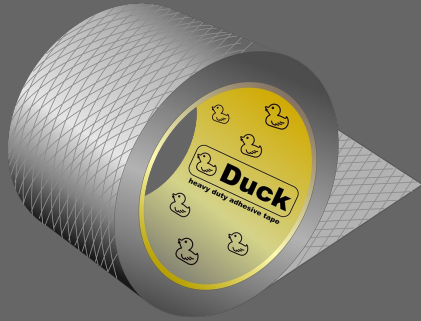


Duct Tape Challenge



Link to slides: bit.ly/dtc1920

Science Olympiad 19-20

Division A

Sara Roberson

sroberson1@wcpss.net

The Event

Teams of up to 2 students will be given a set of materials, which includes duct tape, and a task. They will have 35 minutes to complete the task. At the end of the time, structures will be tested to determine the winner, based on scoring guidelines determined by the event leader.

The Materials

Duct tape (Shurtape brand)

Other materials MAY include: styrofoam bowls, straws, paper clips, cups, string, paper, popsicle sticks... and other items!

All teams receive the exact same materials.

Only these materials may be used.

Teams may also bring something to write with, a ruler, scissors, and a stopwatch.

The Task

Students will NOT know the task until the event begins. Instructions for the task will be provided. Some possibilities:

Slowest parachute

Longest bridge to support a weight without sagging

Lightest boat that holds the most weight without sinking

Tallest sail that stands up to a fan

Longest/highest/slowest ramp to deliver a ball to a destination

Plane that flies the farthest/longest... and other possibilities!

Typically students are the ones who do the testing of their structure, under the guidance of the event leaders.

More about the task

Unless specifically stated in the task instructions, structures must be freestanding and may not be attached to a tabletop, floor, ceiling, or other support.

Students may also not support their structure as it is being tested.

Students Should Remember:

Read all instructions carefully before beginning. Ask the event leader if you don't understand the task or something in the instructions.

Check materials before you begin and let event leader know if any are missing/damaged.

Show good sportsmanship! Stay in YOUR space until the competition AND testing period have ended.

Tips for teams

PRACTICE all manner of tasks (search Pinterest for ideas) with all manner of materials (build a boat/table/tower/bridge with just duct tape, duct tape and a few popsicle sticks, duct tape and a styrofoam cup, etc...).

PLAN before beginning- you don't want to waste materials! Remember the Engineering Design Process, and practice it with your students: ASK, IMAGINE, PLAN, CREATE, TEST/IMPROVE

Refer back to instructions regularly

Practice building on floors, carpet, tables, counters, etc.

Duct Tape Tricks and Tips

Students should figure out if it is easier to cut or tear tape

Roll duct tape

Roll paper columns

Make waterproof seams by layering tape and smoothing out air bubbles

Maximize paper and other materials

Use ALL materials- including the cardboard tube of the duct tape roll, straw wrappers, etc. (unless instructions say not to)

More tips and tricks

Watch how the Mythbusters work with duct tape (there are 3 duct tape specials

Tips video [here](#)

Tearing tape video [here](#)

Making sheets of duct tape video [here](#)

Shaping duct tape video [here](#)

Making 3D shapes video [here](#) (for fun- probably not enough time for this!)

Questions?

Find a sticky note- please include your email address!

Email me! sroberson1@wcpss.net

Answers to common questions will be posted on the resources page for DTC. Check often for clarifications!

Feel free to access these slides once Kim posts them on the resources page, but please don't ask me for editing access- you can save a copy to your drive to edit it!

Today's Challenge

1 roll of duct tape,
3 pieces of paper



20 minutes to build!