Name: ANSWER KEY Bridge Unit Review Sheet

**Bridge 1: Verazanno Bridge**

Where does it connect?

BROOKLYN TO STATEN ISLAND

What type of bridge is it?

SUSPENSION

Where did the name come from?

GIAVANI DE VERAZANNO – FIRST EUROPEAN EXPLORER TO SAIN INTO NY HARBOR

When was it built? OPENED IN 1964

**Bridge 2: Brooklyn Bridge**

Where does it connect?

MANHATTAN TO BROOKLYN

Who designed it?

JON ROEBLING

When was it built? OPENED IN 1883

3. What are the following bridges known for?

Millau Viaduct

Is held up by the highest pylons in the world (803 feet high) and has the highest road-bridge deck in Europe (886 feet). But, most importantly, it reaches 1,125 feet at its highest point, making it the tallest bridge in the world

Goltzsch Valley Bridge

Most Bricks Used to Build a Bridge – 20 MILLION

Heartland Covered Bridge

LONGEST COVERED BRIDGE 1282FT

Golden Gate Brige

MOST PHOTOGRAPHED/TRADEMARK INTERNATIONAL ORGANGE COLOR/MORNING FOG

Caravan Bridge

Built in 850 B.C., the bridge is 2,861 years old. OLDEST BRIDGE

Sydney Haurbor

Measuring 160 feet across, this suspension bridge has room for eight lanes of traffic, two railroad tracks, a pedestrian walkway, and a bicycle path

George Washington

MOST TRAFFICED/14 LANES OF TRAFFIC

4. Who is John Roebling?

John Augustus Roebling (born Johann August Röbling, June 12, 1806 – July 22, 1869) was a German-born [American](http://en.wikipedia.org/wiki/United_States) [civil engineer](http://en.wikipedia.org/wiki/Civil_Engineering). He is famous for his [wire rope](http://en.wikipedia.org/wiki/Wire_rope) [suspension bridge](http://en.wikipedia.org/wiki/Suspension_bridge) designs, in particular, the design of the [Brooklyn Bridge](http://en.wikipedia.org/wiki/Brooklyn_Bridge).

5. Why is Robert Moses famous?

Robert Moses (December 18, 1888 – July 29, 1981) was the "master builder" of mid-20th century New York City, Long Island and Westchester County

6. List five different types of bridges.

1. SUSPENSION 2. TRUSS 3. BEAM 4. ARCH 5. CABLE-STAYED 6. CANTILEVER

7. Explain the seven Resources for Technology.

1. PEOPLE – MAIN FORM OF LABOR AND CONSUMERS OF TECHNOLOGY

2. INFORMATION – TO RECEIVE AND ANALYZE DATA

3. MATERIALS – SUPPLIES NEEDED TO COMPLETE A TASK

4. TIME – AVAILABILITY TO COMPLETE A TASK

5. CAPITAL - MONEY

6. TOOLS – EQUIPMENT AND MACHINES NEEDED TO COMPLETE A TASK

7. ENERGY – RENEWABLE/NON-RENEWABLE

8. Why are triangles so strong?

Triangles are the ONLY polygon that cannot be 'squished' without changing the length of one or more sides

In the real world, triangular construction means that the beams themselves have to be stretched or compressed before the structure will experience any movement, which means that the stuctures can handle huge loadings before failure.

9. How do you strengthen a square in order to prevent racking?

BY ADDING A DIAGONAL BRACE, TURNING THE SQUARE INTO TRIANGLES.

10. Define the following:

1. Compression – a force that squeezes material together  
  
2.    Tension – a force that pulls material apart  
  
3.    Roadway – the surface where cars, people, and traffic pass over  
  
4.    Superstructure – the portion of the bridge above or below the roadway  
  
5.    Load – weight  
  
6.    Live Load – the weight of the cars and people  
  
7.    Dead Load – weight of the bridge plus snow and ice  
  
8.    Span – Distance between the supports  
  
9.    Truss – A specific type of beam  
  
10. Racking – When a square of rectangle distorts into a rectangle  
  
11. Diagonal Brace – Prevents RACKING by making a square into to triangles  
  
12.  Triangle  - Strongest shape

11. Draw the following:

A. Truss Bridge

B. Suspension Bridge

C. Arch Bridge

D. Beam Bridge