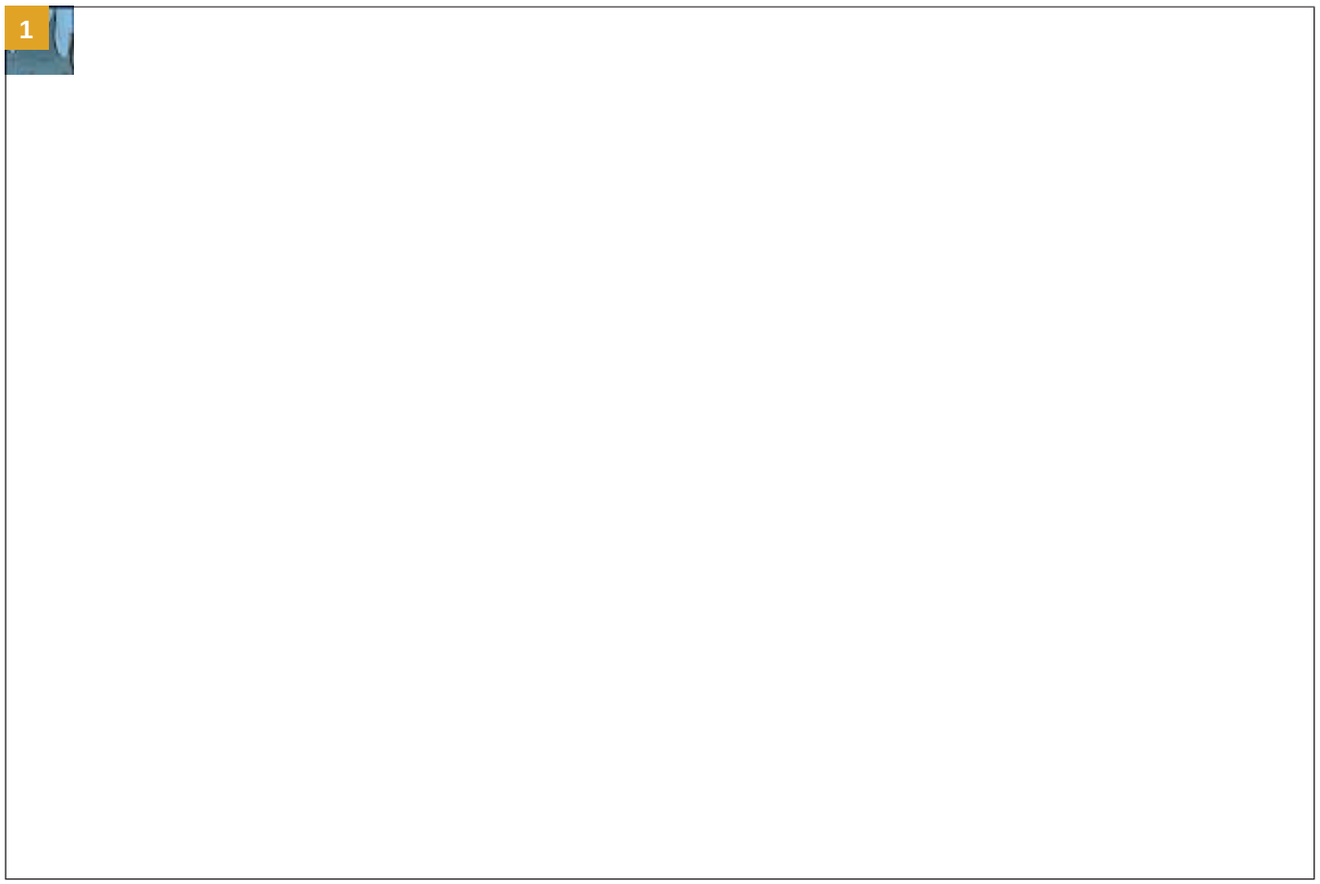
Size
low gravity:
- large creat. = can move
- small creat. = can move fast

high gravity:
- maximum size of creat.?

Respiration
gas in?
gas out?

English in action: Meeting new people

1



M: Can I sit here?
A: _____yourself.
M: I'm Martine.
A: _____name's Anita.
M: I'll just _____a coffee. _____you look after my bag?
A: Sure.

A **How many items in each picture can you name?**

B **Study the conversations below each picture.**

1. Write the missing words in each conversation.
2. g 094 Listen and check.

C **Practise the conversations in pairs. Look at the transcript for track 094. Use your own names.**

D **Work it out! What can you say in these situations?**

Conversation 1

- Another student is already sitting in the seat. He is getting a coffee.
- The coffee is terrible in this coffee shop. The tea is better.

