

1 Dimensions



Start here 1 What do you know about this bridge?

- 1 What's it called?
- 2 Where is it?
- 3 How high is it?

Listening 2 39 Listen to part of a TV programme about the bridge. Check your answers to 1.

3 Work in pairs. Which of the following can you see in the photo?

cable deck pier pylon span

4 40 Listen to the next part of the TV programme and complete the specifications of the bridge.

Millau Bridge: specifications			
Structure	(1) <i>cable-stayed</i>	Length of outer spans	(7) m
Completion date	(2) <i>December 2004</i>	Number of piers	(8)
Material: cables and deck	(3)	Height of pylons above deck	(9) m
Material: piers	(4)	Height of deck above water	(10) m
Total number of spans	(5)	Length of deck	(11) km
Length of inner spans	(6) m	Width of deck	(12) m

BrE: metre, millimetre, centimetre.
AmE: meter, millimeter, centimeter.

Don't add -s to abbreviations of units.
say: one hundred metres / kilometres; write: 100 m / 100 km

Vocabulary 5 Complete the table.

Adjective	high	long	_____	wide
Noun	_____	_____	depth	_____

6 Complete the sentences with the correct word in brackets.

- 1 The _____ of the road is 6 m. (wide/width)
- 2 The river is 230 km _____. (long/length)
- 3 The sea has a _____ of 330 m. (deep/depth)
- 4 These pylons are over 80 m _____. (high/height)
- 5 These oil wells are more than 700 m _____. (deep/depth)
- 6 The total _____ of the road is about 120 km. (long/length)
- 7 The tunnel is 15 m _____. (wide/width)
- 8 The _____ of the bridge is 130 m. (high/height)

Language

How	high	is it? are they?	It's They're	2	millimetres	high.
	wide			10	centimetres	wide.
	long			100	metres	long.
	deep			1000	kilometres	deep.

Speaking 7 Make questions about the Millau Bridge. Use the specification chart in 4.

8 Work in pairs. Ask and answer your questions in 7.

Example:

TV presenter: How long are the inner spans?

Engineer: They're 342 metres long.

Task 9 Work in pairs. Find out the specifications of your partner's bridge.

Student B. Turn to page 118.

Student A:

- 1 Ask Student B questions about the Akashi-Kaikyo Bridge. Complete your specifications chart.
- 2 Then change roles. Turn to page 114 and answer Student B's questions about the Rion-Antirion Bridge.

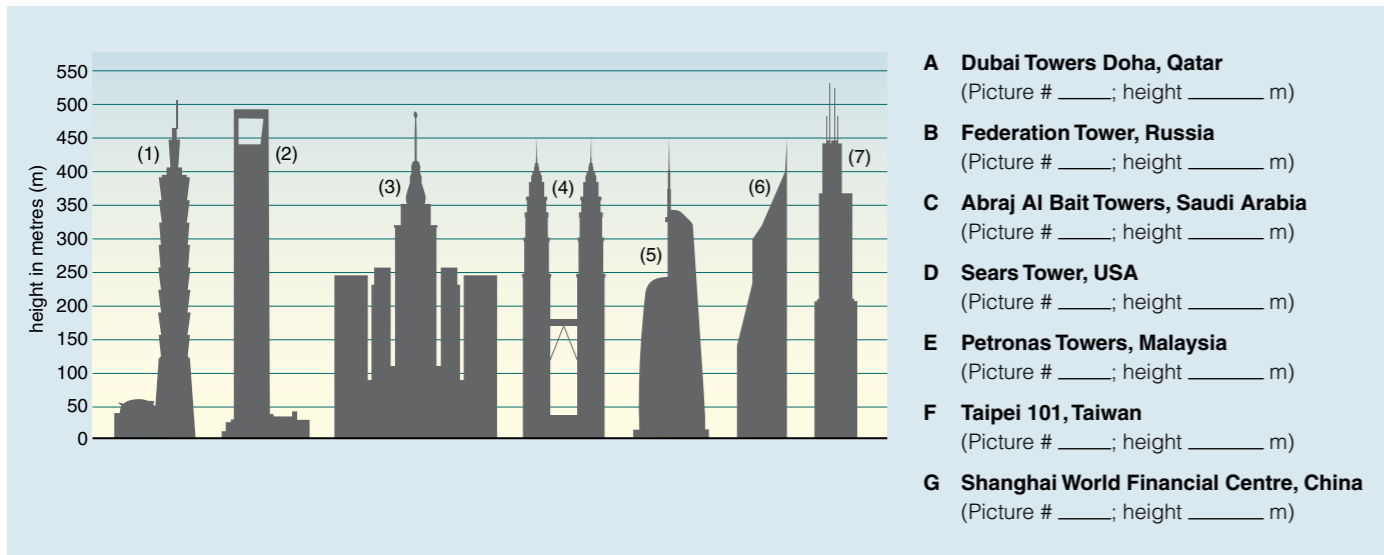
Akashi-Kaikyo Bridge: specifications	
Type of structure	<i>Suspension</i>
Country	
Piers (number)	
Span (length)	
Deck (above water)	
Deck (length)	
Water (max depth)	
Water at main pier (depth)	



The Akashi-Kaikyo Bridge

2 Quantities

Start here 1 Try the quiz. Match the names of the buildings to the pictures. Write the number and the approximate height of each building.



2 41 Listen and check your answers to 1.

Reading 3 Read the FAQs from the website and match them to the answers.

BrE lift = AmE elevator

write: 8000 m²; say: eight thousand square metres.
write: 250,000 m³; say: two hundred and fifty thousand cubic metres.
write: 5 kg; say: five kilograms or five kilos.

This is Taipei 101. It is currently the highest in the world. Here are some frequently asked questions (FAQs) about the building.

- How high is Taipei 101?
- What's the footprint of the building?
- How many storeys does it have?
- How do you get to the top?
- What's the building made of?
- How much steel and concrete is in the building exactly?

- A About 700,000 tonnes.
B By super-fast elevator. The building has two high-speed elevators. Each elevator travels at 17 m/s.
C 101.
D It towers above Taipei at the amazing height of over 508 metres.
E Reinforced concrete, steel, aluminium and glass.
F The base of the building has an area of about 450 m².

Language *Countable nouns* can be both singular and plural. Examples: *screw, nail, bottle*. *Uncountable nouns* are always singular. Examples: *concrete, cement, sand, oil*.

screws are countable		cement is uncountable	
a one	screw	some	cement
some two	screw -s		
a bag of two bags of		a bag of two bags of	

Do you need	some/any	screws? cement?	How	many much	(screws) (cement)	do you need?
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4 Complete the dialogue with the words in the box.

any how many much some What colour What size

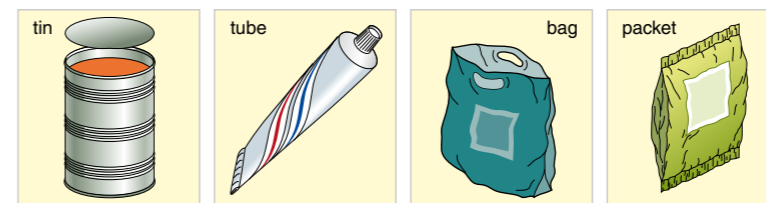
- Good morning. Can I help you?
- Hello. Do you have (1) _____ screws?
- Certainly. (2) _____ do you need?
- Ten mil.
- OK. And (3) _____ do you need?
- Fifty, please.
- Right. So that's fifty 10 mil screws. Anything else?
- Yes. I need to buy (4) _____ paint, please.
- (5) _____?
- Black.
- OK. So (6) _____ black paint do you need?
- Six large tins, please.
- Anything else?
- No, that's all, thanks.

5 Make similar dialogues with your partner. Use the questions in the box and the information from the table.

How many? How much?
What colour? What kind?
What size? What type?

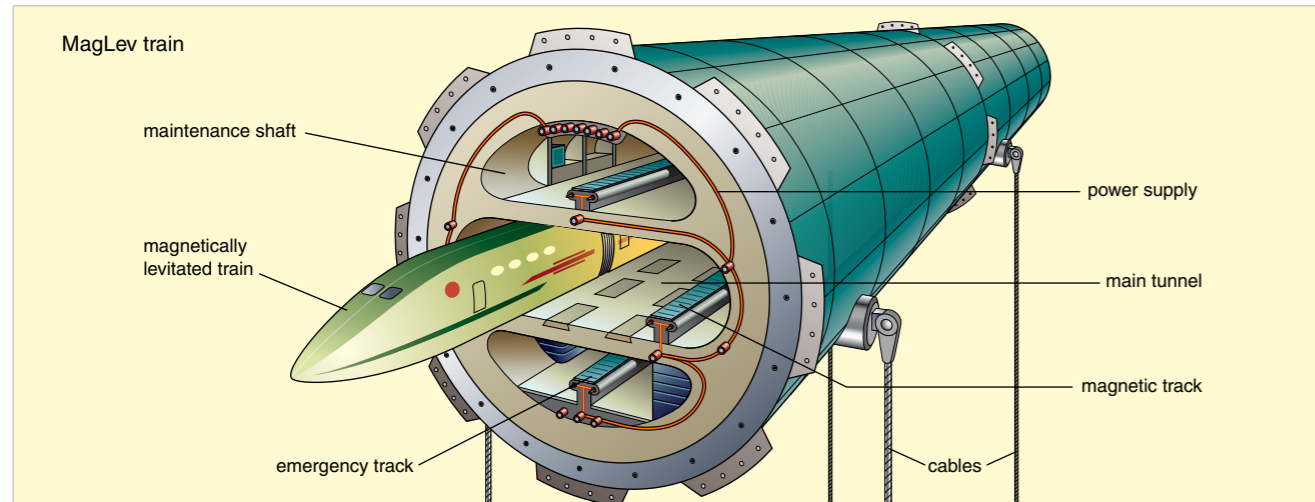


write: 15 L; say: 15 litres



To buy ...		
Item	Quantity	Kind, size or colour
screws	50	10 mm
paint	6 large tins	black
glue	2 tubes	superglue
nuts	30	15 mm
oil	15 L	motor oil
bolts	60	25 mm
cement	20 bags	white
nails	2 packets of 50	20 mm

3 Future projects



- Start here**
- 1 Work in pairs. Look at the picture. What is it? How does the vehicle move?
 - 2 42 Listen to this radio interview and complete the specification chart.

Trans-Atlantic MagLev Tube	
Location of tube	(1) <i>Under the Atlantic Ocean from Britain to the USA</i>
Possible date of completion	(2) <i>2100</i>
Length	(3) km
Depth below sea level	(4) m
Number of cables	(5)
Speed of train	(6) km/h
Source of power for train	(7)

Language Use *will* and *won't* to predict a future fact or event.

They/We	will	build it in 2050.
My company	'll	
The engineers	will not	
	won't	

When	will	they/you	build it?	In 2050.
	Will		build it in 2050?	Yes, they will. / No, they won't.

- 3 Disagree with each statement.
 - 1 The engineers will start the tube in 2020. (2080)
 - 2 The tube will be under the Pacific Ocean. (Atlantic)
 - 3 The tube will connect Britain with Europe. (the USA)
 - 4 The train will use diesel. (magnetism)
 - 5 The tube will contain compressed air. (a vacuum)
 - 6 The trains will travel at 11,000 km/h. (8000 km/h)

Example: 1 They won't start the tube in 2020. They'll start it in 2080.

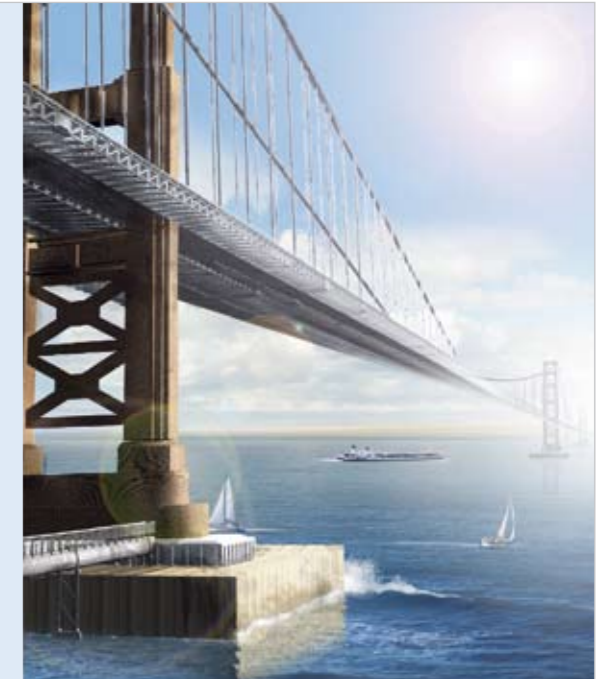
Reading 4 Read this interview and produce a specifications chart for the bridge (see 2 on page 56). Use the words in the box.

completion date deck height length materials pier pylon span

Bridge of the Future: Europe-Africa Bridge

RadioTech presenter Tom Burns interviews engineer Galal Hamdy.

Tom: What project are you working on now?
 Galal: We're designing the world's longest bridge.
 Tom: Where will it be?
 Galal: Between Morocco and Spain. It'll connect Europe with Africa.
 Tom: What are the specifications of the bridge?
 Galal: It will be almost 15 km long. In our design, the bridge will have two spans. Each span will be 4800 m long.
 Tom: That's a very long span. How will that be possible?
 Galal: The bridge will have three steel pylons, on concrete piers. The pylons will be 1000 m high. The deck will be very light and strong. It'll be made of fibreglass.
 Tom: Many engineers think you won't be able to build this bridge.
 Galal: I don't agree. I think we'll complete it around 2030.



Speaking 5 Work in pairs. Ask and answer questions about the specifications of the bridge.

A: How long will the bridge be? B: It will be almost 15 km long.

6 Here is a possible project schedule for the Europe-Africa Bridge. Roleplay an interview between a TV presenter and an engineer.

Task	2024	2025	2026	2027	2028	2029	2030	2031	2032
1 lay foundations	■	■							
2 build piers			■	■	■				
3 put pylons on piers					■	■			
4 attach cables to pylons						■	■		
5 make deck			■	■	■	■	■		
6 fix deck to cables							■	■	■
7 build roads								■	■
8 open bridge									■

*TV Presenter: When will you build the piers?
 Engineer: We'll start in 2026 and finish in 2027.*

Social English 7 How do you think the world will change in the next 20 years. Think about technology, social, political and legal changes.

Example: Computers will control more things in our homes.