

## BUILDING TOWERS WORKSHEET

Stage 2 Year 3 & 4

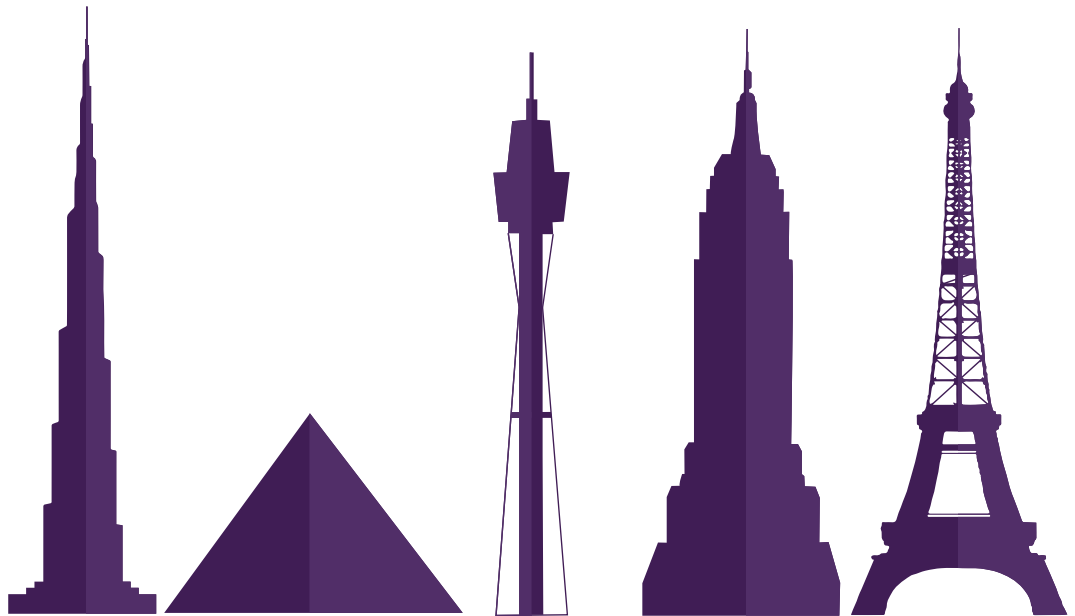
Outcomes: ST2-14BE and ST2-4WS | Curriculum area: Built Environment

### Section 1

#### Towers of the world

Take a look at the tower models located in the Sydney Tower Eye pre-show area.

These towers are famous structures from all over the world. Write the name of the building and which city we can find these structures located



Name of Tower:

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Location of Tower:

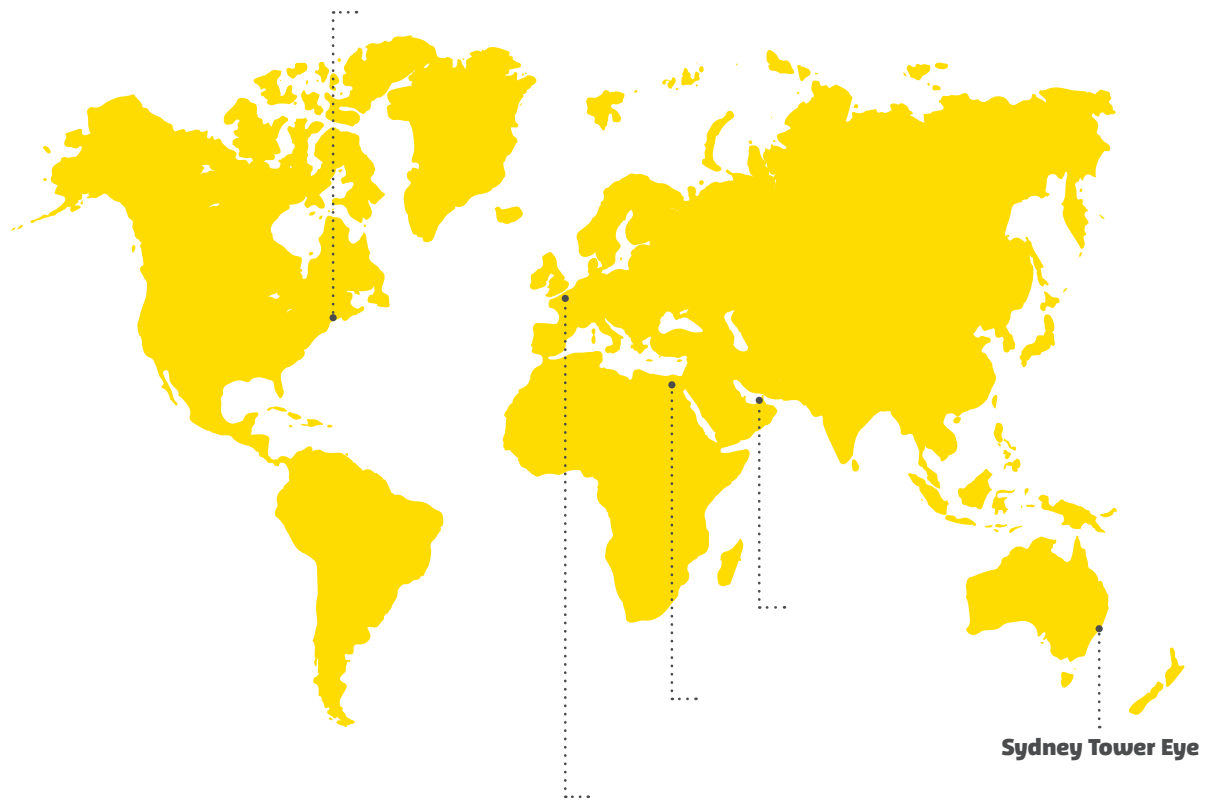
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Place a mark on the world map where these towers are located. Sydney Tower Eye has already been done for you. Have you visited any of these countries before?



