



# STEM Fair 2022

The 2022 STEM Fair will be held on Friday May 20, 2022.

STEM stands for Science, Technology, Engineering and Mathematics. The STEM Fair is our annual science event where kids can participate in our STEM Challenges as well as hands-on activities. The planned hands-on activities will be announced soon. The purpose of the fair is to cultivate a curiosity and love of science and all the other disciplines that are part of STEM. This year we will be doing the popsicle bridge challenge (some may remember this from 2017, 2018 and 2019), because it was so well received, and we want to give more students a chance to participate. Also returning this year, we will have a challenge to build a fast sled that will go down a “mountain”. Rules are posted below.

## Basics for Participating in the STEM Fair

All HES students (K-4) are encouraged to participate in the STEM Fair. Registration will occur through community pass. At that time, you will have the opportunity to register to take part in popsicle bridge STEM challenge, take part in the speed sled challenge or both. A registration needs to be completed for each student participating.

For families that only want to visit the fair and take part in hands-on activities that do not require pre-registration, no registration is needed. Just arrive at the school beginning at 6:00pm.

In the week before the science fair, the students registered to participate in the STEM challenges will receive a packet with important information. The letter will indicate important times and locations.

## Registration and Volunteers

**Registration:** Registration to participate in one of the STEM challenges is open now via Community Pass. Registration will close May 13, 2022.

**Volunteers:** Please consider volunteering to help out during a short shift. Sign up will be done via Konstella. Volunteer sign up will begin early May and a Konstella notice will be sent out announcing when it is available and this website will be updated with the link.



## STEM Fair Challenge:

### Popsicle Stick Bridge (individual, group or family)

Can you build the strongest bridge using only popsicle sticks? In this fun challenge, students bring in a bridge built at home following the rules below. How much weight can these bridges hold? Sign up and find out.

#### Goal:

To build the strongest possible bridge using wooden Popsicle sticks.

#### Materials:

- No more than 150 Popsicle sticks (Available at craft stores (4 1/2 x 3/8 x 1/12 in.)
- Elmer's white school glue
- Popsicle sticks can be colored with markers, but NO paint or stain.

#### Dimensions/ Specifications:

- The bridge must span a 14" gap – this means that it should be at least 16" long at the base.
- The bridge must have a driving deck to allow for a matchbox car to cross.
- The bridges can have a truss system on top or below the driving deck.
- Total height at tallest point should be no higher than 6"
- Total width of bridge at widest point should be no more than 6"
- Glue on your bridge must be fully dried

#### Contest Rules:

Participants must register in advance using Community Pass. No walk-ins will be allowed.

Prior to check in- your child should clearly label their bridge (using a permanent marker) with their first and last name. Upon checking in, the bridge will be examined for compliance with the rules (correct size of popsicle sticks, correct type of glue, etc.). Please double check the dimensions of your popsicle sticks- for the safety of our volunteers, we may not be able to break your bridge if you do not follow the specifications listed above.

During judging, test loads will be applied to the bridge deck using our HES Bridge Breaker, until the bridge breaks or buckles by 2". The weight that breaks the bridge is the breaking load. All bridges will be destroyed during testing!

This challenge can be done by an individual student, group of students or family.



# STEM Fair Challenge:

## Speed Sled (individual challenge only)

Can you build the fastest sled to go down Mount Star (otherwise known as an angled table or board)? In this fun challenge, students bring in a sled built at home following the rules below. How fast can these sleds go? How would they do in a competition with other sleds? Sign up and find out.

### Goal:

To build a fast sled using the materials below. You will have three timed changes to have the sled race down the mountain. An additional station will be set up if participants who are already done want to race friends and classmates.

### Materials:

You are free to use any materials. Exceptions would be any prebuilt parts. Some example materials are: index cards, card stock, thin cardboard, cereal boxes, plain paper, tape weights, bottle caps, straw, string, play-doh, craft sticks, marbles, glue, paper clips, binder clips, fabric, wax paper, cotton balls, aluminum foil, pencils, paper towel rolls, etc. No limits as long as you build the sled.

### Dimensions/ Specifications:

The overall sled cannot be heavier than 4 ounces.

### Contest Rules:

Participants must register in advance using Community Pass. No walk-ins will be allowed.

Prior to check in- your child should clearly label their sled (using a permanent marker) with their first and last name. This will be important to facilitate sled check-in. Upon checking in, the sled will be examined for compliance with the weight and no pre-built parts requirement.

Each sled will be tested and timed three times. While we will try to give all sleds back at the end of the challenge, it is possible that the sled could become damaged during the testing. Racing sleds at the additional track is only allowed after the participant has finished the timed challenge.