

EXPERIENCE WORKSHOP



**THE EXPERIENCE-CENTERED
MATH/ART MOVEMENT**
www.experienceworkshop.org



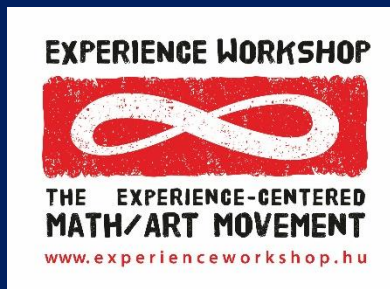
Experience Workshop's STEAM Learning Material

4Dframe BRIDGE BUILDING CHALLENGE

Dr. Kristóf Fenyvesi
University of Jyväskylä

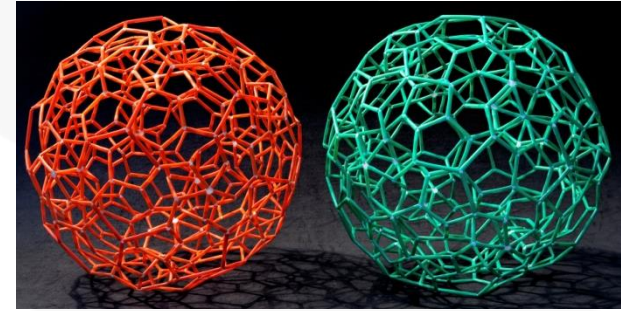


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of the European Union



Introduction of 4D Frame

For Free Imagination and Infinite creativity

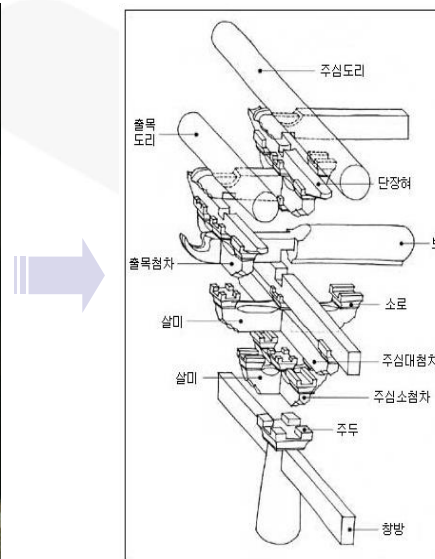


The Brand : 4D Frame

- ❖ The 4Dframe educational modelling kit is based upon the analysis of building techniques utilized in the construction of Korea's traditional, wooden buildings, in which no any nails have been used.
- ❖ 4Dframe has been proved to be a very appropriate tool for developing various skills in the transdisciplinary framework of STEAM learning.



Traditional Korean Wooden Palace



Principle of Architecture



4D Frame Tube

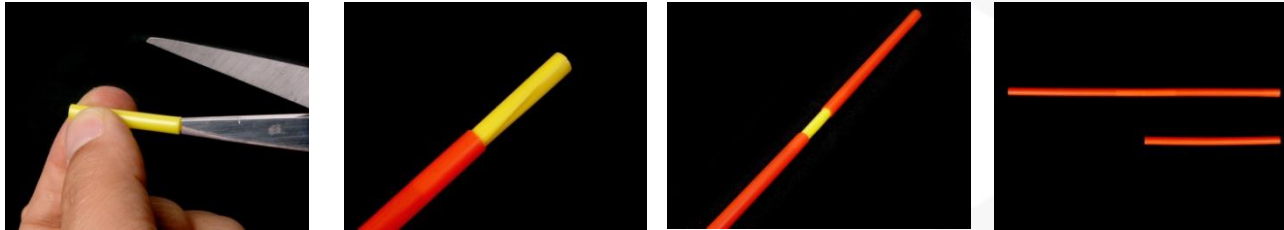


4D Frame Connector

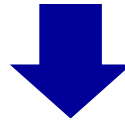
Character : Flexibility



Bend, Cut & Connect!

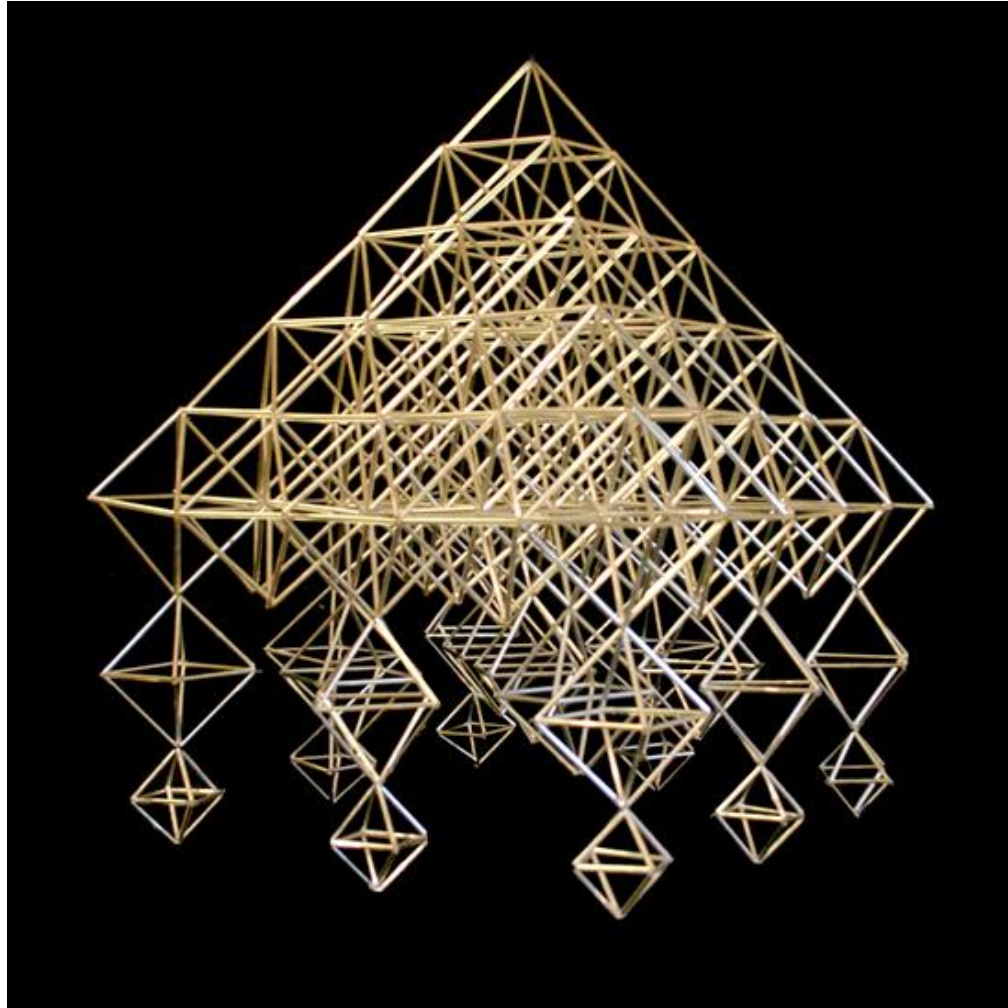
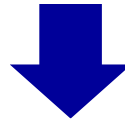