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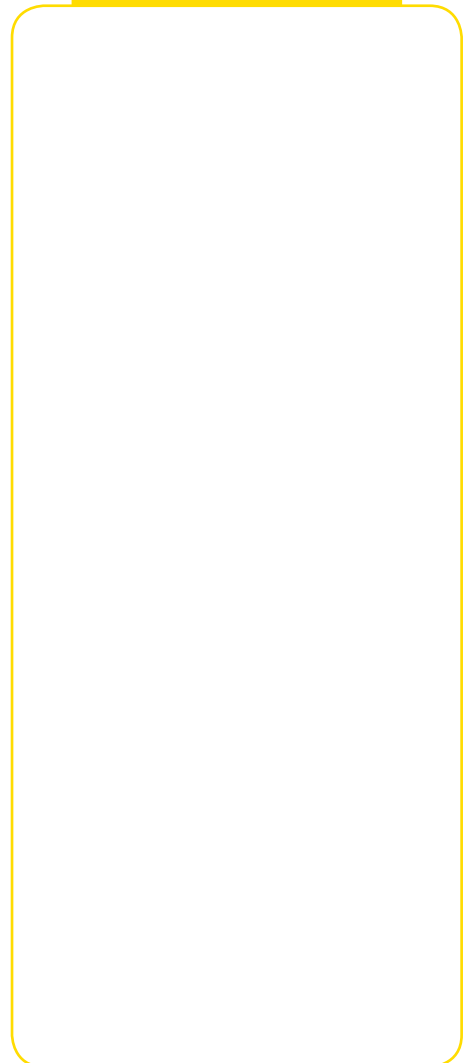
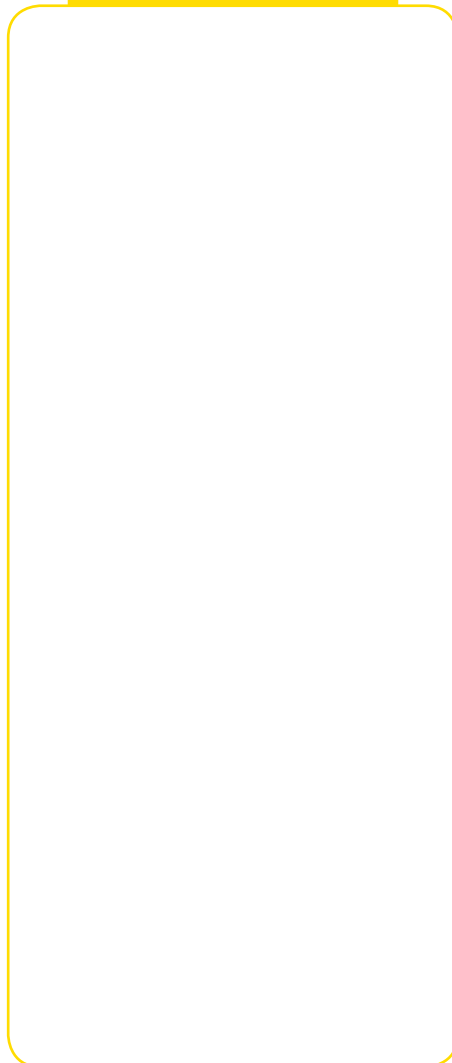
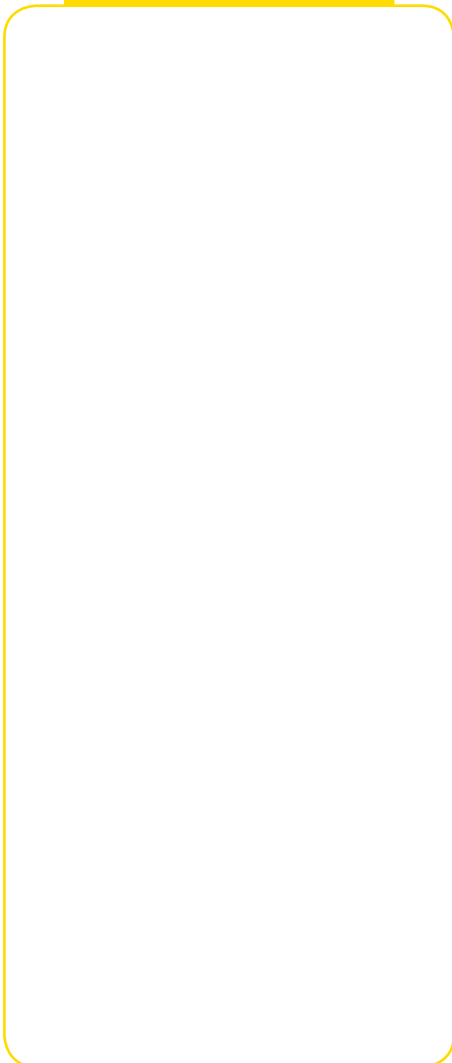
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The city of Sydney is also home to some amazing buildings and man-made structures. Go to the observation deck and have a look outside the windows. Find 3 different towers or buildings and draw a sketch of what they look like in the space below:

