How Ya Gonna Keep 'em Down on the Farm After They've Experienced STEM?

(There’s a lot of STEM on the farm too!)

Why are we here?

Discuss what encourages students in STEM

Have some fun (and challenges)

Talk about resources and what’s important

A little background first...

http://engineerintheclass.org/

ENCOURAGING CENTRAL TEXAS SCHOOL CHILDREN TO PURSUE TECHNOLOGY CAREERS

A short video...

My thanks to Mary Carnes

What's important in afterschool STEM

Hands-on fun 
Related to real life 
Challenging but doable 
Across all elements of STEM 
Something they can do or take at home 

Connected with the school curriculum?

Two quick demos...

DNA extraction from strawberries

One source:
http://genetics.thetech.org/online-exhibits/do-it-yourself-strawberry-dna

PVA slime

One source:
http://www.nuffieldfoundation.org/practical-chemistry/pva-polymer-slime

Photo by Karen Farrell

Now it’s your turn!

Puff-mobile

1. Make a car using only the materials on the list. Here's the catch: to make your car move, you can only blow on it!

2. Test it out! How far does your car go when you blow once? How many puffs does it take to make the car travel 6 feet ?

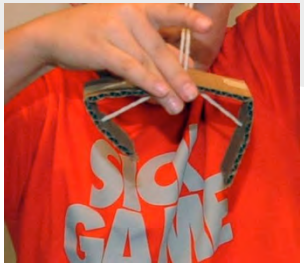
The List
3 nonbendable, plastic drinking straws
4 Lifesavers™
1 piece of paper
2 paper clips
tape
scissors

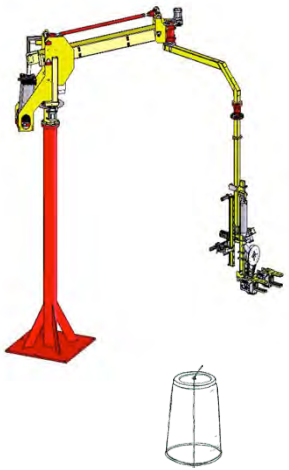
Source: http://www.pbslearningmedia.org/resource/phy03.sci.phys.mfe.zpuffm/designing-a-puff-mobile/

Build your own robot arm

Design requirements

1. The arm must pick up a plastic cup from a distance of 45cm
   - Lift the cup to a height of at least 15cm
   - Bring the cup back to rest and release it
2. Lift and release the cup when it is upside down





Source: http://teacherstryscience.org/lp/build-your-own-robot-arm

My favorite resources

TryScience and Teachers TryScience
http://www.tryscience.org/ and http://teacherstryscience.org/

PBS Learning Media
http://www.pbslearningmedia.org/

Sparticl
http://www.sparticl.org/

Howtosmile.org

CPALMS
http://www.cpalms.org/

and there are lots of others.

The 5Rs of Afterschool STEM

Make it **R**eal

Make it **R**elevant

Point to **R**ole models

Relate STEM to what interests them

Use the many **R**esources available to you

Busy hands

Thank you!

More videos

Strawberry DNA

You Are What You Drink

Puff-Mobile

How Cold Is Cold

My thanks to Mary Carnes

Float Your Boat