



STEAM Family Night at Lagunita

Monterey County Office of Education & RAFT





Welcome!



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MINDSET HACKS

THINK FLEXIBLY

- Share a success / celebration
- OR, share a challenge
- Use the chat

Debrief - Share Strategies Used



FOCUS ON
HUMAN VALUES



SHOW
DON'T TELL



EMBRACE
EXPERIMENTATION



BE MINDFUL
OF PROCESS



BIAS TOWARD
ACTION



RADICAL
COLLABORATION



CRAFT CLARITY

d.MINDSETS



EMBRACE
EXPERIMENTATION

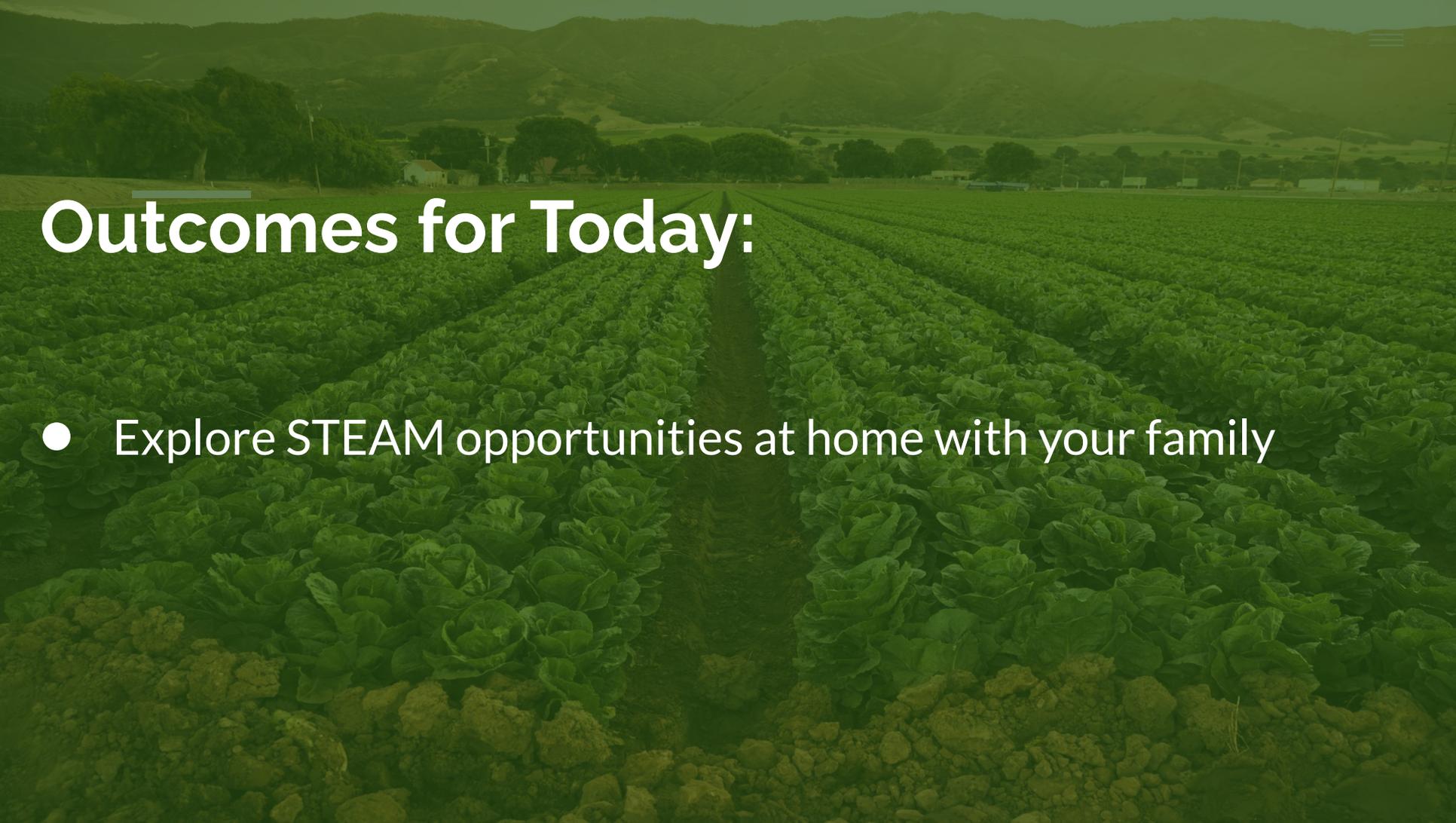


RADICAL
COLLABORATION



Norms

- Be present, open-minded and respectful
- Mute yourself until you want to speak
- Add questions and ideas to the chat