Character : Infinite Expansion



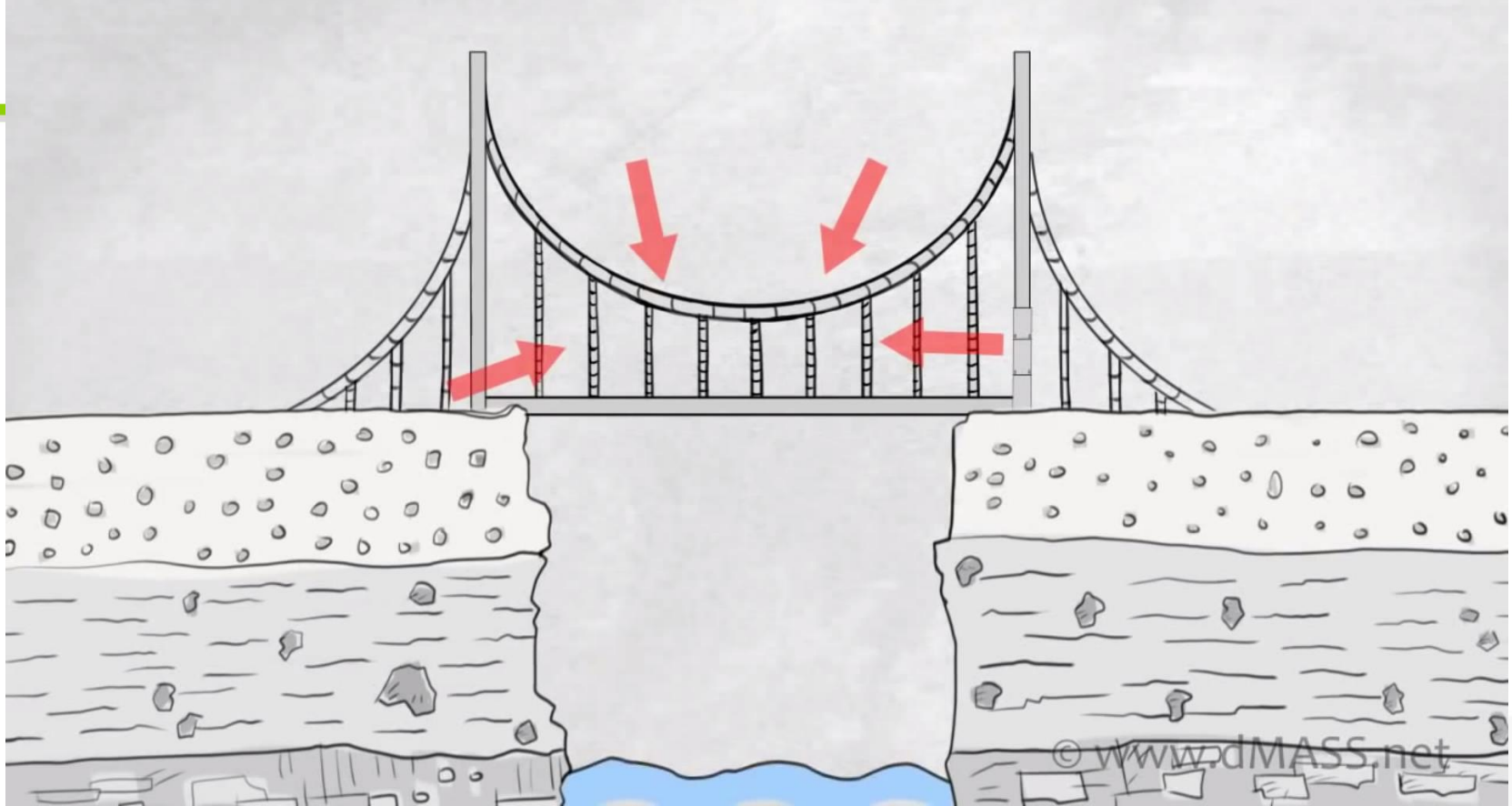
(주) 포디랜드 · 포디창의연구소

Character : Infinite Expansion



The traditional Nordic
christmas decoration:
the himmeli





Doing more with less (Ephemerization)

Buckminster Fuller

D-MASS: <https://www.youtube.com/watch?v=X8lqnO7aYe0>



Truss bridge

A truss bridge is a bridge whose load-bearing superstructure is composed of a truss, a structure of connected elements forming triangular units.

The connected elements (typically straight) may be stressed from tension, compression, or sometimes both in response to dynamic loads.

Truss bridges are one of the oldest types of modern bridges.

A truss bridge is economical to construct because it uses materials efficiently.







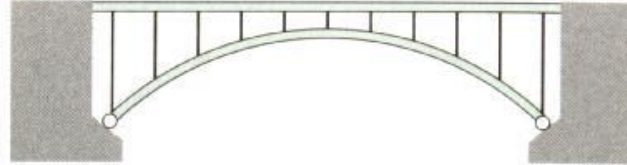






아치교 종류

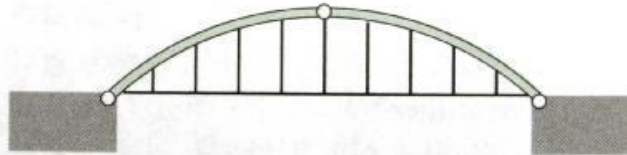
2한지 판형 아치(상로형식)



고정 브레이스트 리브 아치(상로형식)



3한지 판형 아치(하로형식)



2한지 스패드럴 브레이스트 아치(상로형식)









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yudjchoi...



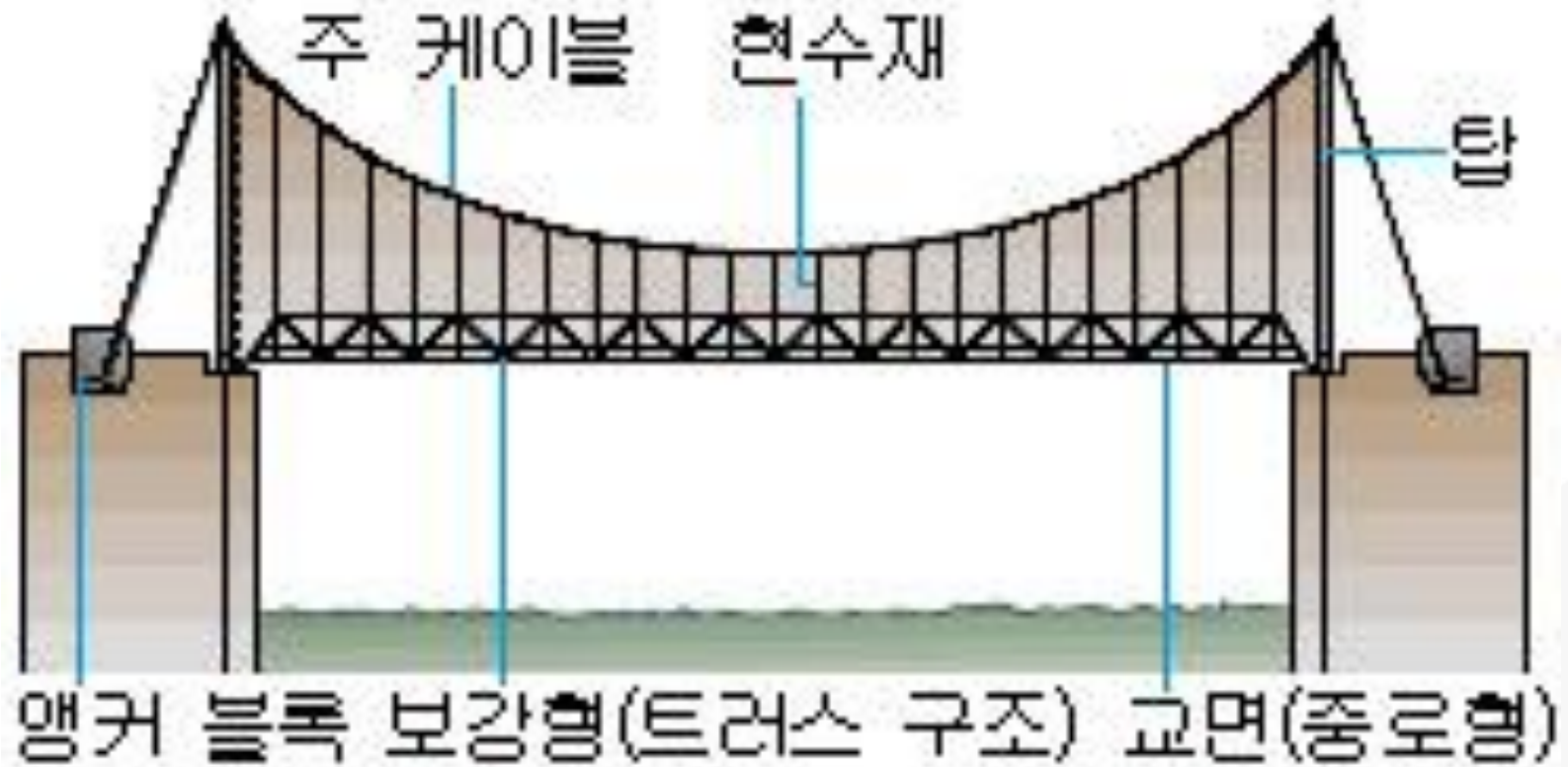


















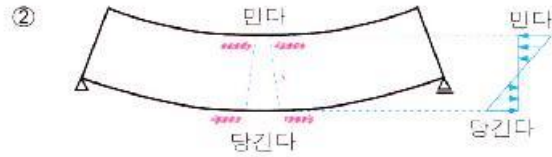
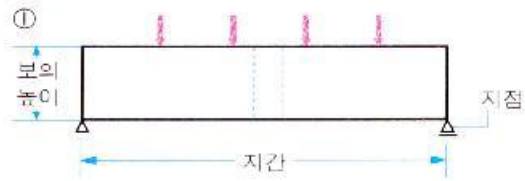




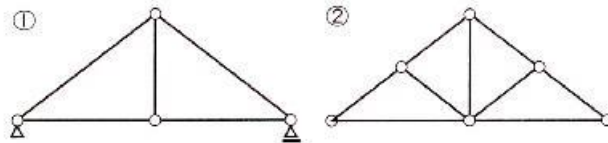




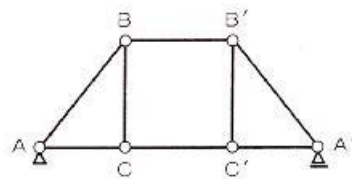
[그림 1]



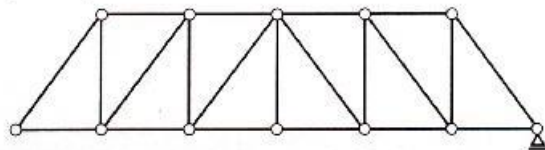
[그림 4] 킴포스트 트러스



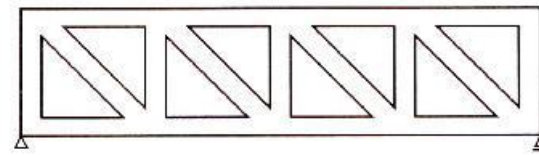
[그림 5] 쿼포스트 트러스



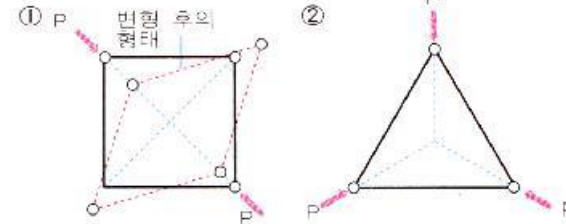
[그림 7] 하우 트러스



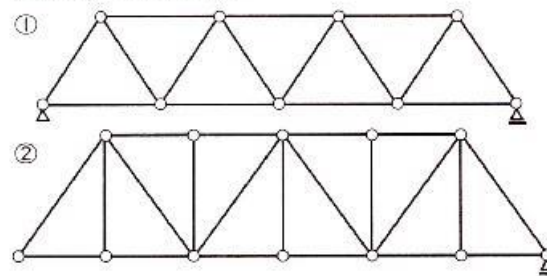
[그림 2]



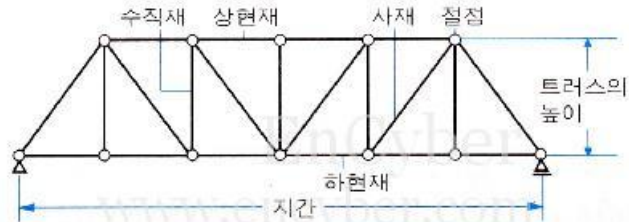
[그림 3]



[그림 6] 워런 트러스



[그림 8] 플랫 트러스















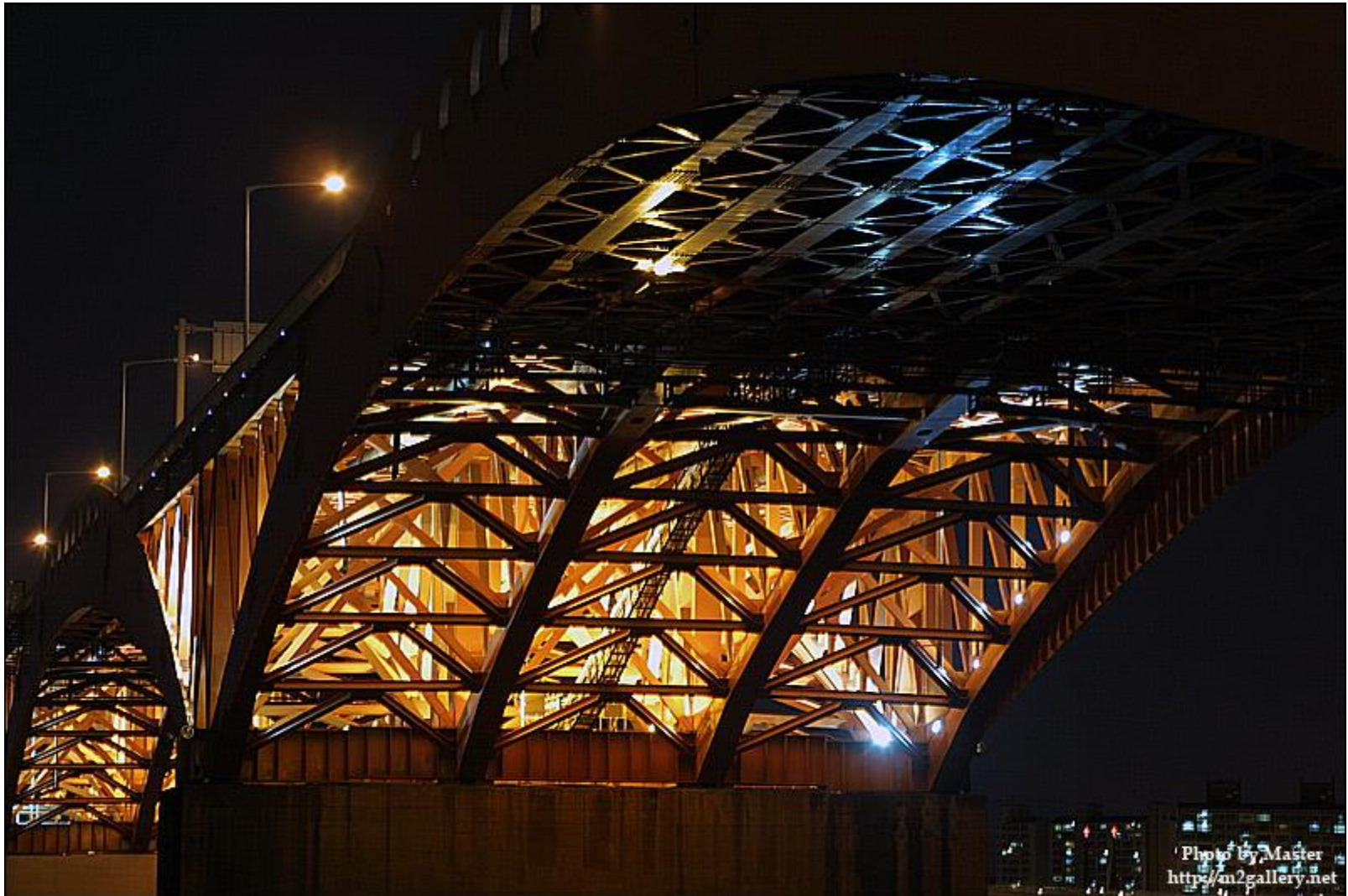




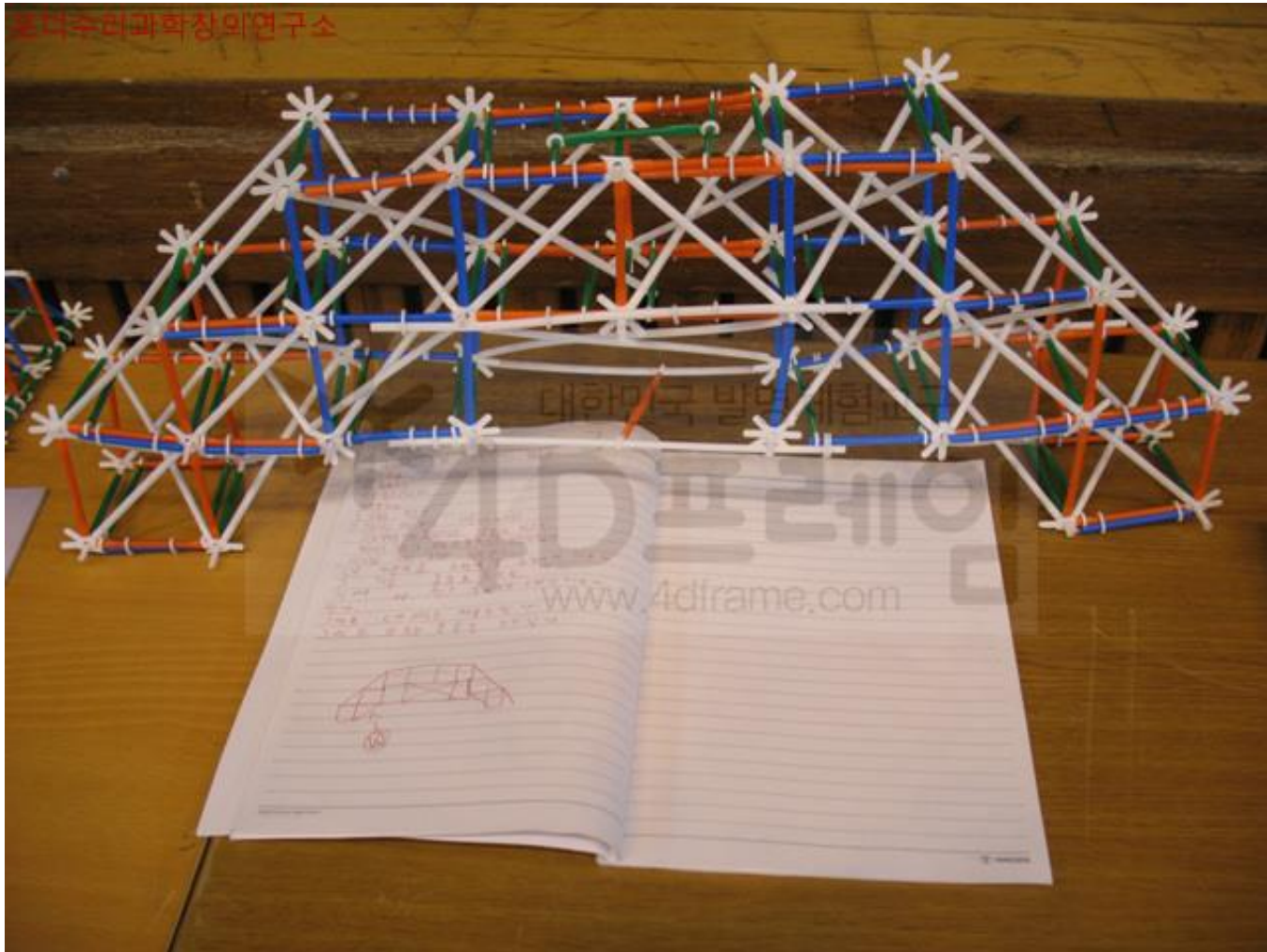
















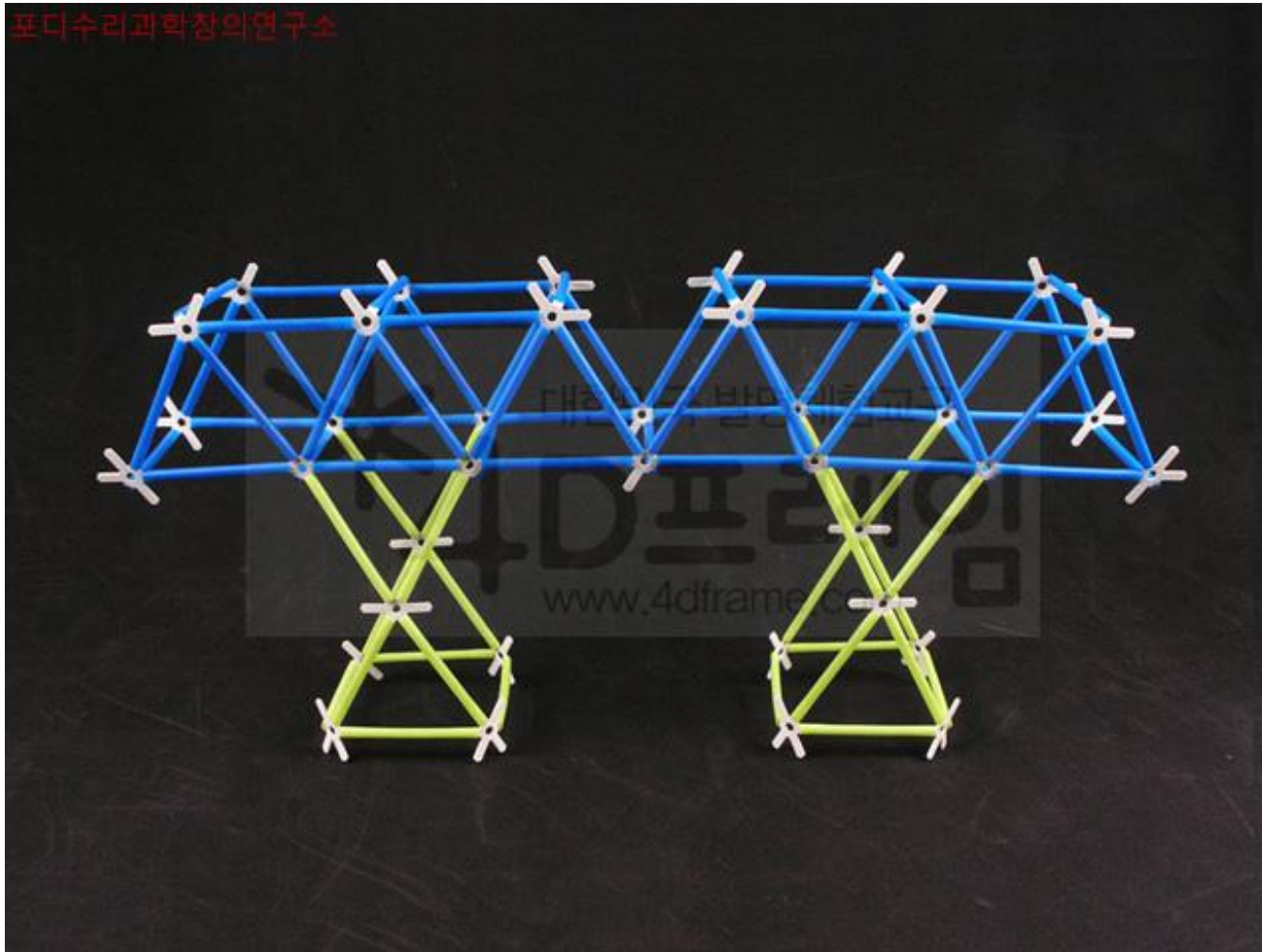




