

Lake Crystal Wellcome Memorial

Engineering Journal

Knight Stars



The STEAM Life!

Knight Stars

Lalhe Crystal Wellcome Memorial
Robotics team

Meet The Members

Megan ▽
+ Artist
+ Technician
+ Mechanic
+ Captain

-o Team leader -

Age: 16

Favorite color: Blue

Nerd level: 9

Hobbies: Art, biking, woodwork, snowmobiling



Lo ▽

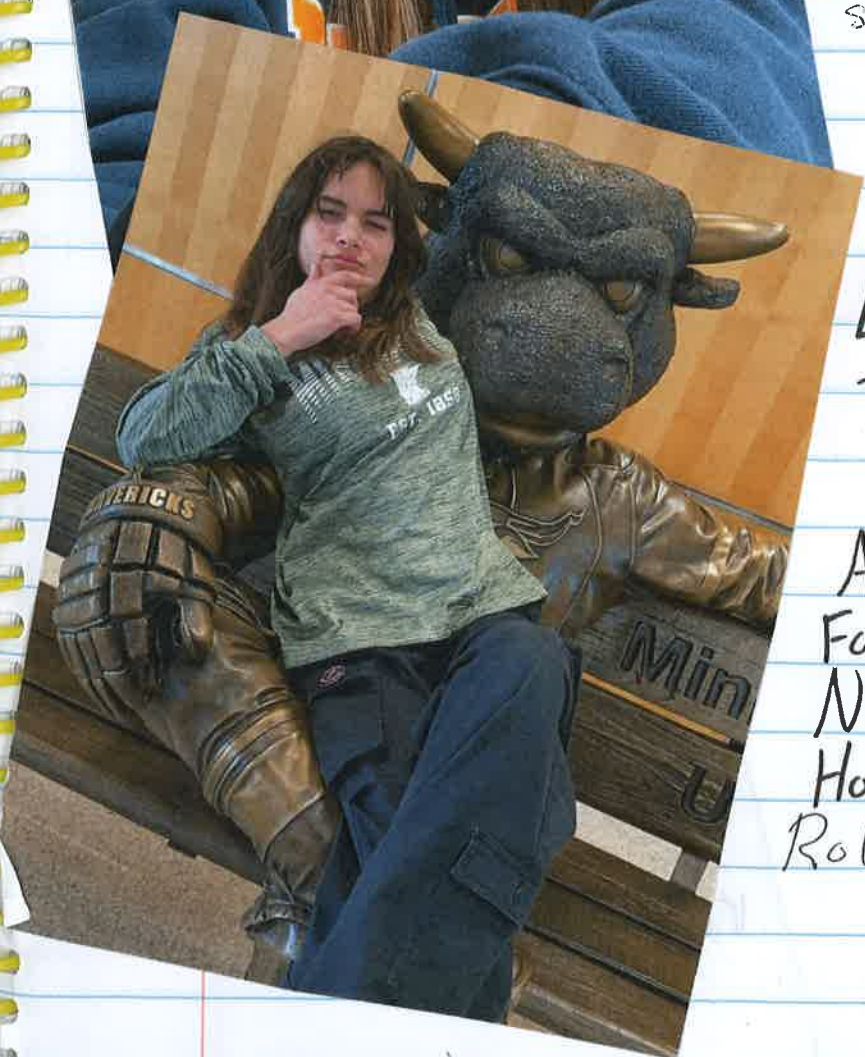
-o Artist/Storyteller -

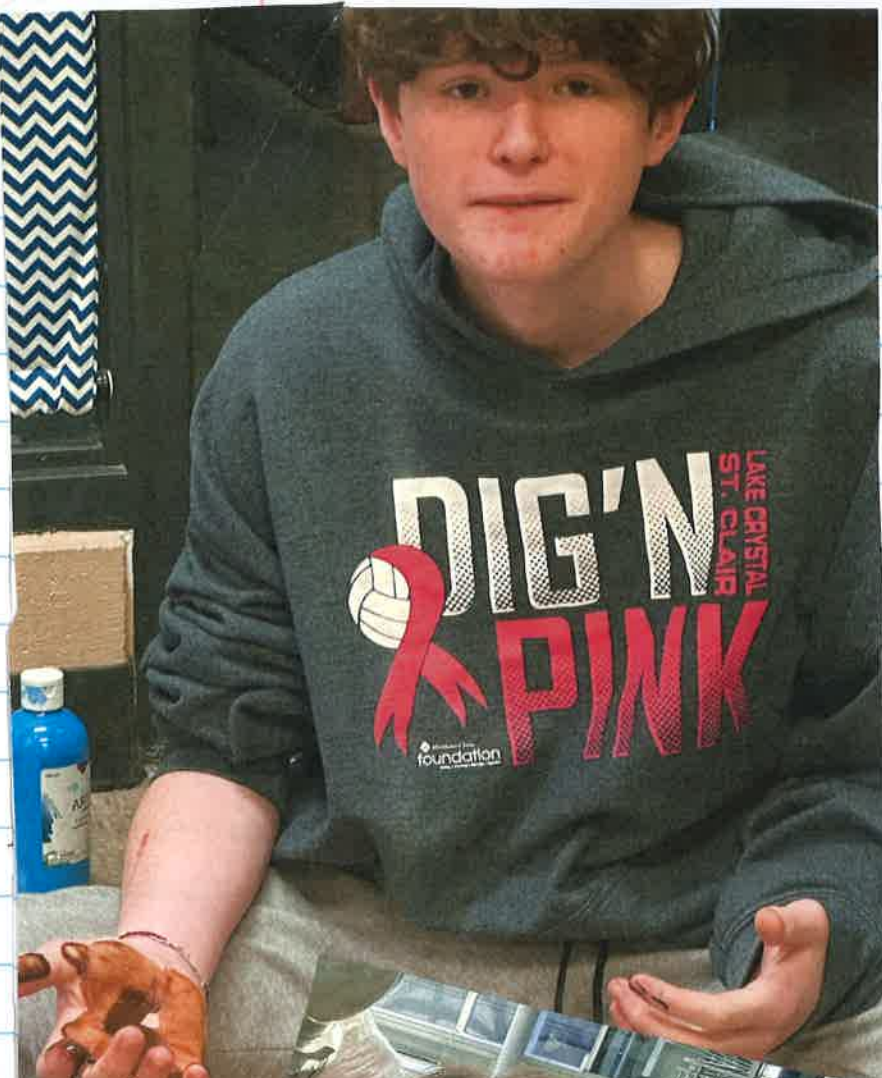
Age: ~~13~~ 14

Favorite color: Black

Nerd level: 4

Hobbies: Drawing, Robotics, and friendships





Danie

o Mechanic &
o + Artist

Age: 15

Favorite Color: Green

Nerd level: 6

Hobbies: Biking,
chess, widdling,
outdoors



Vivian

Technician
* Artist
* Journalist

Age: 15

Favorite Color: Red

Nerd level: 8.0

Hobbies: Chess,
reading, coding



* Fun Fact:
horrible with

⚡ Parker ⚡
 ⚡ • Mechanic
 + Artist + Technician

Van ⚡
 • Coach
 + Science/Math teacher

Age: 16
 Favorite Color: Red
 Nerd level: 7.642
 Hobbies: 3d Printing,
 farming.