Outcomes for Today:

- Explore STEAM opportunities at home with your family



RAFT Kit - Car on a Roll

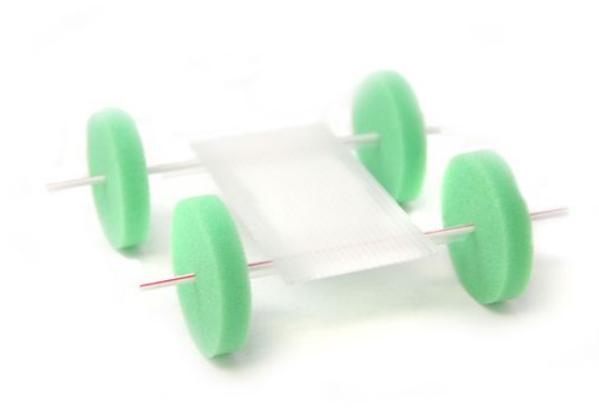
RAFT is an education non-profit organization that serves thousands of educators by developing activity kits, training, and other useful supports.

The RAFT Kit contains:

- Car on a Roll Project Guide
- Materials: Corrugated sheet, regular straws, coffee straws, foam wheels, file label

Science Topics:

- Forces and motion
- Potential and Kinetic Energy
- Investigations, testing variables, simple machines





RAFT Car on a Roll - Let's Go!

Building the Car:

- Review materials list, identify and sort the parts
- Read project guide - 1) How to Build It, 2) To Do and Notice
- Use the car to investigate motion, energy, collisions, and more!

Supports:

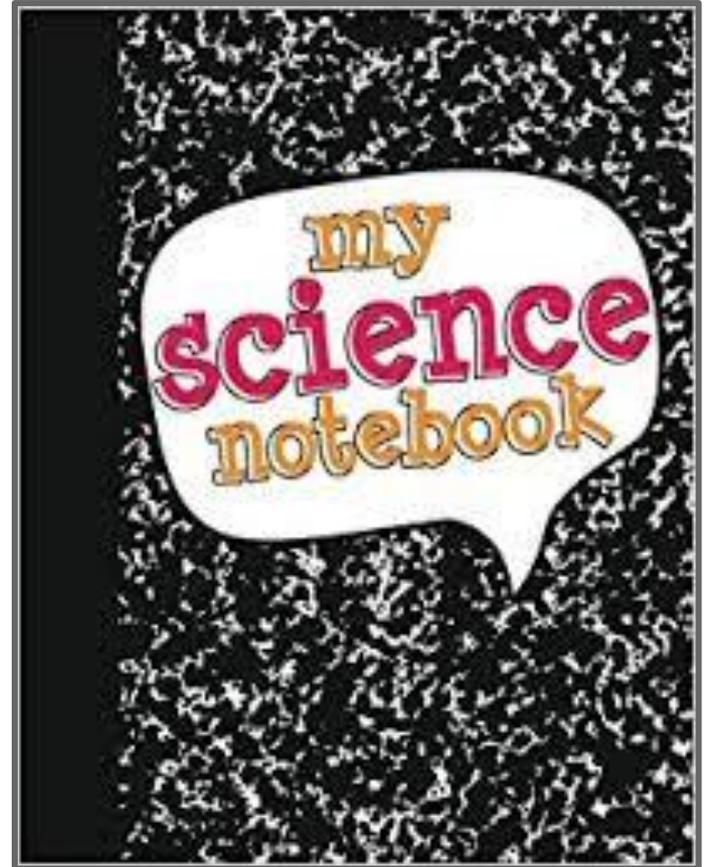
[Car on a Roll Project Guide \(English\)](#) | [Project Guide \(Spanish\)](#) | [Project Guide \(Vietnamese\)](#)

