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**STRUCTURES** 1. UNDERSTANDING FRAMES 2. TRIANGULATION 3. BEAMS AND SECTIONS 4. FRAME STRUCTURES 5. HISTORY OF BRIDGES 6. MAKING AND TEST A

7. BRIDGE DISASTERS

8. TWO MORE FAMOUS

**STRUCTURES** 

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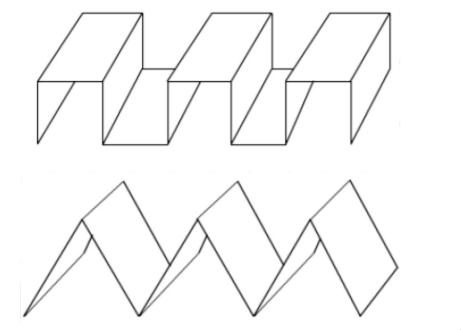
**ARE YOU READY? USE THE MOBILE App!!** 

TWO FRAME STRUCTURES ARE SHOWN BELOW. IN THE NEXT BOX, PASTE TO MORE EXAMPLES OF FRAME STRUCTURES.

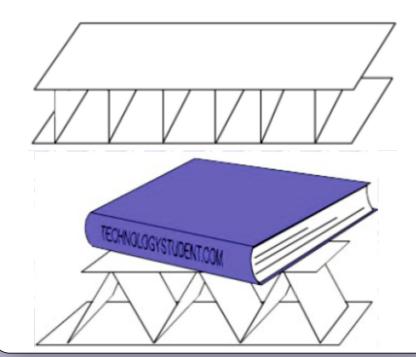


TWO MORE FRAME STRUCTURE **EXAMPLES:** 

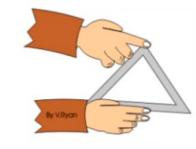
MAKE THE SQUARE AND TRIANGULATED FRAMES SEEN BELOW, FROM CARD. WHICH IS THE STRONGEST? Place a 'tick' next to the strongest.



NOW GLUE CARD ON THE TOP AND **BOTTOM. TEST AGAIN.** 

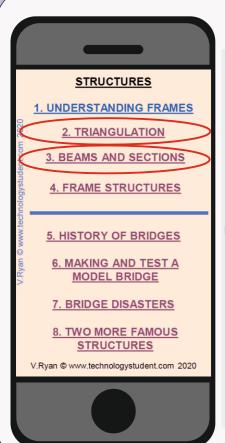


WHY IS 'TRIANGULATION' POPULAR IN THE CONSTRUCTION OF BUILDINGS AND OTHER STRUCTURES?.



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# **STRUCTURES**

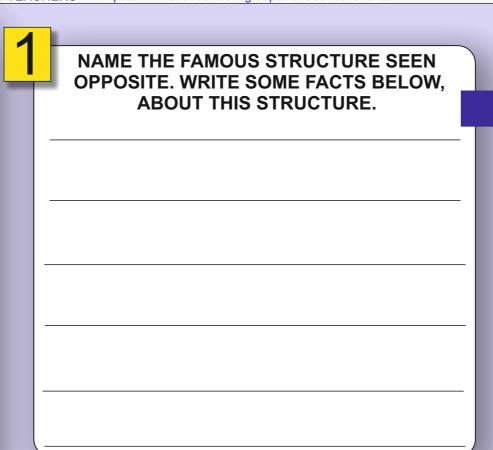
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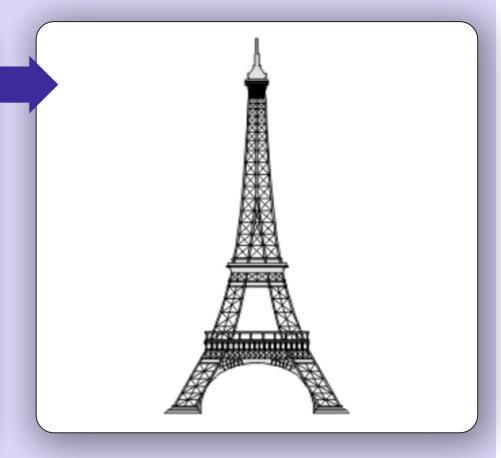
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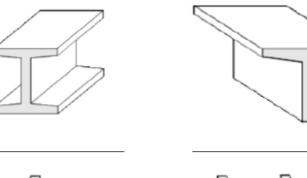


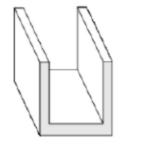


WHY IS THE ROOF OF THIS BUILDING SUPPORTED BY A TRIANGULATED STRUCTURE?



NAME EACH OF THESE BEAM SECTIONS.

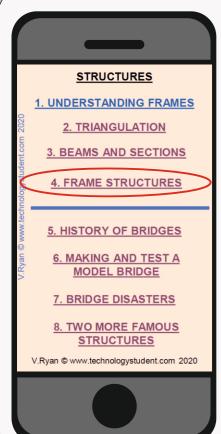




HOW AND WHY ARE BEAMS, SUCH AS THOSE SEEN IN BOX 3, USED IN THE **CONSTRUCTION OF BUILDINGS?** 

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### **STRUCTURES**

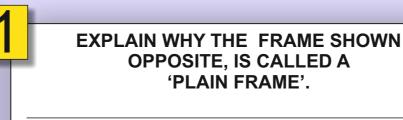
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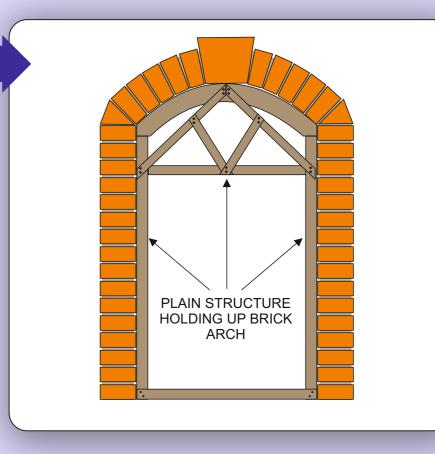
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THIS IS AN EXAMPLE OF A 'STRUCTURAL FRAME' WHAT IS A STRUCTURAL FRAME? Make reference to the example shown below.