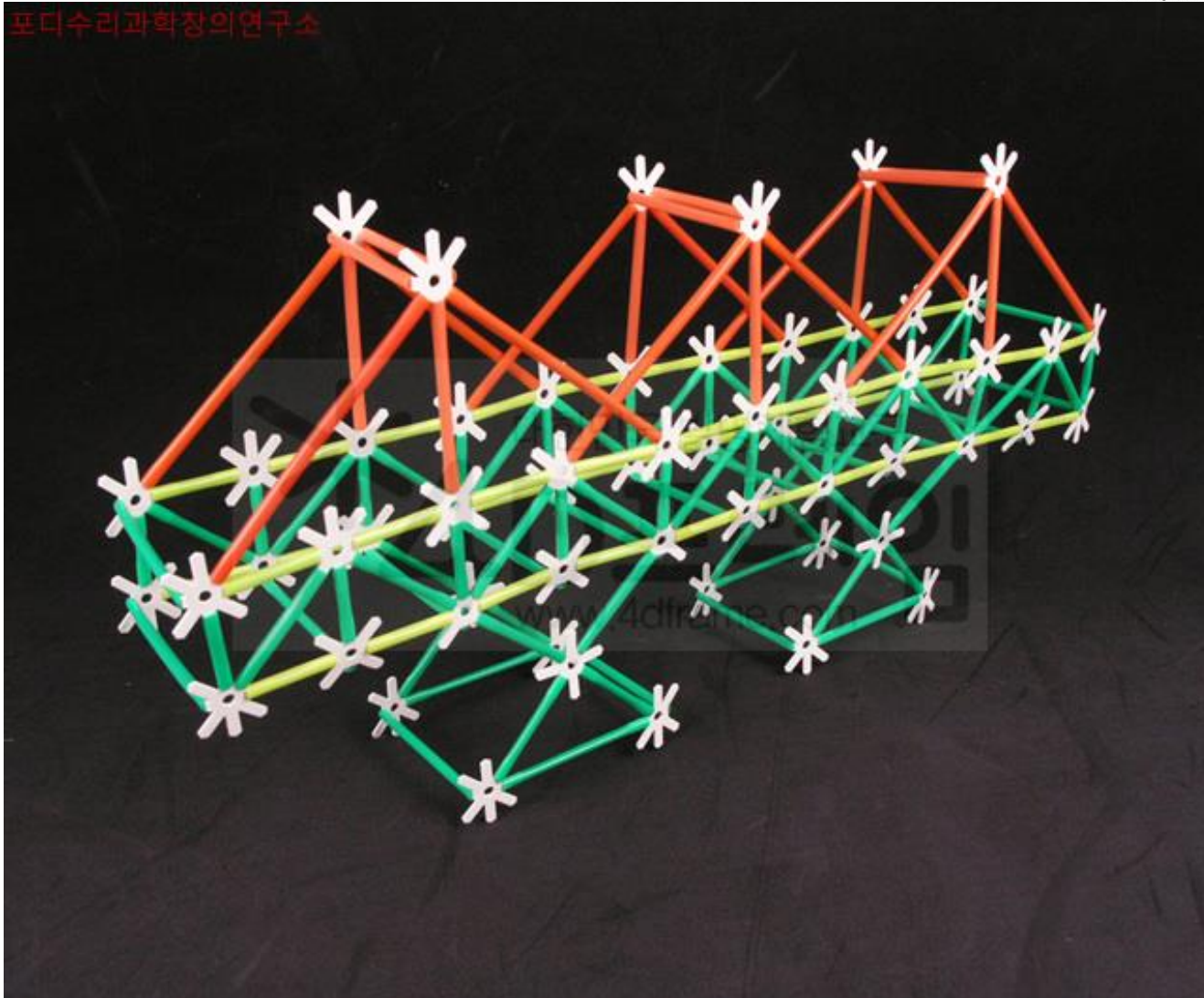
포디수리과학창의연구소

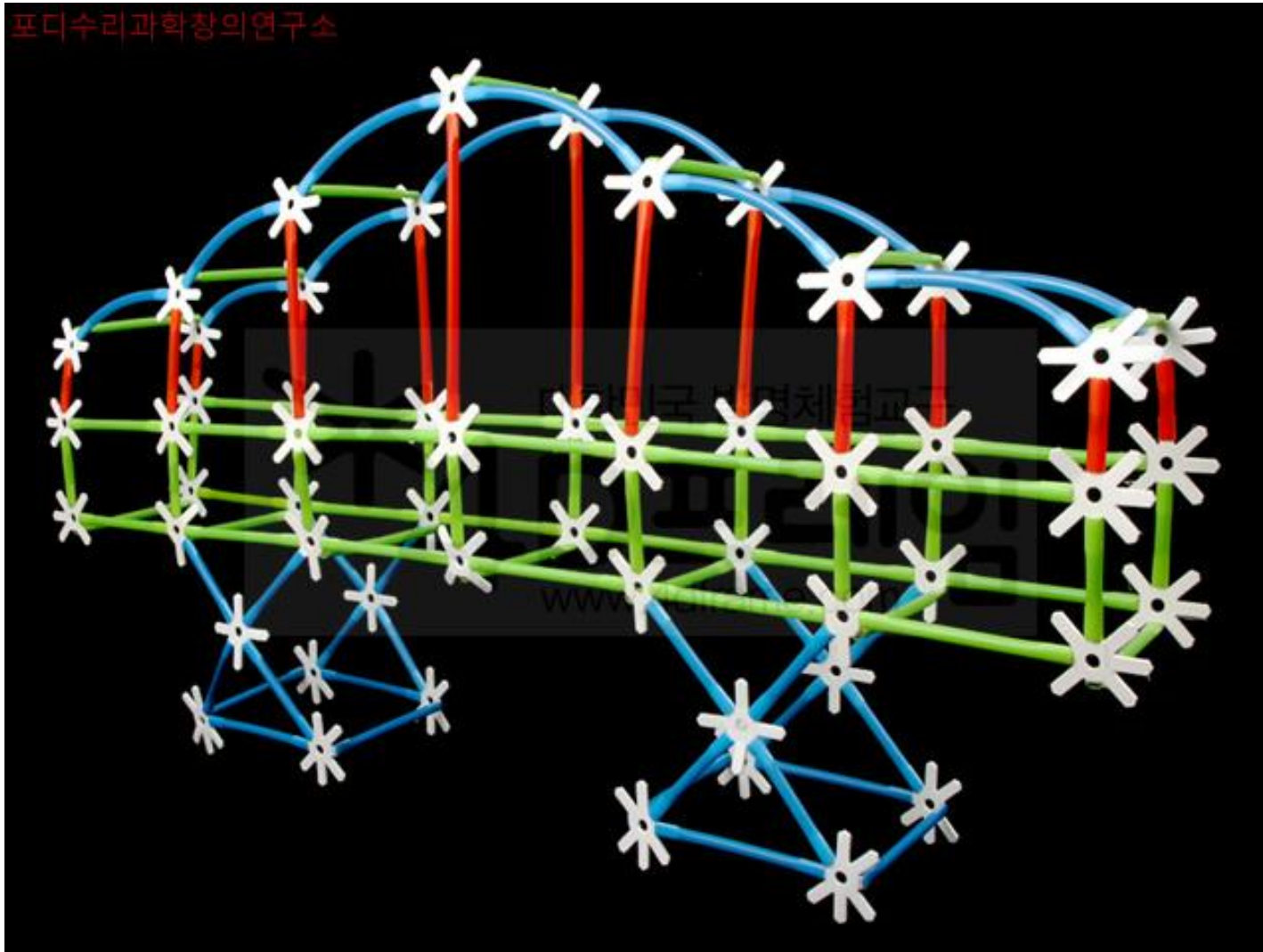


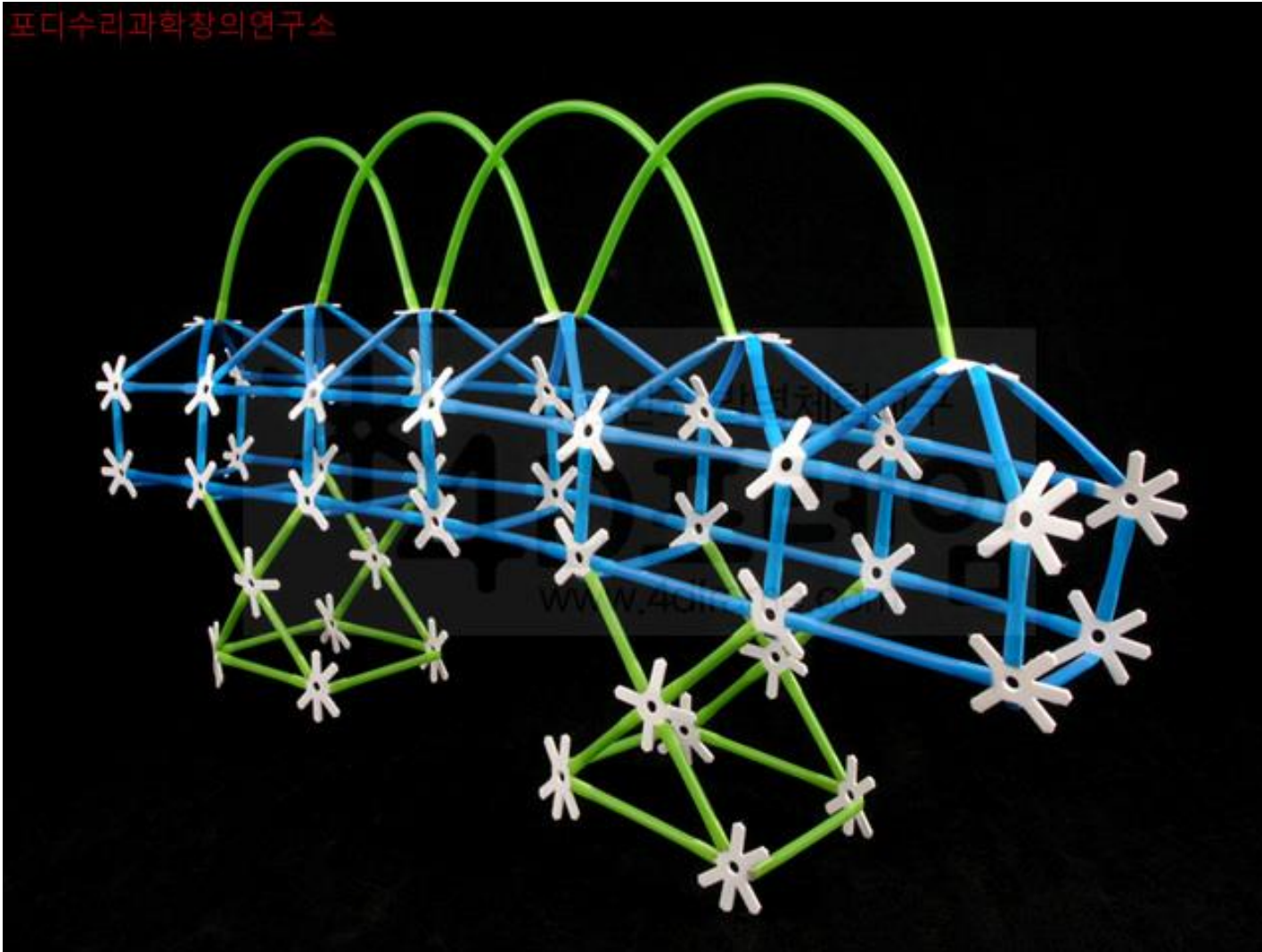


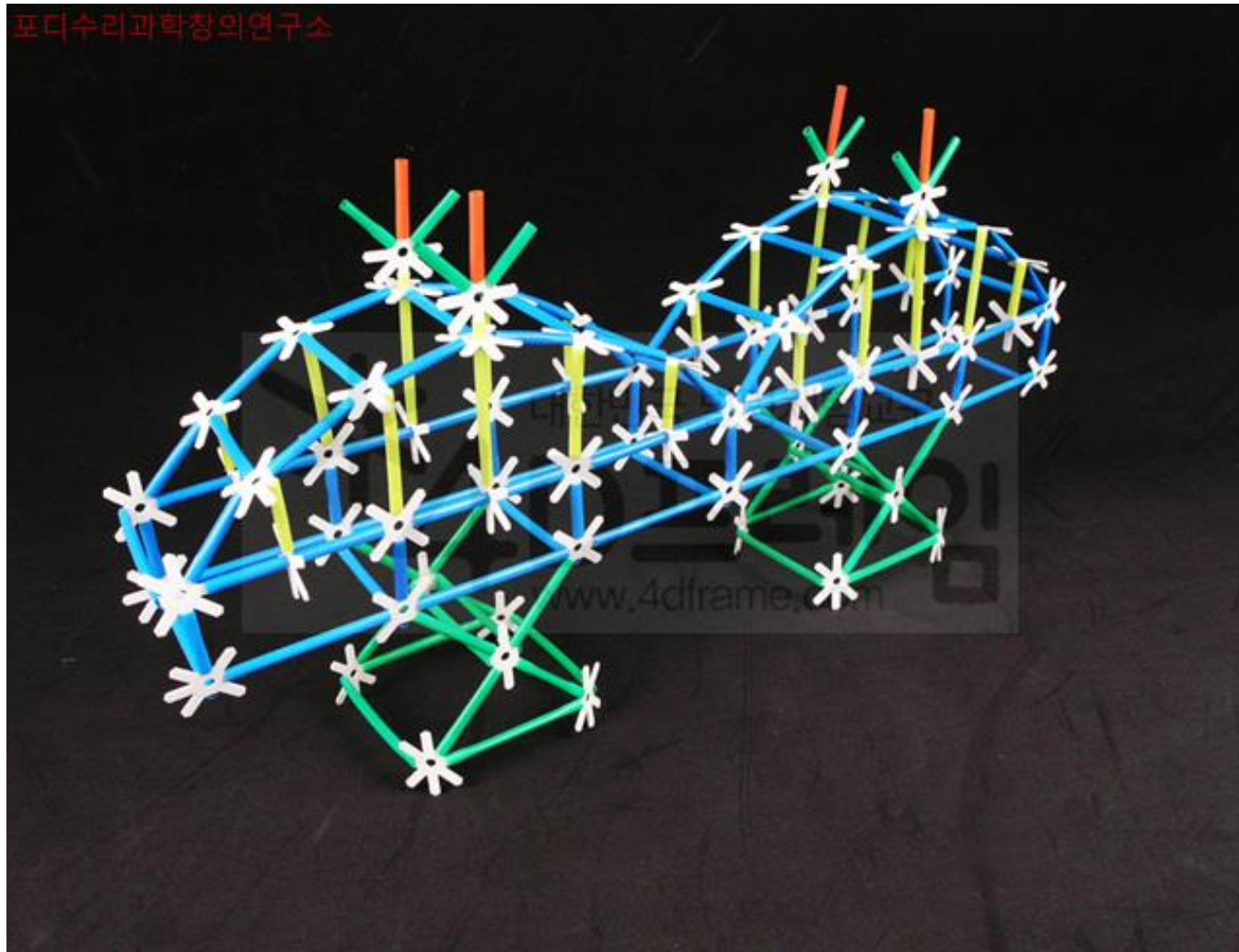


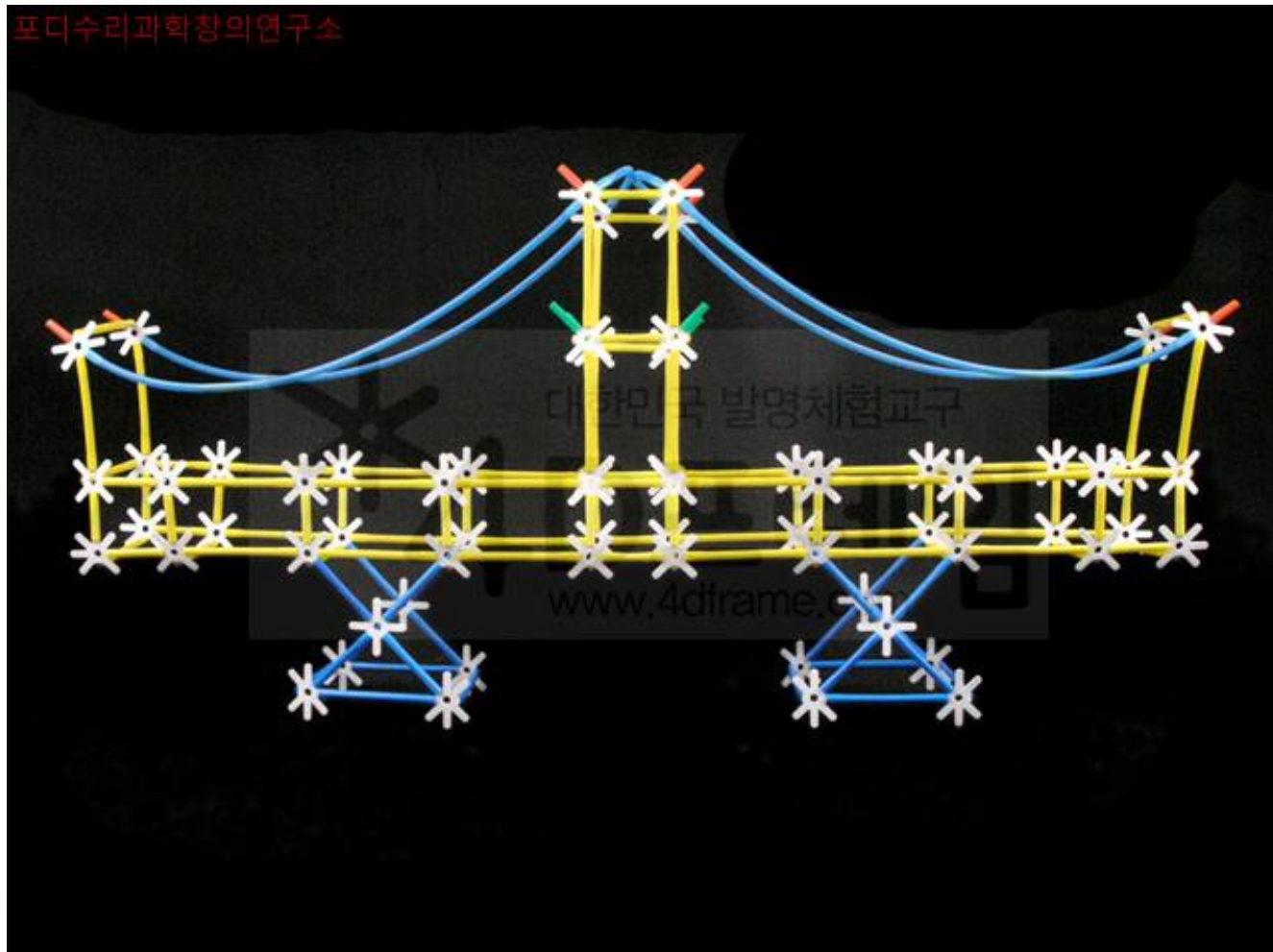
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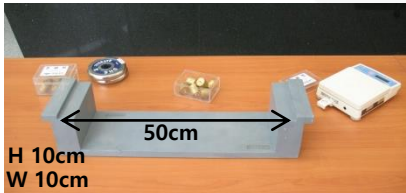
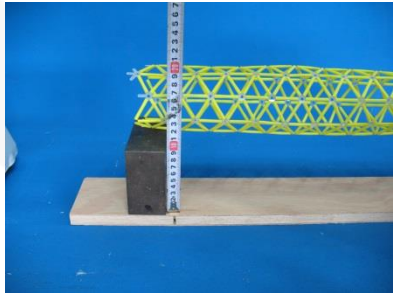




