GAME/ACTIVITY | LOW COST

ENGINEERING CHALLENGE: BUILDING FOR HURRICANES

AGES

Tweens

PROGRAM DESCRIPTION

Children are given simple materials and design requirements, then build a tower as tall as possible that will hold up a tennis ball while resisting the force of wind from a fan. You can modify the materials and requirements based on whatever you have on hand. For example, omit the tennis ball and just see who can build the highest tower out of index cards and tape. Then see which one best withstand the forces of a "hurricane." For an extra challenge, a spray bottle can be used to simulate rain. Consider running a background video on hurricanes or weather while the children build their towers. This program is based on the activity developed by NASA and Global Precipitation Measurement. See links under Resources to access Printables. Suggested runtime: 30–60 minutes.

MATERIALS AND PREPARATION

Materials:

- Index cards, paper straws, pipe cleaners, craft sticks, tape, string, newspaper, tennis ball, or whatever miscellaneous supplies you have on hand.
- A work table for each group.
- A table with a tablecloth, fan or blow dryer, and a spray bottle for testing.
- A shake table (see DIY links under Resources) increases the fun (optional).
- A laptop and projector if you want to show a background video.

Before the program, set up tables with your chosen materials for each team.

ADAPTATION:

This could also be a multigenerational activity in which families work together to meet the challenge.

ADAPTATION:

For an outside presenter, consider reaching out to a local engineer to present beforehand and test the structures, or reach out to the local weather station to see if one of the meteorologists can present on hurricanes.

UNIQUE SPACE AND/OR PERSONNEL NEEDS

Solo-librarian friendly.

RESOURCES

Web

"Building for Hurricanes" from *NASA*: https://go.nasa.gov/3vp6bBc

Weather activities from *NASA*: https://go.nasa.gov/2SwoBBE

"Build an Earthquake Shake Table" from *QuadSquad*: https://bit.ly/3bUX7w3

Non-fiction

Hurricanes (Force of Nature) (2021) by Monika Davies