NEWSPAPER FORT STEM CHALLENGE

Is it possible to make a fort out of newspapers big enough to hold a person? Test your students' creativity and find out. Raid the newspaper recycling bin, grab some masking tape and you're ready to go!

Kansas College and Career Ready Standards for Science

- 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
- MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
- MS-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

Materials needed:

- Newspapers (LOTS of them) – a few sheets of newspaper can be rolled up to make a 'building stick". These will be the components from which the fort will be constructed.
- Masking tape – one roll per team of students
- Design planning page – one per student
- Pencil – one per student

Advanced preparation:

Gather materials
Divide students into teams of 4-5
Copy planning sheets for each student
Create space for the each team to build

Program Connection Information

Please use an external microphone (conference style) rather than the integrated one in the computer for the audio for your class and locate it centrally in the room. It can be difficult for the Greenbush teacher to hear the students using the computer microphone and therefore it reduces the interactive nature of the lesson. It is fine to use the computer webcam for your video source though.

All classes will take place using Zoom desktop video. If your building is already set up to use a desktop video application with a computer, simply open a browser and enter https://zoom.us/j/3662120241 in the URL space. You may need to download Zoom launcher software (free download) if you don't already have it. This needs to be done in advance of the lesson.

If using a Polycom video conferencing unit (or any legacy type video conferencing unit) to connect to a ZOOM conference, make sure the unit is in "encrypted mode" then dial the following IP on the internet: 162.255.37.11 or 162.255.36.11 and once connected, they will ask for a MEETING ID: enter 3662120241 (for Sharon at Science Center).

It's always a good idea to touch base with your district technology facilitator prior to your program to make sure all systems/equipment are in place and operational and no firewalls that might prevent you from connecting to Zoom.

Classes take place at the following times:

9:00-9:45
10:00-10:45
12:15- 1:00
1:15-2:00
2:15-3:00

If you log in during one of those times, you may connect during another class' lesson. If you do, please check your connection to make sure things are working properly and then leave the meeting until your scheduled time by selecting "End Meeting" in the lower right corner of your Zoom screen and click on "End Meeting". You will need to rejoin the meeting at your scheduled time. This prevents your site from interfering with the lesson currently in progress. After your lesson is finished, please leave the meeting.

If you have questions, please call Sharon Bertolio at Greenbush (620-724-6281).

Planning Sheet – Building a Fort

Name: _____

Brainstorming Ideas – List the ideas you have use to make your fort:

1. _____ 3. _____

2. _____ 4. _____

DIAGRAM: Draw and label a plan of your fort.
Your drawing should look like those of your teammates.

What changes did you have to make to your plan as you were building? Draw or write about them here: