

BUT THERE'S NO TIME!

Quick lesson plan modifications to tie S.T.E.A.M. to elementary standards



Bay Meadows Elementary
STEAM Career Academy Magnet

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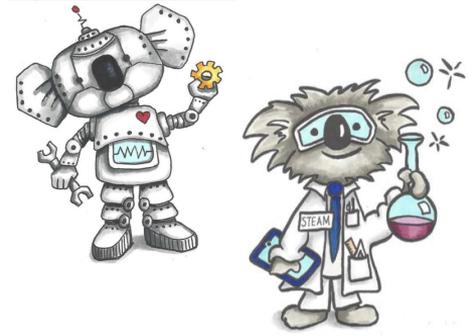
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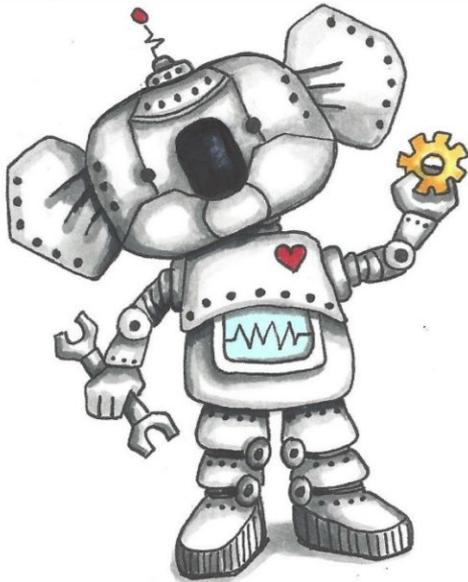


ABOUT BAY MEADOWS

- Opened in 1990; renovated and rezoned in 2005
- 2010–2018: Declining attendance and scores
- 2018: Magnet application process
 - Spring 2018: Attended FEEC – contacts, ideas, resources
- 2019: Started the Bay Meadows STEAM Career Academy magnet program
 - Increased attendance
 - 2016 = 604
 - 2021–22 = 674
 - Improved scores
 - 2019 5th Science PMA = 55% proficient
 - 2022 5th Science PMA = 74% proficient



MAGNET VIDEO



Magnet
Video



REALITY CHECK

How do we incorporate STEAM while still meeting and assessing standards?

- Project-based learning
 - Macro projects: Multi-day or multi-week projects including Project Lead the Way (PLTW) and Engineering is Elementary (EIE) projects
 - Micro projects: activities incorporated into a single lesson
- Creative lesson planning
 - Deconstruct standard; review assessment; how can we incorporate STEAM?
 - Weekly Professional Learning Community (PLC) meetings and team planning meetings
 - Bi-weekly lessons in the STEAM Lab that connect to grade-level standards

LEARNING WITH LEGOS

Working together in a group, choose an activity and complete the challenge.

Then brainstorm what standards you could tie to the activity.

**Design a bed
using only 15
Lego pieces.**

**Design a scene
with at least 3
elements from
a famous story.**

We need to create a park so all our friends have a place to play. Our park has a pond, but we can't get across!
Can you build something to get us across the pond?

**Create a stand
or a case for a
cell phone or
tablet.**



5:00

STATIONS

Let's try out some simple activities that can help your students make standards-based STEAM connections!

You will have 15 minutes to rotate freely through 3 different stations.

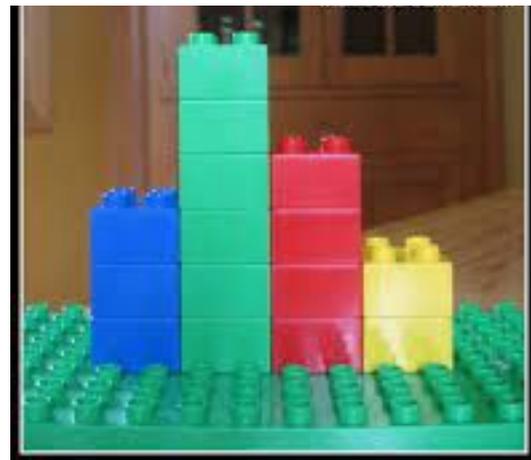
As you complete each station, discuss how you could incorporate or adapt the activity in your classroom.

LEGO BAR GRAPHS

MAFS.2.MD.4.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. (DOK 2)

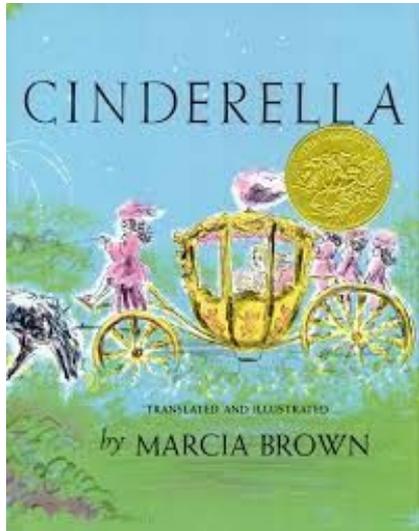
- Draw a picture graph to represent a data set with up to four categories
- Draw a bar graph to represent a data set with up to four categories
- Solve simple put-together, take-apart, and compare problems using information presented in a bar graph

Isaiah counts the flowers in his mother's garden. There are 6 orange flowers, 4 white flowers, 3 blue flowers, and 1 purple flower. **Use Legos to create a bar graph that represents this data.**



MARBLE RUN RETELLING

Create a marble run that you can use to retell the story, *Cinderella*.



SPHERO

There are so many ways you can combine a Sphero with resources you already use in your classroom:

- Math Task Cards
- Vocabulary Review
- Sequencing Events



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PENGUIN ROOKERY

Using simple materials like Play-Doh, wooden blocks, and straws and connectors, you can increase engagement and help students make deeper connections with critical content.



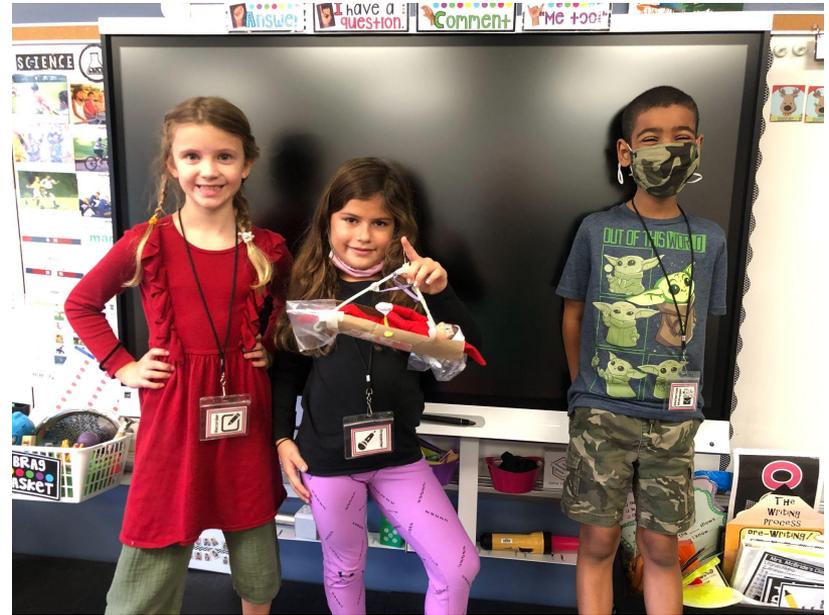
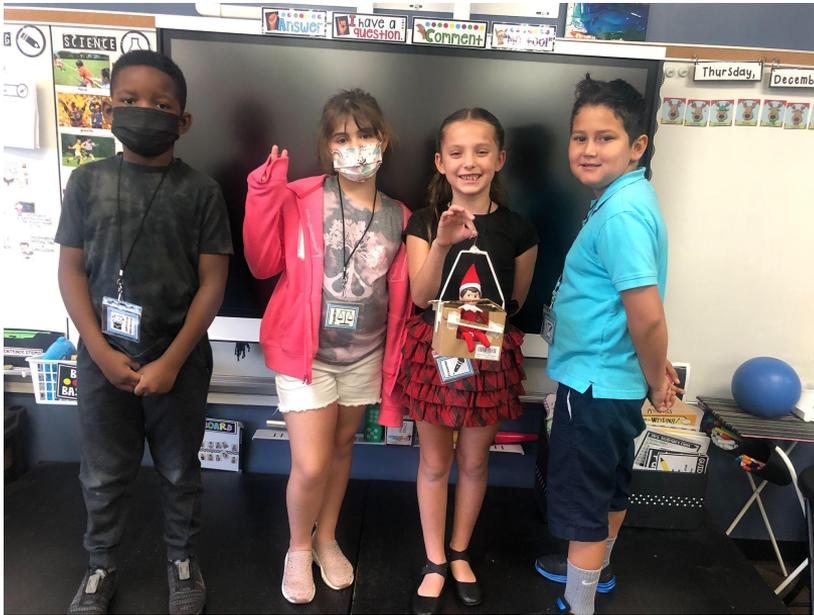
JOHNNY APPLESEED

After reading a biography where they compared and contrasted the real John Chapman to the legend of Johnny Appleseed, students created apple-holding hats. In addition to incorporating reading standards, students also made important connections to several science concepts, including the sun's energy, balance, and gravity.