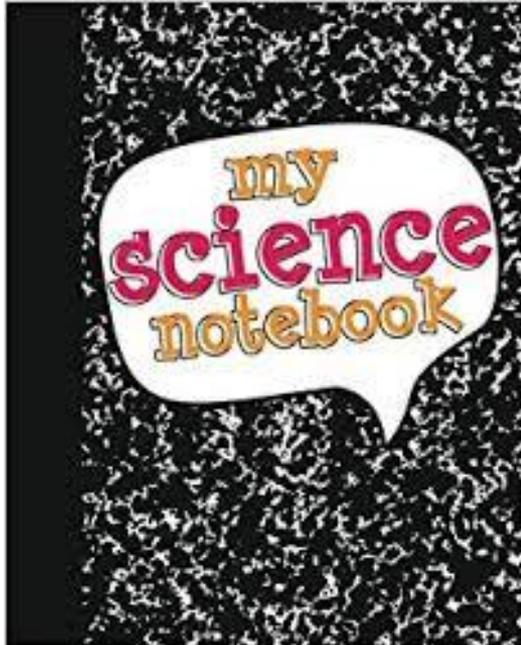
Learn More:

- Challenge students to make the car stop within a set range of distances, roll over an obstacle, or collide with an object

Related RAFT Kits: [Rollback Can](#) | [Roller Racer](#)

Think Like a Scientist





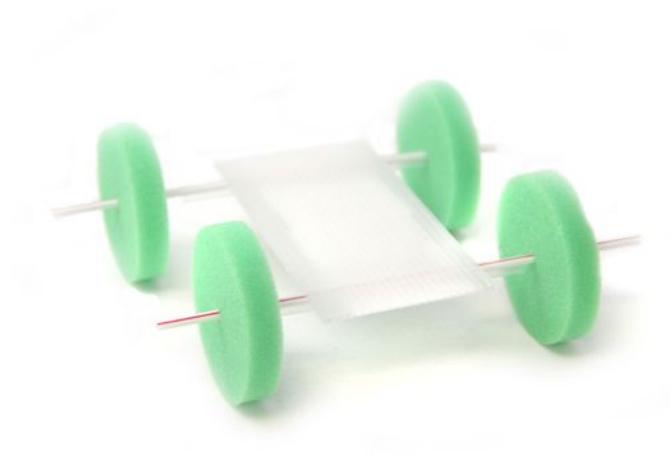
- **“WHAT HAPPENS TO ENERGY WHEN OBJECTS COLLIDE?”**

Engage

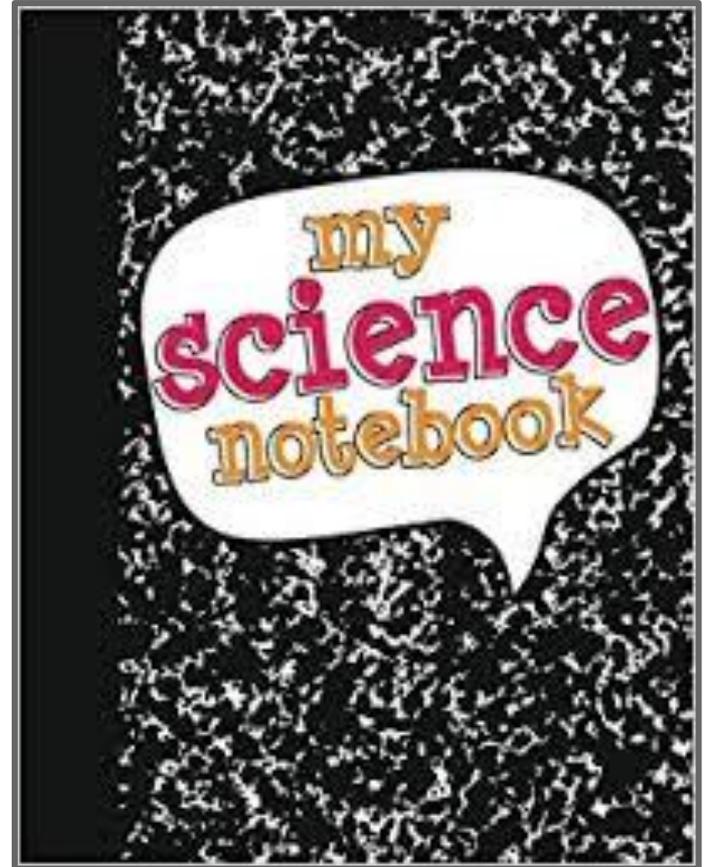




Explore with the Phenomena Cam!