Conversation 2

- The weather is very good, and it was very good yesterday, too.
- You like rain!

2

M: The weather's _____today, isn't it?
A: Awful. _____than yesterday.
M: I hope it's _____at the weekend.
A: Yes, _____too.

3

M: Do you live _____from here?
A: Not far. About ten minutes by _____.
What about you?
M: Well, I _____. It takes about half an hour.

E **Practise Conversation 3 again in pairs, but, this time, give true information.**

F **Think of some other reason for going. Practise Conversation 4 again.**

My bus goes in five minutes.

4

M: Oh, look at the _____! I must go.
A: Really?
M: Yes, I've got a _____with my tutor.
A: OK. See you _____.
M: Yes, sure. Bye.

A perfect fit

Animals are perfectly adapted to their habitat … or they become extinct.

A **How do the animals in the photographs adapt to their habitat?**

B **Read part of a biology text.**

1. Complete the text with the extra information in the box.

at this time of year	during the winter
from the Sun	in animals
in hot areas	in its habitat
in very cold areas	~~to their environment~~

2. What kind of adaptation is each of these? Why does the animal adapt in this way?
   - Bats only hunt at night.
   - Lizards can change colour.
   - Polar bears have large paws.

ADAPTATION

Animals adapt to their environment. They can adapt in three ways:

Structure

Animals have special body parts. These structural adaptations help the animal to survive _____. For example, polar bears have thick white fur. They live _____ and the fur keeps them warm. It is also camouflage against the white snow and ice.

Physiology

The organ systems _____ function or work in a particular way. These physiological adaptations fit with their habitat. For example, lizards are cold-blooded. They usually live _____ and they use heat _____ to warm their bodies.

Behaviour

Animals must deal with their physical environment. Behavioural adaptation helps. For example, bats sleep for about 65 days _____. It is cold _____ and there are very few insects to eat.

Writing skill: Writing a paragraph

Many paragraphs have this structure:

Topic sentence: *This paragraph is about X.*
Explanation: *This is an explanation of X.*
Example: *This is an example of X.*

Plan a paragraph before you write it.

Read the biology text again. Find the three sections in each paragraph.

C **Design a poster about animal adaptations.**

1. Work in three groups. Research some animals.

   Group A: Read about leopards on page 157.
   Group B: Read about camels on page 167.
   Group C: Read about penguins on page 171.
   Work out the sentences and write a draft paragraph from the notes.

2. Work in groups of three. Each group should include a student from Groups A, B and C.
   a. Read the paragraphs of the other students in your group. Can you understand them?
   b. Write a final version of your paragraph.
   c. Give the poster a title.

3. Display your posters in the classroom. Which is the best one?

D **Work it out!**

1. What adaptations do humans have?
2. Think about the three types of adaptation.

What's eating you?

All living things are involved in complex relationships in their ecosystem.

A **Do you eat meat or fish? Or are you a vegetarian? Why/Why not?**

B **Read the title and the introduction of the online article opposite. Look at the figures. What is the text probably about? Tick one item.**

- ☐ green plants
- ☐ ecosystems
- ☐ living things
- ☐ chemical energy

C **Read the topic sentences only. Which paragraph (2–7) is about …**

- ☐ energy transfer?
- ☐ food webs?
- ☐ 2 eating?
- ☐ humans?
- ☐ predators and prey?
- ☐ relationships in an ecosystem?

Grammar for reading: Predicting content after a linking word – *and/but*

Linking words help you in reading, too!
See *Grammar for listening* on page 83.

Read the article and look at the three figures. Choose a sentence ending to go after each linking word (1–8) in the article.

- ☐ a big change in an ecosystem can threaten humans living in the area.
- ☐ 1 foxes eat rabbits.
- ☐ foxes need to eat a lot of rabbits.
- ☐ frogs eat grasshoppers.
- ☐ rabbits are their prey.
- ☐ snakes eat frogs.
- ☐ the rabbits and foxes are consumers in this chain.
- ☐ there are changes in other parts.

