LESSON PLAN

Season 2/Episode 14

Toothpick Towers

(Investigating 'Building')

Let's Find Out features Captain Zoom and her crew of scientists with exciting experiments, curious kids and a trip to a faraway place.
Produced with support from Science Foundation Ireland.

Class Level:	First/Second Class
Strand:	Energy and Forces
Strand Unit:	Forces
Content Objective:	• Investigate how forces act on objects

Class Level:	Third/Fourth Class
Strand:	Environmental Awareness and Care
Strand Unit:	Science and the Environment
Content Objective:	• Begin to explore the application of science and technology- in designing and making activities

Assessment Method(s):

- Teacher observation
- Teacher designed tasks and tests
- Work samples
- Self-assessment
- Conferencing
- Portfolio assessment
- Concept mapping
- Questioning

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Lesson: Toothpick Towers

Lesson Introduction

- The teacher will begin the lesson using WALT and WILF.
- Question the children on their prior knowledge of building and forces.
- Click HERE for a whole class demonstration on the experiment. (https://www.youtube.com/watch?v=guiPKY9PINg&list=PLer4jkNChuybHYhU-YSs5LW-TuLKz_SQk&index=14)

Lesson Development

- Roll the blu tac into small balls. You will make two towers and need at least 12 blu tack balls per tower.
- First build a tower with square shapes; three sets of squares using four toothpicks as the sides and four blu tac balls as the corners. Stick each end of each toothpick into a blu tac ball to keep the square secure.
- To build the square tower, place four toothpicks into each corner ball of blu tac, facing upwards and then fit a second square on top.
- Repeat to add one more layer to your tower. Is it secure? Do you want to try adding another layer?
- Next make another tower, as you did this one, except this time, place one of the longer sticks across the diagonal of each square side of the tower. This tower has triangular shapes.
- Build the triangular shape tower as tall as the square shape tower, which one do you think is more stable?

Lesson Conclusion

- Talk and Discussion
- Discuss children's observations

Lesson: Toothpick Towers

Resources	Methodologies	Linkage/Integration
Toothpicks Longer skewers or toothpicks (1.4 times longer than the cocktail sticks) Blu tac	Talk and Discussion Active Learning Skills through Content Use of the Local Environment Problem Solving	Add in at teacher's discretion

Inclusion and Diversity/Differentiation (Differentiate at teacher's discretion)

Content:
Product:
Activities:
Environment:
Resources:
Teaching Strategies:

Scientific Explanation:

You may have noticed that the triangular tower was sturdier than the square one. One reason for this is that triangular shapes can spread the load they carry more evenly than a square shape and this means there are less weak points into the tower than may tilt or fall under their load. Triangular shapes are often used in buildings, can you think of any triangular shapes you can spot in your house?

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