Think Like a Scientist





Explore with Grade Level Breakouts

- K-2
- 3-5
- 6-8

TEAM HAMPSON

we're off to the races



EXPERIMENT

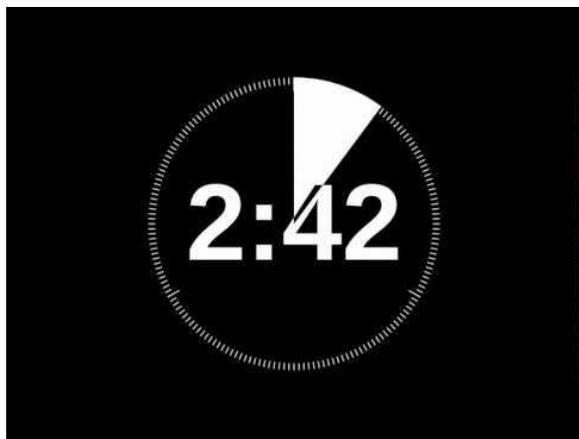
expectations

- Mute
- Raise Hand
- Science Notebook



OBSERVATIONS

data + evidence



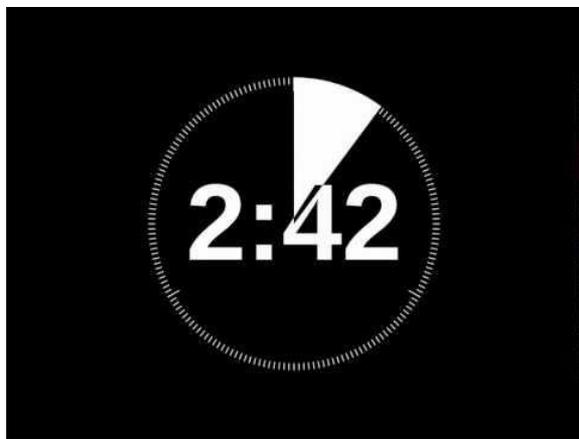
GUIDING questions

What happens when you push or pull on an object?



OBSERVATIONS

data + evidence



GUIDING questions

How can you make an object move faster or in a different direction?



EXTRA MILE challenges

1. Challenge #1 (Farthest)
2. Challenge #2 (Speed)
3. Challenge #3 (Acceleration)
4. Challenge #4 (Point A to Point B - Stopping)
5. Challenge #5 (????)





TEAM MEZA
we're off to the races



THIRD GRADE – FOURTH GRADE – FIFTH GRADE

EXPERIMENT

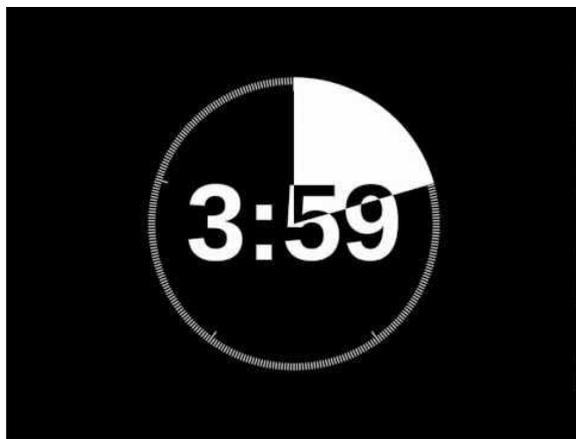
expectations

- Mute
- Raise Hand
- Science Notebook



OBSERVATIONS

data + evidence



GUIDING questions

What happens when you push or pull on an object?