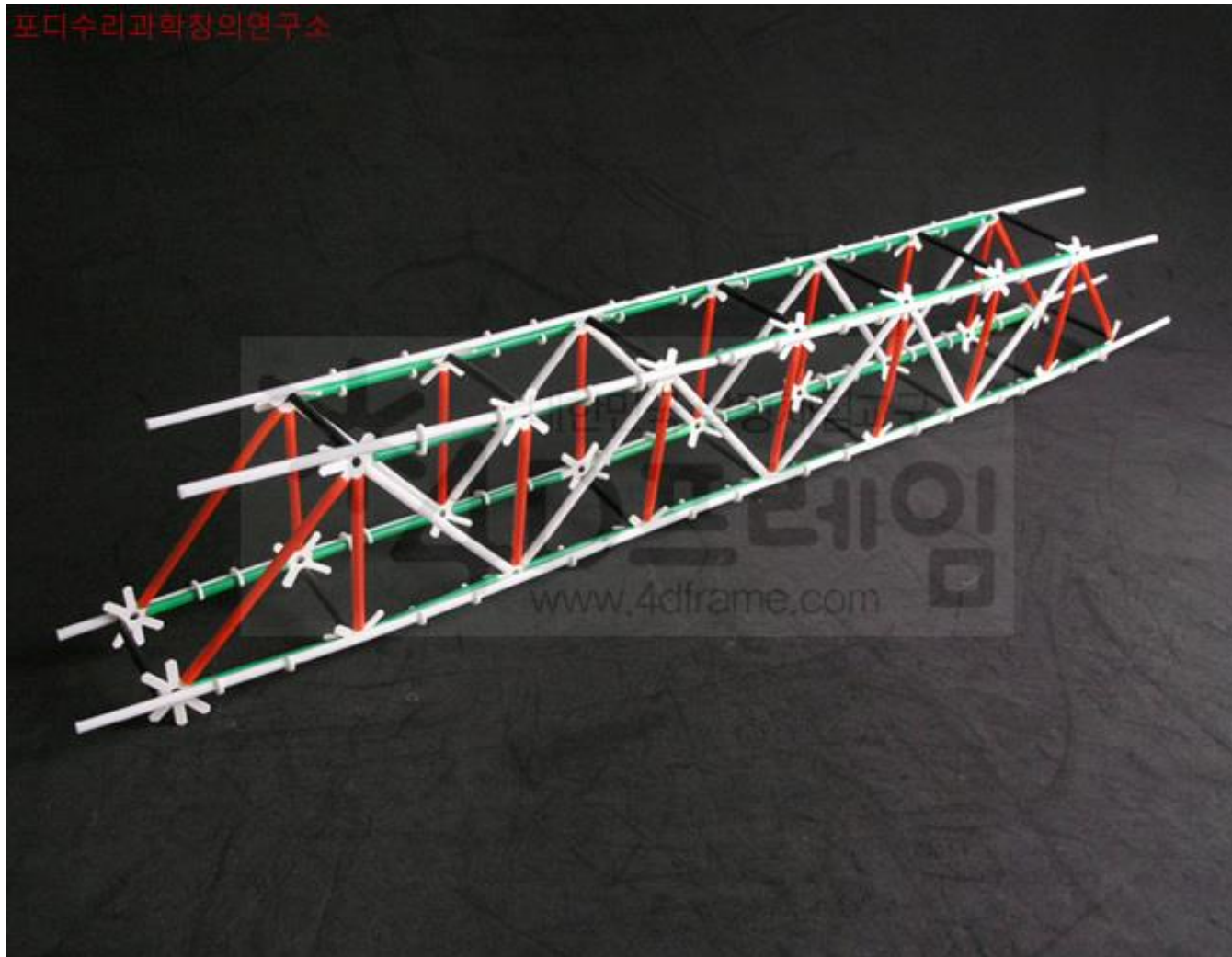








 <p>H 10cm W 10cm</p>	 <p>30Cm</p>
 <p>50Cm</p>	 <p>무게 500g부터 기록</p>



포티수리과학창의연구소



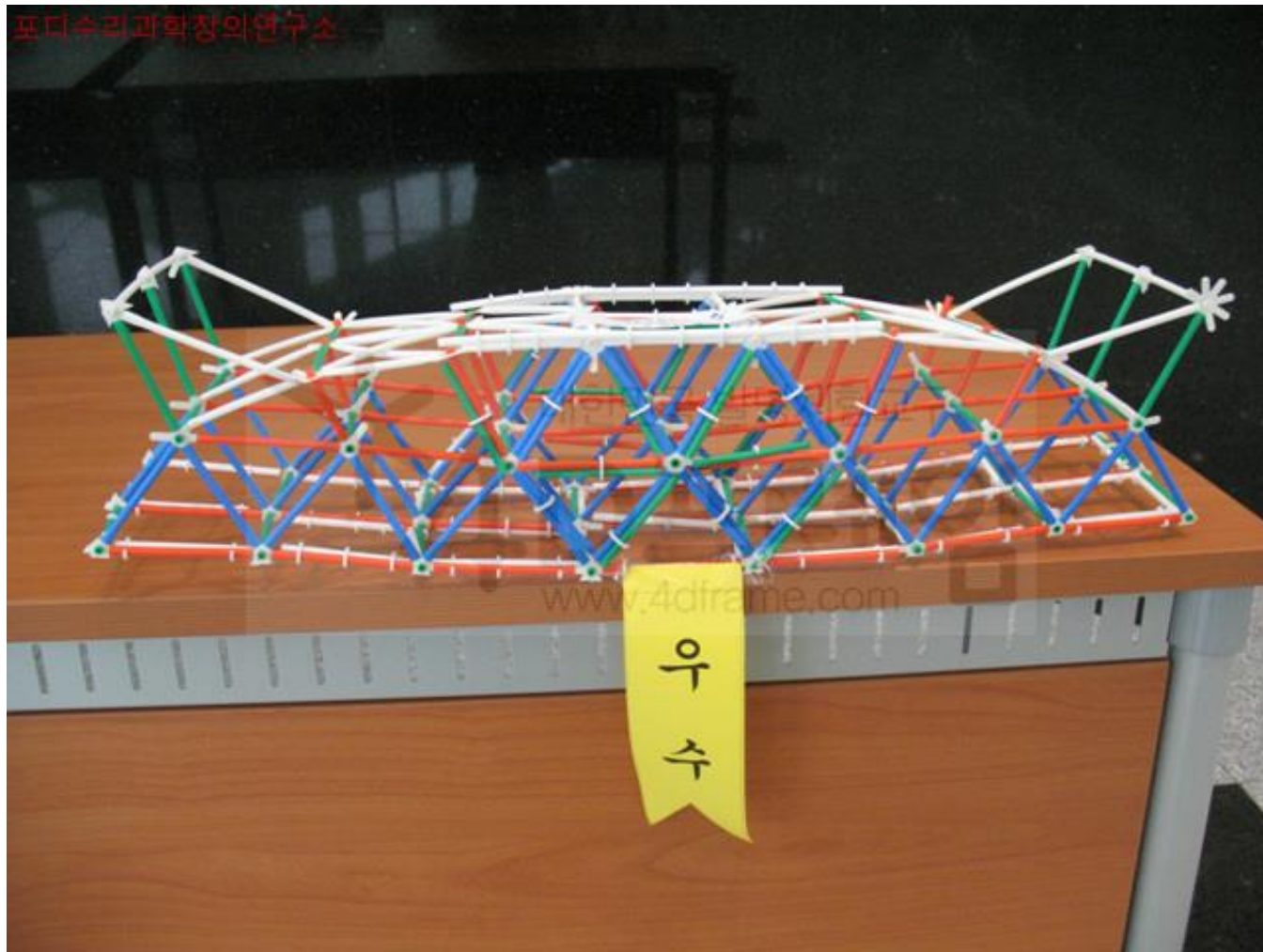
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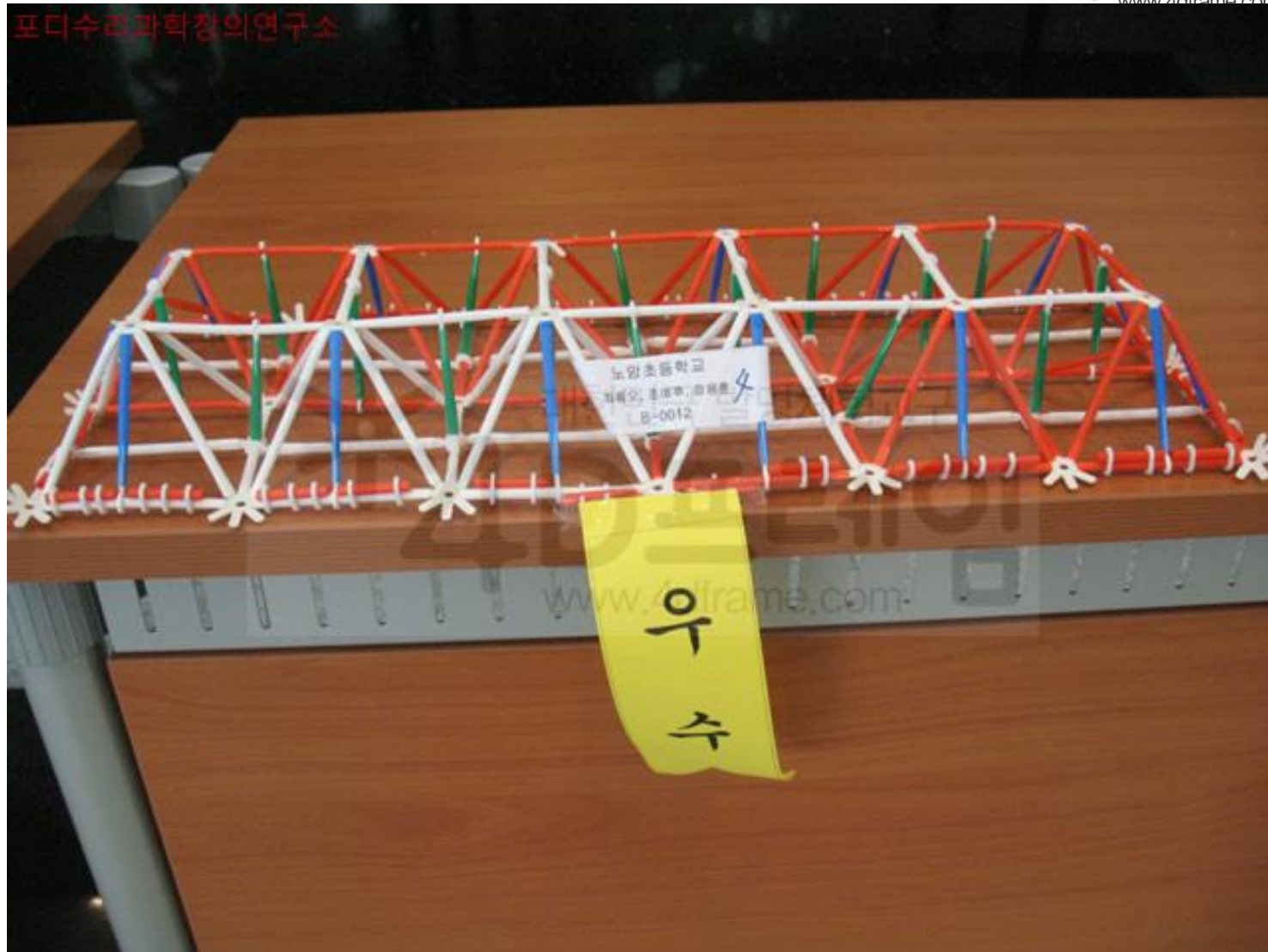




