

## Natural and Human-made Structures

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Student

Class

### Classifying Structural Forms

1. A student who was studying for a rest remembered the different models the teacher used in class to identify the different kinds of structures. When the teacher made a tent-like position with the hands, the student remembered it represented a ...
  - A. mass
  - B. shell
  - C. frame
  - D. solid
2. Piling materials into a particular shape, or design makes a solid structure. The following are examples of natural solid structures ...
  - A. dams and mountains
  - B. brick walls and coral reefs
  - C. ice sculptures and sand castles
  - D. mountains and coral reefs
3. A frame structure like your skeleton is made of very strong materials so they can support the ...
  - A. ligaments
  - B. cartilage
  - C. joints
  - D. organs
4. Egg cartons, food cans, bottles and pipes are examples of ...
  - A. manufactured shell structures
  - B. natural shell structures
  - C. manufactured frame structures
  - D. natural frame structures
5. Spider webs are examples of structures that can hold up to 4000 times the weight of the spider that made it. The spider web is a ...
  - A. solid frame structure
  - B. solid shell structure
  - C. natural shell structure
  - D. natural frame structure
6. All of the following structures can be classified as manufactured, EXCEPT a ...
  - A. jigsaw puzzle
  - B. spoon
  - C. feather
  - D. fishing net
7. How a structure is put together, how it is shaped and the types of materials that are used to build it are all part of the structure's ...
  - A. design
  - B. function
  - C. classification
  - D. stability

## The Function of Structures

8. Containing, sheltering, transporting, lifting ... are all words to describe a structure's ...
- design
  - stability
  - function
  - aesthetics

9.



*Inukshuit* is a symbol of Inuit culture, always pointing the way home. To anyone who encounters these manufactured structures (also a symbol of the 2010 Olympics) the greeting they convey is one of joy and happiness. Their purpose is to ...

- show danger
- guide travelers
- reward hunters
- identify hazards

10.

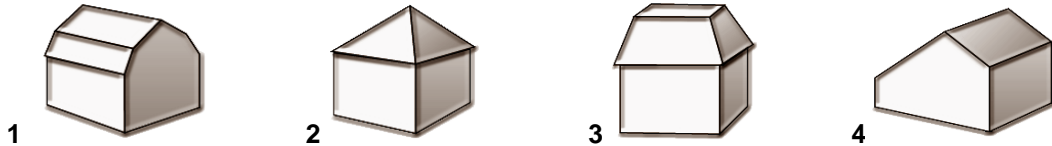


The 5 glass-pyramids of this **Conservatory** house different types of plant cultures, including; tropical, arid and temperate. It is more than just a garden though, because it hosts many premier floral shows, educational programs for school children, horticultural courses for adults and continues as a very popular site for weddings, banquets and business functions.

Because these structures are used for a variety of reasons, they have multiple

- designs
  - functions
  - shapes
  - forms
11. Roof types are designed for cover and also to serve a useful purpose in the environment in which they can be found. A very steep roof design in a mountainous area is designed to prevent ...
- heavy rains
  - snow build-up
  - climbing animals
  - wind damage
12. The paint roller served a very important function, which was to paint a large area ...
- faster and easier
  - with less skill required
  - with better quality paint
  - in a more expensive way
13. A rancher invented barbed wire to keep his livestock from wandering off. His idea came from a natural structure, a ...
- cactus
  - tumbleweed
  - prickly pear
  - thorny bush
14. When choosing the most suitable materials to build a structure, architects, engineers and designers should consider all of the following before making their final choice ...
- cost, appearance, environmental impact, energy efficiency
  - cost, color, life expectancy, impact strength
  - environmental appearance, type of symmetry, type of joints needed, cost effectiveness
  - flexibility, impact strength, energy efficiency, color

- 15 Some structures share the same function, although their appearance may be quite different. Each of the following roofs is used to provide a covering for a building.



Which roof type – called a gambrel roof - is commonly seen on a farm?

- A. 1
- B. 2
- C. 3
- D. 4

16. Each manufactured structure can be paired with a natural structure it is based on.



Only one of the pairings below is correct. Which one is it?

- A. 6 - 1
- B. 3 - 6
- C. 6 - 5
- D. 2 - 6

17. One important criteria of good design - that is usually not written down in the specifications - is that the structure ...

- A. has a margin of safety
- B. is esthetically pleasing
- C. is cost effective
- D. has a solid foundation

### Human-Built Structures Around The World

18. **Stonehenge** is an ancient monument, located in England. It was built more than ...

- A. 30 years ago
- B. 300 years ago
- C. 3000 years ago
- D. 30,000 years ago



19. Sun-baked '**Adobe**' brick houses are usually found in countries where the climate is ...

- A. Wet and cool
- B. Hot and dry
- C. Temperate
- D. Damp and cold



20. The *Taj Mahal* in India is a ...
- A. tomb
  - B. temple
  - C. mosque
  - D. castle



21. *Sod houses* were common on the prairies and were used by ...
- A. engineers
  - B. settlers
  - C. businessmen
  - D. contractors



22. *Current or Classical?* The sailing vessel illustrated here was used as a pirate ship. It's big advantage was that it could ...
- A. hide easily
  - B. sail fast
  - C. not be sunk
  - D. sail with no wind



23. Both of these structures are houses for people in very specific environments. One advantage of structures such as these is that they ...
- A. are portable
  - B. are fireproof
  - C. keep out animals
  - D. protect from the cold nights



Igloo



tent

24. When a structure is built to withstand loads - more than it normally would carry - the structure is built with a larger ...
- A. foundation
  - B. symmetrical base
  - C. set of pilings
  - D. margin of safety

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