Age: old
 Favorite Color: 🌻
 Nerd level: 2:π
 Hobbies: Biking



Emmett 

◦ Emotional Support


Age: 13

Favorite Color: Purple

Nerd level: 2

Hobbies: Games



Sam 

◦ Artist

Age: 17

Favorite Color: Pink

Nerd level: 7.5

Hobbies: Learning

SM
Sketch



①

Destiny

• Storyteller + Artist

Age: 16

Favorite Color: Green

Nerd level: 5

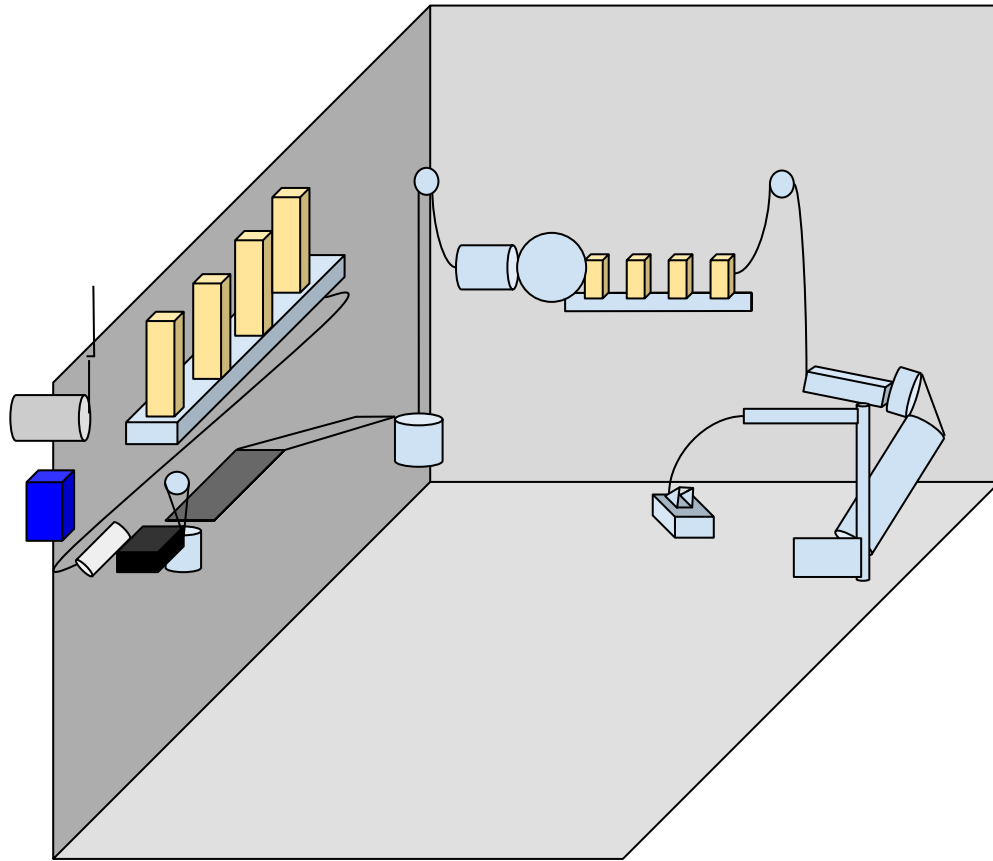
Hobbies: Fashion, Art, Speech

10	10	10	10
20	20	20	20
30	30	30	30
40	40	40	40
50	50	50	50

Faded handwritten notes or sketches on the right side of the page.

Materials Used

- Science Fair board from 9th graders - Free
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- Wood - Donated
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- Cardboard tube - Donated
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- Hinges - Donated
- General metal - Donated
- Screws -
- Baking Soda -
- Paint - Donated
- Fairy lights -
- Motor/Wires -
- Pallet - Donated
- Light Switch -
- Balloons -
- Hydraulic (tube + Syringe) -
- Vinegar -
- String -
- Pulley
- Hot wheels
- Duck tape -
- Golf balls



Our machine starts with an electric motor that turns an arm into a set of wood blocks. The wood blocks will knock each other over, and the last block will fall onto a syringe. This syringe is connected to another syringe with a tube that is filled with water. Pressing the plunger of the first syringe will cause the plunger of the other syringe to extend. The extending plunger will push a car off a platform. The car will then fall into a cup that is connected to a ramp through a pulley. The dropping cup will raise the ramp and cause another car to travel down the ramp.

This car will collide with a ball and the ball will travel down another ramp and the ball will fall into a cup. This cup is connected to a bottle through another pulley. The bottle will be tilted, and it will pour the vinegar that is in it into a balloon that contains baking soda. The vinegar and baking soda will react and release carbon dioxide gas. The gas will inflate the balloon and knock over another set of wood blocks. The last wood block will fall off the platform. A ramp is connected to the last wood block through a pulley. When the block falls, the ramp will raise and a ball will be sent down the ramp. The ball will travel down the ramp through a tube into a crane. The crane will turn and raise a flag.

List of steps:

1. Electric motor turns lever arm (electrical step)
2. Wooden blocks knock each other over
3. Syringe is pressed causing other syringe to extend through hydraulic reaction (hydraulic step)
4. Car is pushed off platform
5. Car falls into cup to raise ramp
6. Car travels down ramp and collides with ball
7. Ball travels down ramp and falls into cup
8. Bottle is raised and vinegar is released into balloon that contains baking soda
9. Vinegar and baking soda react to inflate balloon (chemical step)
10. Balloon starts the reaction of wood blocks falling into each other.
11. Wood falls off platform raising ramp
12. Ball travels down ramp into tube
13. Ball collides with crane mechanism
14. Crane mechanism turns
15. Tractor pulled by crane mechanism

Works Cited

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