Building 1

Building 2

Building 3



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1. What is the main purpose of a buildings or Towers? What do people use them for?

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2. Where do you find buildings or Towers?

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3. What are buildings or Towers made of?

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4. What makes a good building or Tower stand out from the rest?

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5. What is your favourite building or tower you have seen today? What is your reason for this?

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### Section 2

#### Buildings and Shapes

Shapes play an important part and help to make the design of a building or structure. Look out the window and find the following buildings mentioned in the table and look at the shapes used to make the building.

	Building	Shapes used in the design
	Sydney Tower Eye	
	Sydney Opera House	
	Kirabilli House	
	St Mary's Cathedral	
	Sydney Harbour Bridge	
	Chifley Tower	
	Australia Square	
	Meriton World Tower	
	MLC Centre	

What is the most popular shape used in these buildings? Why do you think this shape is used the most?

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## Section 3

### Sydney Tower Eye construction time line

First stage of Sydney Tower Eye shopping centre was constructed.

**1970**

The first 52 shops in the shopping centre opened.

**1972**

The second stage of the build, the office component was completed.

**1974**

**1975**

The construction of Sydney Tower is an interesting tale of engineering and quality construction.



Pre-made individual barrel units formed the shaft of the tower and the four levels of the turret structure were constructed at the base of the shaft and raised to the top as work progressed.

The shaft supporting the turret is made up of 46 barrel units, each weighing 27 tonnes. These were brought on to the site in seven pieces and welded together. Once the first three sections were in place, a gantry crane was erected to hoist the remaining 43 barrel units.



Each barrel unit was completed with lift rails, stairwells and hydraulic risers before hoisting. The shaft contains two sets of fire stairs, fire, electrical and plumbing ducts in one half and the lift shafts in the remainder.

Once the tower structure was complete, the spire was erected. This was done in two parts, by placing one half and then lifting the top section onto the bottom section. The crane did not have the reach to lift the spire from the top, so it was lifted from the side. This was achieved despite the difficulties of maintaining adequate balance.

The final stage Sydney Tower was completed and opened to the public in August 1981.

**1981**

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## Section 4

Is this true or false? Write next to each statement if you think this is true or false.

- The golden turret has a capacity of 960 persons and contains two levels of restaurants, an Observation Deck, two telecommunication transmission levels and three plant levels

- The height of Sydney Tower from the bottom to the very tip of the spire is 309 metres

- Three double deck lifts provide access to the Sydney Tower Eye Observation Deck and restaurants

- The 1504 fire-isolated sets of pressurised stairs, closely monitored by security, allow patrons direct access to street level, in case of an emergency

- The 420 windows of the tower are cleaned by a semi-automatic window cleaning machine name 'Charlie'. 'Charlie' recycles and filters 50 litres of water and takes two days to clean all the windows

- A 162,000 litre water tank, the tower's primary damping system also acts as a stabiliser for the tower

- 56 cables stabilise the tower, and if the strands of these cables were laid end to end, they would reach from Sydney to Alice Springs or from Sydney to New Zealand

- The spire located above the Tower is used for telecommunications and navigation purposes

- Contrary to popular belief, Sydney Tower was never officially named Centrepoint Tower

- Sydney Tower is the first to see the Sydney dawn, and the last to see its final dusk

- Sydney Tower retains its original name today as simply 'Sydney Tower', with the Sydney Tower Eye being the name of the viewing attraction located on the upper level, providing the best views from the highest point in the city

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### Section 5

Back at school either using a 3D printer, construction material like LEGO® or paper make a 3D model of the Sydney Tower Eye. Take a picture of it and send it to us to share with other schools!

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