Building Paper Bridges

Place two piles of books/boxes some distance apart on a stable table. Ask students to make a simple paper bridge using one A4 sheet of paper. They **cannot** use cellotape, sticking tape, glue, pins or any other sticking material. Get students to "test" the strength of the bridge by adding a fixed unit of mass, for example, 1 rupee coins. There are a number of variations which can be imposed to make the activity more difficult. In this activity, students will design, test and re-design their own paper bridges.

समांतर उंचीचे दोन पुस्तकांचे गठ्ठे किंवा समांतर मापाचे दोन बॉक्स एका स्थिर टेबलावर काही अंतरावर ठेवा. एक साधा ए४ शीट पेपर वापरून विद्यार्थ्यांना कागदाचा पूल तयार करण्यास सांगा. ते सेलो टेप, चिकटपट्टी, गोंद, पिन, किंवा इतर साहित्याचा **वापर करू शकत नाहीत.** विद्यार्थ्यांनी वेगवेगळे पूल बनवावे, त्याची चाचणी करावी व पुलांमध्ये बदल आणावे. विद्यार्थ्यांना पुलाची मजबूतीची चाचणी करण्यासाठी एक निश्चित वस्तुमान एकक ठेवा, जसे की;१ रुपयाचे नाणे.

Above image is only representative of the design task. Image Source: Pixabay (Public Domain/ Creative Commons CC0)

समानांतर ऊंचाई के पुस्तकों के दो बंडल या समानांतर ऊंचाई के दो बक्से एक स्थिर टेबल पर कुछ दूरी पर रखें। एक साधा ए४ शीट पेपर का उपयोग करके विद्यार्थियों को कागज़ का पुल बनाने के लिए कहें। वे सेलो टेप, चिपकने वाली पट्टी, गोंद, पिन या अन्य सामग्री का उपयोग **नहीं कर** सकते। विद्यार्थी अलग अलग तरह के पुल बनाये, उनका परिक्षण करें और फिर पुल में बदलाव लायें। विद्यार्थियों को पुल की ताकत का परीक्षण करने के लिए एक निश्चित वस्तुमान एकक रखें, जैसे की १ रुपये के सिक्के।

Bridges are commonly seen all over the globe. Be it to cross a water body or to have multiple roads and railways over each other. Bridges are built using different materials, and are often dependent on how much load they have to carry and across what distances. Four commonly seen structures are: beam, arch, truss and suspension types of bridges. Through this activity, the young "bridge engineers" can understand more about shapes and their strength. The teacher along with students can brainstorm on different designs of bridges. Get students to present their plans to the rest of the class. This well known D&T activity is aimed at sparking creative problem solving among students and provides them an opportunity to think, make and test, by giving a flavour of working with hands while using their imagination. Developers of the Engineering is Elementary (EiE) curriculum say that their research suggests that students exposed to such tasks; show greater gains in science learning, and that these tasks promote students' knowledge of engineering content and awareness of the diverse fields of engineering (EiE, 2016).

References

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