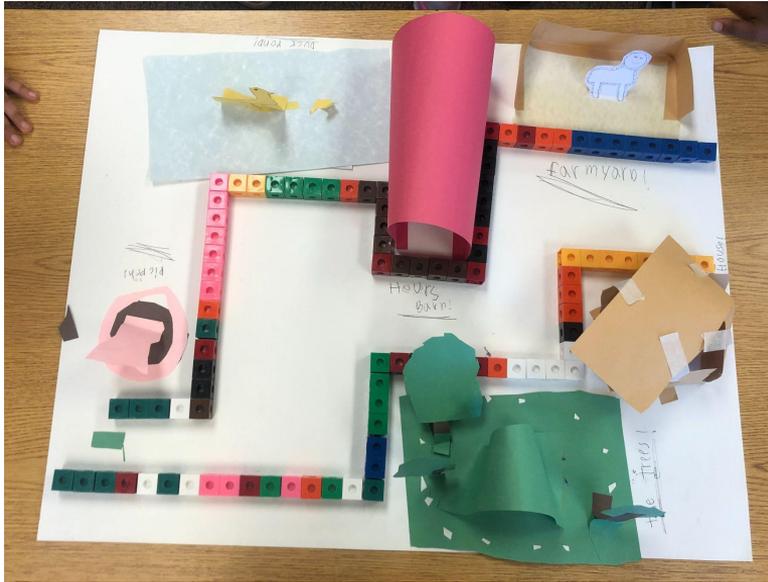
ELF ZIPLINE

Students designed effective and safe zipline cars by applying what they learned in their science unit on force and motion.



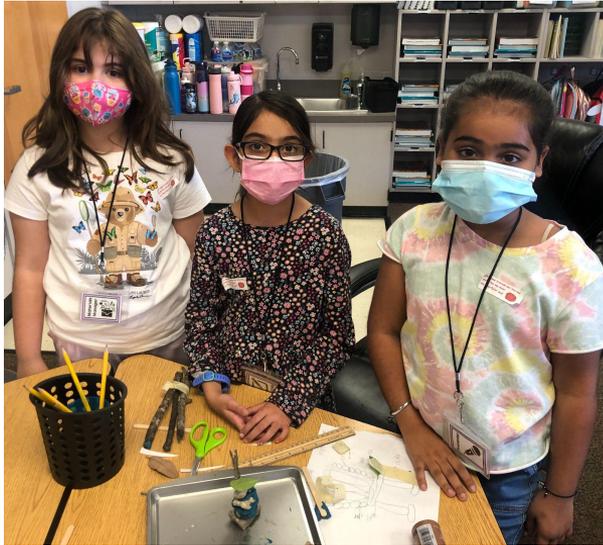
RETELLING AND ENERGY

Students created a maze with 3-D stops that represented the major events in the story. Then, they used “wind energy” to blow a marble through the maze as they retold the story in their own words.



CAVEMAN CONSTRUCTION

After learning about properties of rocks and soils, students used natural resources to design various items, such as a chair and a pencil holder. As they collected their natural resources, they had to take into consideration which properties were best for what they were trying to build.



ACCOUNTABILITY

Engineer _____ Date 10.7.21

Johnny Appleseed

MATERIALS
plates, paper, aluminum foil, wax paper, brown paper bags, rubber bands, popsicle sticks, string, ribbon, straws, pipe cleaners, cups, clothespins, plastic spoons, tape, glue

ASK
How can I design a hat that will protect Johnny from the sun and carry an apple?

IMAGINE
Which type of hat inspires you?
samboro

What will you need to add to the hat to balance the apple?
popsicle sticks

CREATE & TEST

My hat can come on and off my head.
 The apple is visible (can be seen).
 My hat blocks the sun.
 I can walk 4 yards without the apple falling off.

IMPROVE
I am going add a bag because to hold the apple.

THINK Brainstorming

You can choose to make the clothesline out of the following materials. What materials will you use?

Popsicle Sticks
Clothespins
Yarn
Play Doh
Tape
Pipe Cleaner

DESIGN & PLAN

Draw a picture of your idea.

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Date 11/11/21

STEAM LAB REFLECTION: MRS. MCBRIDE'S CLASS

Today I used the Cars, tracks, wooden blocks to practice How force changes the way an object moves.

I collaborated with my group. ★★★★★

I showed perseverance when things got tough. ★★★★★

Name: neva Date: 11/3/2021 Teacher: _____

2 Stars and a Wish

2 Stars:
2 positive comments about what you learned and did well

- I learned...
- I liked how my team....
- It was interesting how....
- We worked well together when we....

1 Wish:
Suggestion for area of improvement

- We can revise our project by....
- We wonder about....
- Our team could improve by....

When we worked I liked how we added extra structural support, we

We worked well together when we were building our core structure.

Our team could improve by making the the space for legos wider.

SHARING

Any questions?

What are some of YOUR ideas?

Did you have any “aha” moments?

What do you still find challenging?



THANK YOU
for attending!

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