Specifications

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 [40] 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 [50] Listen to the next part of the TV programme and complete the specifications of the bridge.

Millau Bridge: specifications
structure [cable-stayed] Length of outer spans [7] m
Completion date [December 2004] Number of piers [8]
Material: cables and deck Height of pylons above deck [9] m
Material: piers Height of deck above water [10] m
Total number of spans Length of deck [11] km
Length of inner spans Width of deck [12] m

Vocabulary
5 Complete the table.

<table>
<thead>
<tr>
<th>Adjective</th>
<th>high</th>
<th>long</th>
<th>wide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noun</td>
<td></td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>How</th>
<th>high</th>
<th>wide</th>
<th>long</th>
<th>deep</th>
</tr>
</thead>
<tbody>
<tr>
<td>is it?</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>It’s</td>
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<tr>
<td>They’re</td>
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<td>2 10 100</td>
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<td>millimetres</td>
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<tr>
<td>metres</td>
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<tr>
<td>kilometres</td>
<td>high,</td>
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<td></td>
</tr>
<tr>
<td>wide.</td>
<td>long.</td>
<td>deep.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.
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.

A Dubai Towers Doha, Qatar
B Federation Tower, Russia
C Abraj Al Bait Towers, Saudi Arabia
D Sears Tower, USA
E Petronas Towers, Malaysia
F Taipei 101, Taiwan
G Shanghai World Financial Centre, China

2 Listen and check your answers to 1.

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

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

1 How high is Taipei 101?
2 What’s the footprint of the building?
3 How many storeys does it have?
4 How do you get to the top?
5 What’s the building made of?
6 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.

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.

To buy …

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Kind, size or colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>screws</td>
<td>50</td>
<td>10 mm</td>
</tr>
<tr>
<td>paint</td>
<td>6 large tins</td>
<td>black</td>
</tr>
<tr>
<td>glue</td>
<td>2 tubes</td>
<td>superglue</td>
</tr>
<tr>
<td>nuts</td>
<td>30</td>
<td>15 mm</td>
</tr>
<tr>
<td>oil</td>
<td>15 L</td>
<td>motor oil</td>
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<tr>
<td>bolts</td>
<td>60</td>
<td>25 mm</td>
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<tr>
<td>cement</td>
<td>20 bags</td>
<td>white</td>
</tr>
<tr>
<td>nails</td>
<td>2 packets of 50</td>
<td>20 mm</td>
</tr>
</tbody>
</table>
3 Future projects

Start here

1 Work in pairs. Look at the picture. What is it? How does the vehicle move?

2 Listen to this radio interview and complete the specification chart.

Trans-Atlantic MagLev Tube

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

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

<table>
<thead>
<tr>
<th>They/We</th>
<th>My company</th>
<th>The engineers</th>
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</thead>
<tbody>
<tr>
<td>will</td>
<td>will</td>
<td>will not</td>
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<tr>
<td>will</td>
<td>will</td>
<td>will</td>
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</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Task</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
<th>2028</th>
<th>2029</th>
<th>2030</th>
<th>2031</th>
<th>2032</th>
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<tbody>
<tr>
<td>1 lay foundations</td>
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<td>2 build piers</td>
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<td>3 put pylons on piers</td>
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<td>4 attach cables to pylons</td>
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<td>5 make deck</td>
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<td>6 fix deck to cables</td>
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<td>7 build roads</td>
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<td>8 open bridge</td>
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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.