D **Discuss the question at the end of paragraph 6 about the food chain in Figure 1.**

Reading skill: Dealing with new words

The green plants are called producers. = noun (object)
Most plants and animals are part of a complicated food web. = adjective
A food web combines many food chains. = verb

Study the highlighted words in the article. What part of speech is each word?
Is each of the nouns a subject, or object or extra information? What does each word probably mean?

ecofriends

Top 10 questions | Juliette's blog | Case studies | Publications | Key facts

Chains, webs and pyramids

Figure 1: A food chain

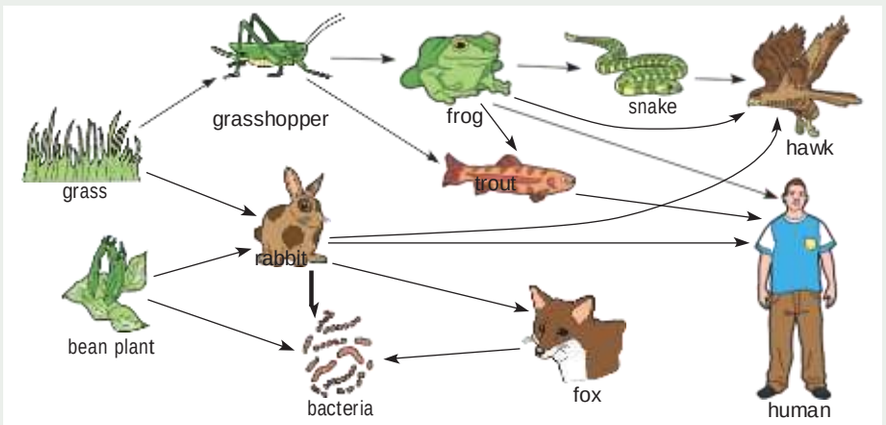


Figure 2: A food web

Green plants convert solar energy into chemical energy. They are the start of every ecosystem, but they are only the start. All living things depend on each other. In this article, we look at the relationships in an ecosystem.

Animals need energy and they get it by eating. For example, rabbits eat grass and **(1)**. This is a food chain (Figure 1). The green plants are called producers, because they produce energy and **(2)**. The rabbits are herbivores because they only eat plants, but the foxes are carnivores. They eat rabbits and other animals.

A food chain is simple, but most plants and animals are part of a complicated food web (Figure 2). For example, insects like grasshoppers also eat grass, and **(3)**. Birds like hawks eat rabbits and frogs. A food web combines many food chains.

Most animals in an ecosystem are either predators or prey. Predators eat prey. So, foxes are predators and **(4)**. Of course, some animals are predators and prey. For example, frogs eat grasshoppers, but **(5)**.

Only a small percentage of energy passes up a food chain. The energy transfer is a pyramid (Figure 3). In most cases, the consumer only gets about 10% of the food energy. So rabbits need to eat a lot of grass, and **(6)**. For example, a human needs 300 trout to live for one year. The 300 trout must consume 90,000 frogs and the frogs must eat 27 million grasshoppers. The grasshoppers must consume 1,000,000 kilos of grass.

Every species in an ecosystem is in a relationship with other species. Change one part of the system and **(7)**. Imagine all the rabbits die in the food chain in Figure 1. What happens to the other living things?

Humans are at the top of many food chains. The decline of one species, like the rabbits, is not normally a problem. Humans can usually change their diet, from rabbits to trout, for example, but **(8)**.

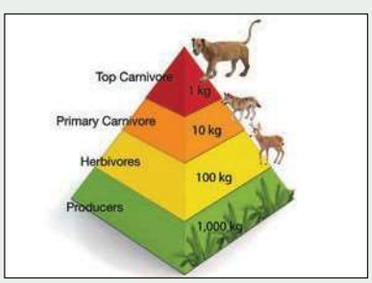


Figure 3: A food pyramid

Over to you!

Think about the ecosystem in an extreme area of your country or your region, e.g., mountains, desert, marshland, rainforest.

Draw a food web with the main living things in the ecosystem. Draw arrows from prey to predator(s).

Project

Choose one of the animals in the food web you've drawn. Research the animal and complete the notes.

Name	
Habitat	
Adaptations to habitat:	
• Structural	
• Physiological	
• Behavioural	

Be prepared to talk about the animal to the class.

Can you use words from the unit?

Look at the Word list for Unit 6 on page 224 and do the tasks.

- Find all the **verbs**.
- Find words with **three syllables**. Underline the stressed syllable in each word.
  temperature
- Choose ten words and write a sentence with each word.

Can you now ...

	✓ Yes	? I need more practice
... listen for definitions of new words in a talk?	☐	☐
... use the language of suggestions and decisions in a meeting?	☐	☐
... write a paragraph with a simple structure?	☐	☐
... guess the meaning of new words by working out the part of speech?	☐	☐