YOUR ANSWER.

WHAT IS A SPACE FRAME STRUCTURE? Name and describe an example of this type of structure.

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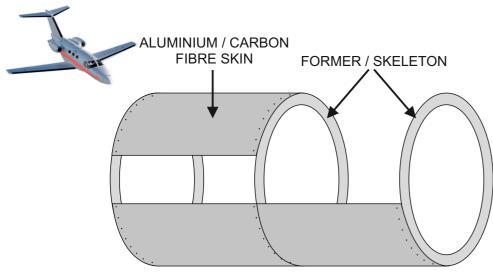
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**ARE YOU READY? USE THE MOBILE App!!** 

A								
	WHAT IS A 'MONOCOQUE' STRUCTURE?							
	Make reference to the example shown in the							
	next box.							



HERE IS A 'SEMI-MONOCOQUE' STRUCTURE. With reference to the image, explain why it is regarded as 'semi-monocoque'.



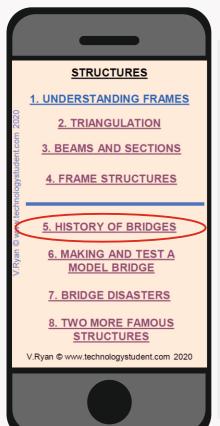
YOUR ANSWER.

**USE THE INTERNET TO FIND AN IMAGE** OF ANOTHER MONOCOQUE and ALSO A SEMI-MONOCOQUE PRODUCT

Paste and label in the space below.

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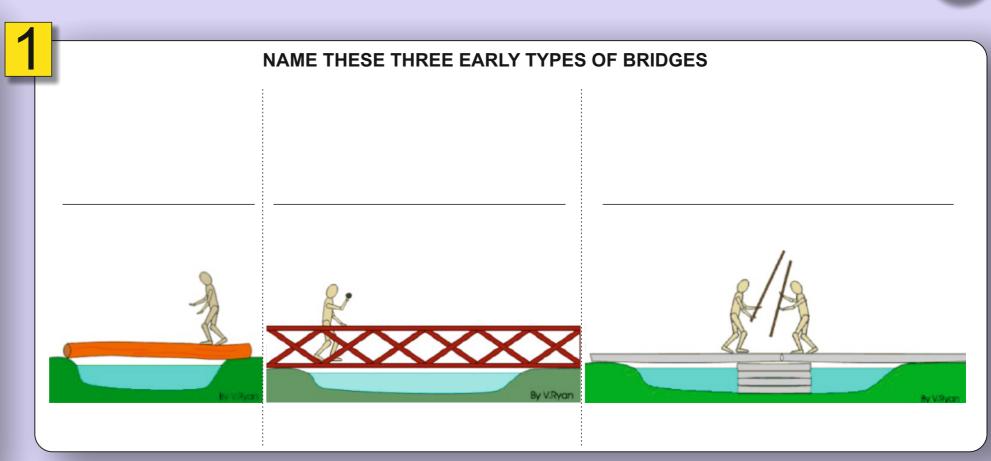
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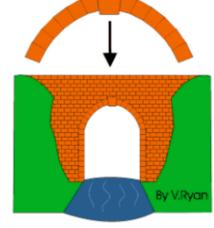
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WHY IS THE KEY STONE OF A STONE ARCH **BRIDGE, VERY IMPORTANT?** 







YOUR ANSWER.

NAME:

LOCATION:



NAME THIS IMPRESSIVE, ROMAN,

STONE ARCH BRIDGE. INCLUDE LOCATION.

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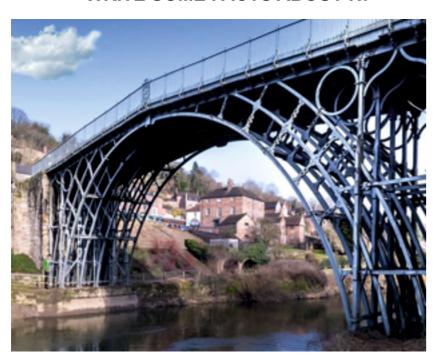


### NAME AND WRITE SOME FACTS ABOUT THIS FAMOUS BRIDGE.



_			

THIS IS THE FIRST IRON BRIDGE IN THE WORLD. WRITE SOME FACTS ABOUT IT.



YOUR ANSWER.

NAME THIS, STONE VIADUCT. INCLUDE LOCATION.

NAME:

LOCATION:



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**ARE YOU READY? USE THE MOBILE App!!** 

### NAME AND WRITE SOME FACTS ABOUT THIS SUSPENSION BRIDGE (USA).



NAME THIS SUSPENSION BRIDGE.

THIS IS THE WORLD FAMOUS FORTH RAIL BRIDGE IN QUEENSFERRY SCOTLAND. Write some facts about it in the next box.



YOUR ANSWER.

**LOCATION: Japan** NAME: