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Tallest Tower 最高的塔

Types of Towers

In developed societies, towers have played a significant role for many centuries, serving various functions ranging from watch towers to modern cell towers. In this particular activity, student groups are tasked with designing and constructing towers of three different types: guyed or cable-supported, free-standing or self-standing, and monopole. The objective is to engineer these towers to meet specific requirements, such as maximizing their height and ensuring they can withstand windy conditions without any external support.

Learning Outcomes

The task assigned to the students was to design the tallest possible tower, which is defined as a structure that is taller than it is wide. Initially, this task appeared to be straightforward, but the students soon realized that there are several factors that will impact the outcome. One crucial factor is balance and weight distribution. The students discovered that if the tower was too thick or heavy at the top, it would not be able to stand. Additionally, they learned the importance of critical thinking and the ability to adapt their plans and designs through continuous reflection. These lessons are integral to the engineering design process followed by the students. Furthermore, patience and collaboration played a significant role in achieving heights of up to 2.5m for some towers. While not everyone reached these heights, everyone felt a sense of pride in their accomplishments throughout the process of building the tallest tower.

高塔類型

在已開發國家裡，塔樓在幾個世紀以來一直發揮著重要作用，從瞭望塔到現代手機訊號塔等各種功能。在這項特別的活動中，學生的分組任務是設計和建造三種不同類型的塔：拉線或電纜支撐塔、獨立或自立塔和單極塔。目標是設計這些塔以滿足特定要求，例如：越高越好，並確保它們能夠在沒有任何外部支撐的情況下承受強風條件。

學習成果

指派給學生的任務是設計盡可能高的塔，塔的定義是高度大於寬度的結構。起初，這項任務對學生來說似乎很簡單，但很快就意識到有幾個因素會影響結果。一個關鍵因素是平衡和重量分配。學生發現如果塔太厚或頂部太重，它就無法站立。除此之外，他們還瞭解批判性思考的重要性，以及透過不斷反思來調整計畫和設計的能力。這些課程是學生所遵循的工程設計過程中不可或缺的一部分。此外，耐心和相互合作對於一些塔樓達到 2.5 公尺的高度發揮了重要作用。雖然不是每個人都達到了這些高度，但每個人在建造最高塔的過程中都對自己的成就感到自豪。

1

ASK + IMAGINE
提問 + 創思

2

We did lots of collaborating to come up with a good plan.
我們進行了多次合作並提出一個好的計劃。



3

PLAN
計畫

Groups used blocks and strawbees to practice different scenarios.
小組使用積木和巧拼吸管來練習不同的場景。



4

CREATE
創造

It was all hands on deck to get the towers as tall as possible.
小組總動員讓塔越高越好。



5

IMPROVE
改進

We constantly made adjustments as the towers got taller.
隨著塔越來越高，我們不斷地進行調整。