OBSERVATIONS

data + evidence



GUIDING questions

How can you make an object move faster or in a different direction?



EXTRA MILE challenges

1. Challenge #1 (Farthest)
2. Challenge #2 (Speed)
3. Challenge #3 (Acceleration)
4. Challenge #4 (Point A to Point B - Stopping)
5. Challenge #5 (????)



TEAM NAKAMURA
were off to the races



EXPERIMENT

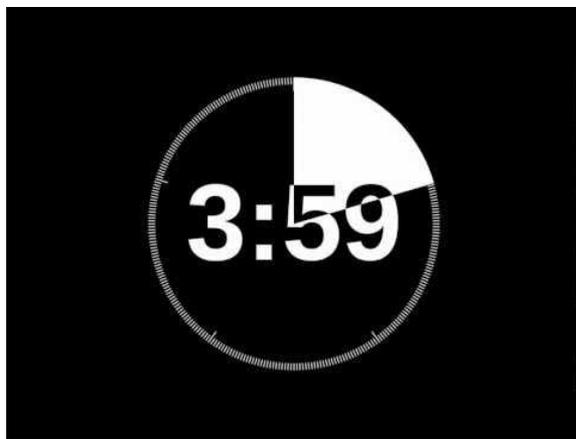
expectations

- Mute
- Raise Hand
- Three ways to participate
- Science Notebook



OBSERVATIONS

data + evidence



GUIDING questions

What are forces and how do they affect the motions of objects?



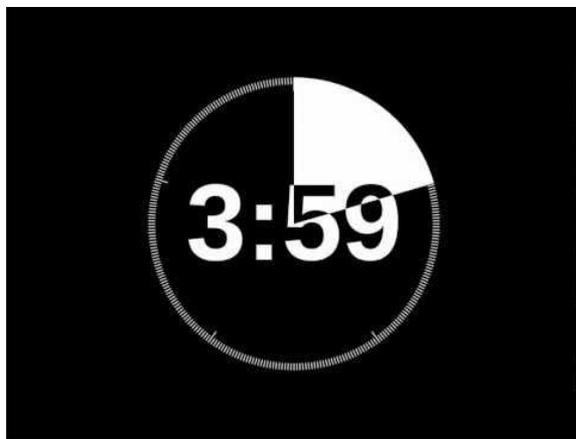
GUIDING questions

Do objects always need a force
in order to keep moving?



OBSERVATIONS

data + evidence



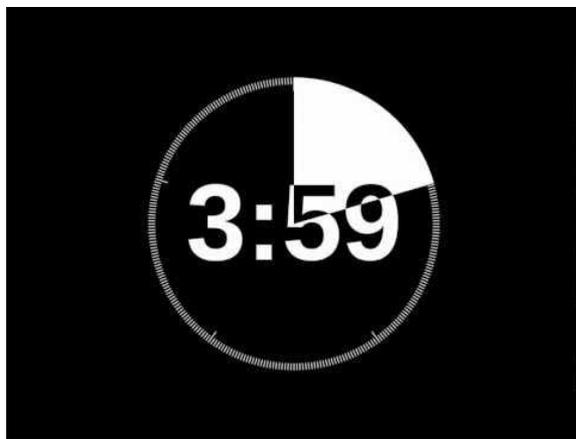
GUIDING questions

Did the car travel farther from the starting line than before?
Why or why not?



OBSERVATIONS

data + evidence



GUIDING questions

What happens when a moving object collides with something?



EXTRA MILE challenges

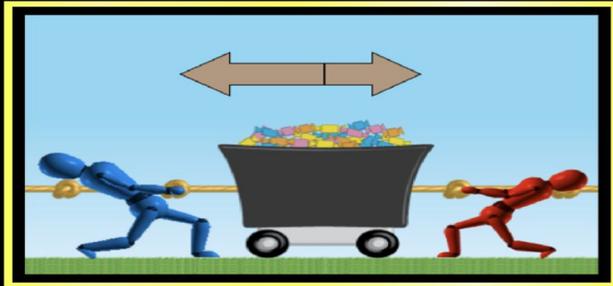
1. Challenge #1 - Go the distance
2. Challenge #2 - How fast can you go?
3. Challenge #3 - Can your car accelerate?
4. Challenge #4 - Point A to Point B
5. Challenge #5 - Student's Choice



Explain



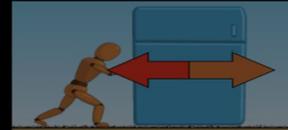
Forces and Motion: Basics



Net Force



Motion



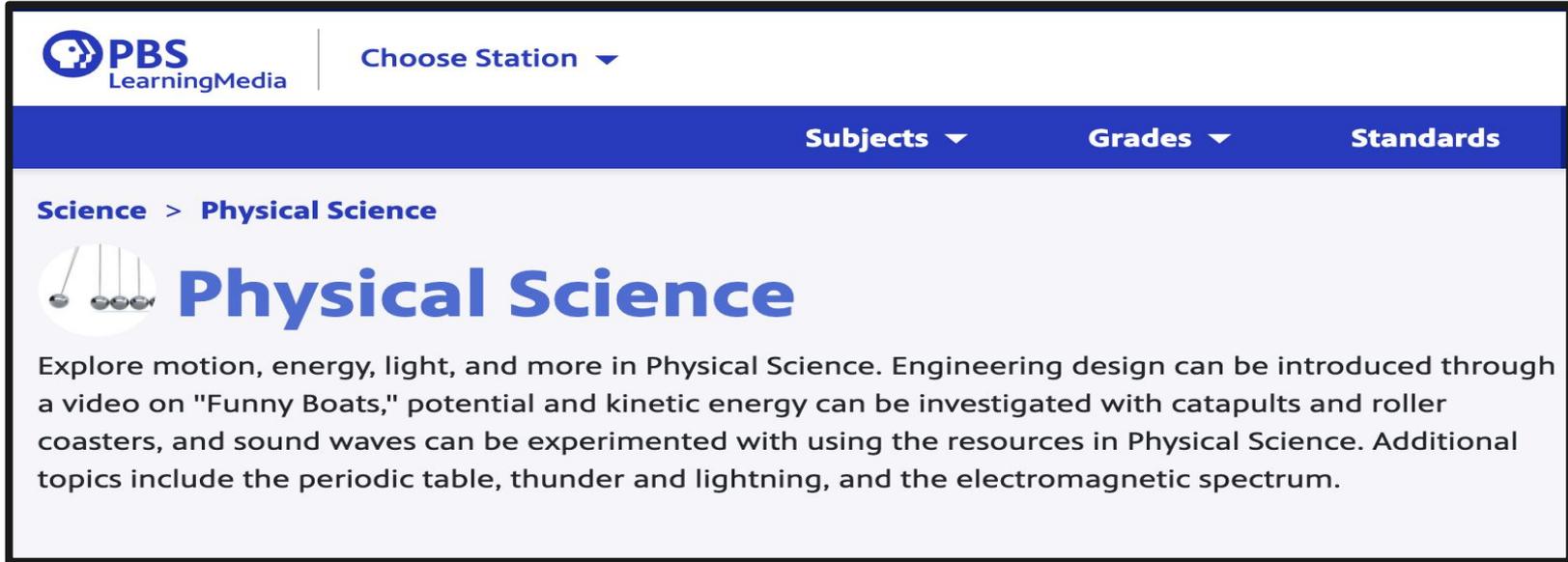
Friction



Acceleration



Elaborate



The screenshot shows the PBS LearningMedia website interface. At the top left is the PBS LearningMedia logo. To its right is a "Choose Station" dropdown menu. Below this is a dark blue navigation bar with three options: "Subjects", "Grades", and "Standards", each with a downward arrow. Underneath the navigation bar, the breadcrumb "Science > Physical Science" is displayed. A circular icon containing a Newton's cradle is positioned to the left of the main heading "Physical Science". Below the heading is a paragraph of text describing the resources available for Physical Science.

PBS LearningMedia | Choose Station ▼

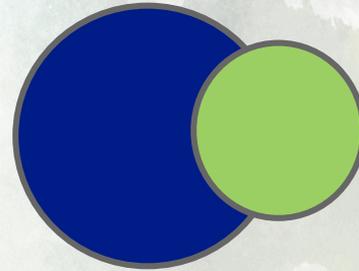
Subjects ▼ Grades ▼ Standards

Science > Physical Science

 **Physical Science**

Explore motion, energy, light, and more in Physical Science. Engineering design can be introduced through a video on "Funny Boats," potential and kinetic energy can be investigated with catapults and roller coasters, and sound waves can be experimented with using the resources in Physical Science. Additional topics include the periodic table, thunder and lightning, and the electromagnetic spectrum.

What have we
learned so far?



What is your evidence?

We Speak Like Scientists!

Scientists share their thinking.	Scientists agree and build on.	Scientists challenge ideas.
I observed _____.	I agree with _____, because _____.	I disagree with _____ because _____.
I think _____ because _____.	I want to add on to your idea about _____.	I have a different idea about _____.
For example, _____.	What _____ said makes me think that _____.	Could you explain why you think _____?

Math Connections

What are different ways we can measure forces?

What factor(s) might cause one car or object be more damaged than another? How can we measure those factor(s)?

Can you graph the car's distance traveled at certain times to identify on the graph where a collision occurs and what happens afterward?

Does the radius of a wheel affect the speed of the car? How?





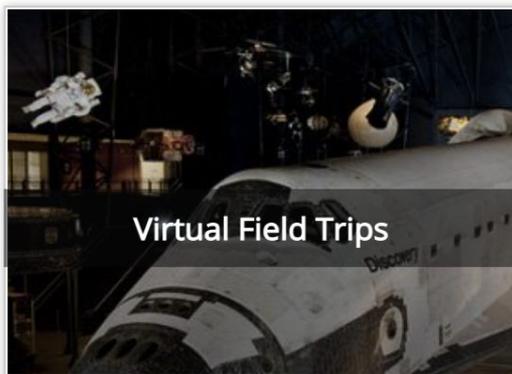
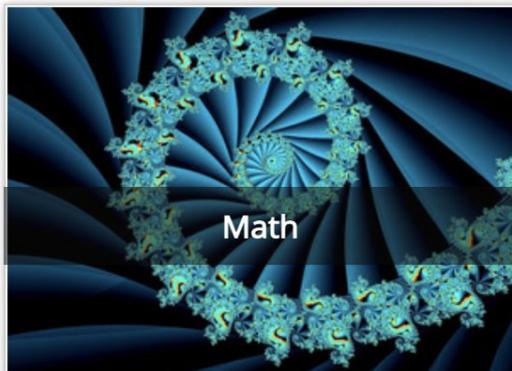
Reflections:

What other STEAM opportunities can you find around your house?



Teaching & Learning Resources

[Programs/Services](#) > [Educational Services](#) > [Distance Learning](#) > [Teaching & Learning Resources](#)





RAFT Resources

[STEAM Learning Activity Sheets](#)

Free online tools that guide parents, guardians, and students through activities for grades pre-K - 8 using common materials.

[Summer Camps](#)

Since 2018, RAFT has hosted summer STEAM programming where students engage in design thinking to develop solutions for our community's greatest challenges. They practice empathy, collaboration, and critical thinking along the way!



STEAM Project Kits

Our kits include assembly instructions, suggested activities, and materials. Purchase online or in the RAFT Store.

[Learn More](#)



STEAM Learning Activities

Free [activity sheets](#), [idea sheets](#), [lessons](#), and [teacher tips](#) for Pre-K to 8th grade activities. Soon in Spanish and Vietnamese.

[Learn More](#)



Professional Development

Workshops and other resources for educators covering a range of topics, skills, and methods.

[Learn More](#)



Makerspaces & Materials

Explore how we can help you design and start a fully-stocked makerspace at your school.

[Learn More](#)



RAFT in the Community

Whether a RAFT Maker Mobile visit, participation in your event, or a field trip to RAFT, we love supporting our community.

[Learn More](#)



Summer Camps

Learn more on how our summer camps inspire joy through hands-on learning with a focus on STEAM and Design Thinking.

[Learn More](#)

Connect with us!

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Thank you, Families!