포디수리과학창의연구소



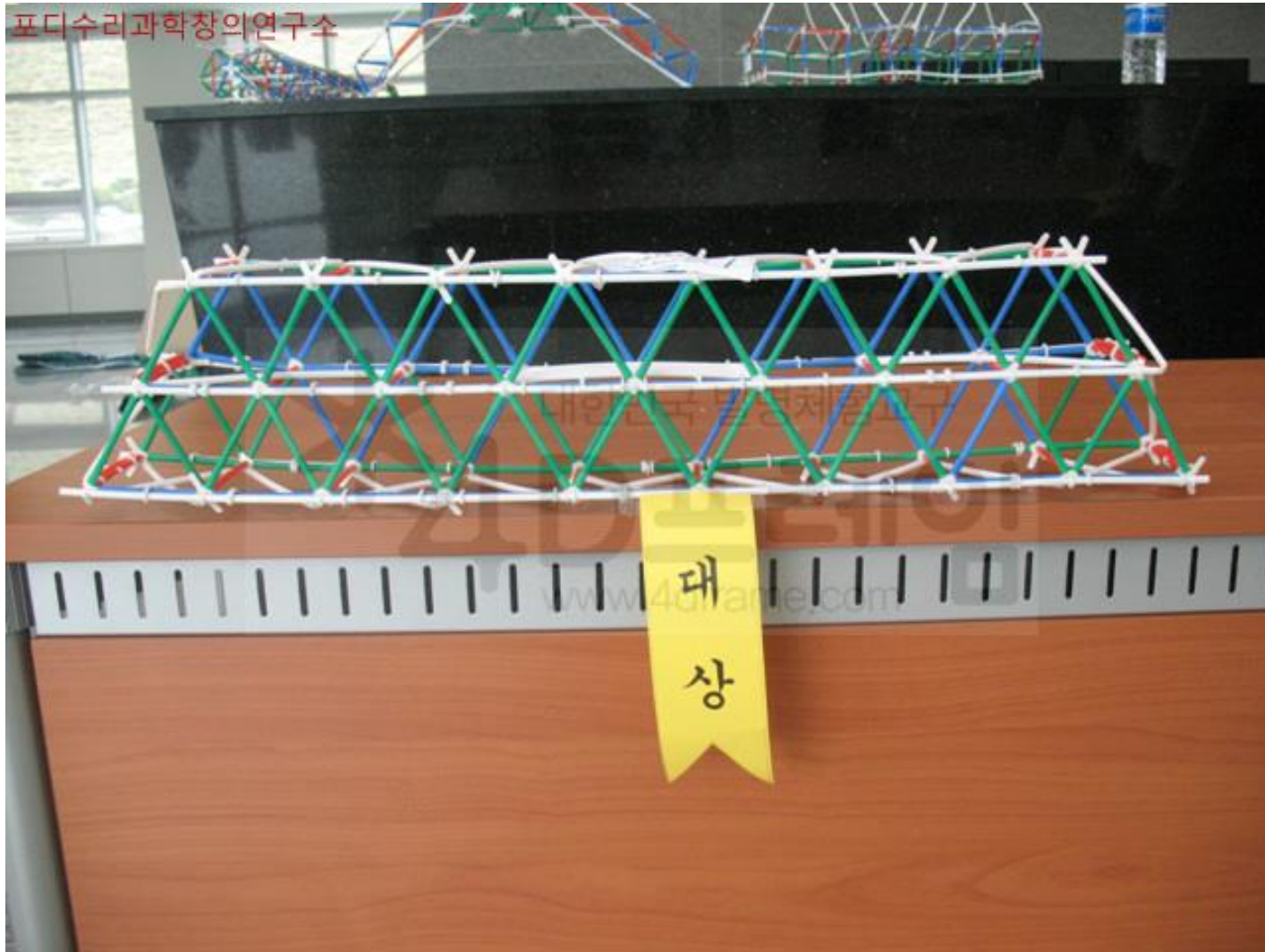




Simple examples for 4Dframe bridges



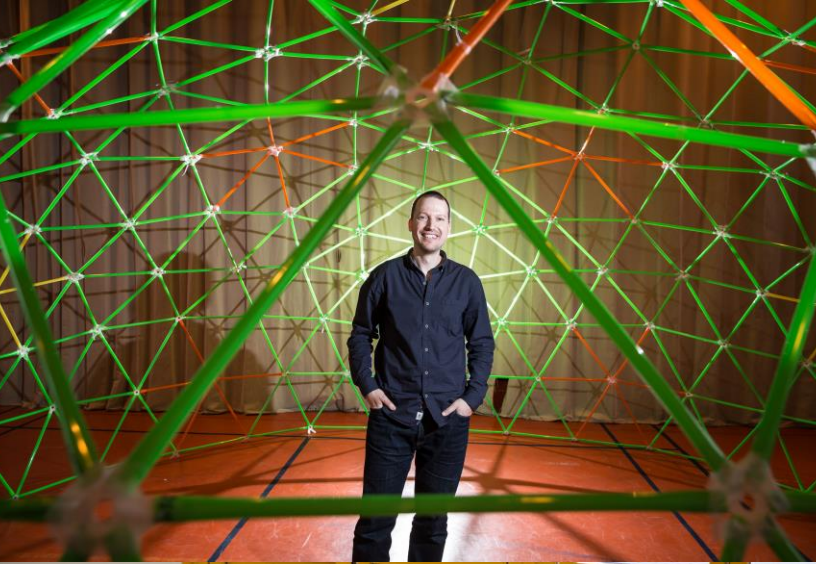




Work in pairs or in small groups! Work as a team of engineers!

You need to solve a given problem within a given amount of time, based on a given amount of resources:

- Set goals
- Make plans
- Make tests
- Record the thinking / design process
- Do more with less



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Interested in STEAM? Looking for support in connecting mathematics & art in education? Do you have a good idea?

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