STEAM Family Night at Lagunita

Monterey County Office of Education & RAFT

Welcome!

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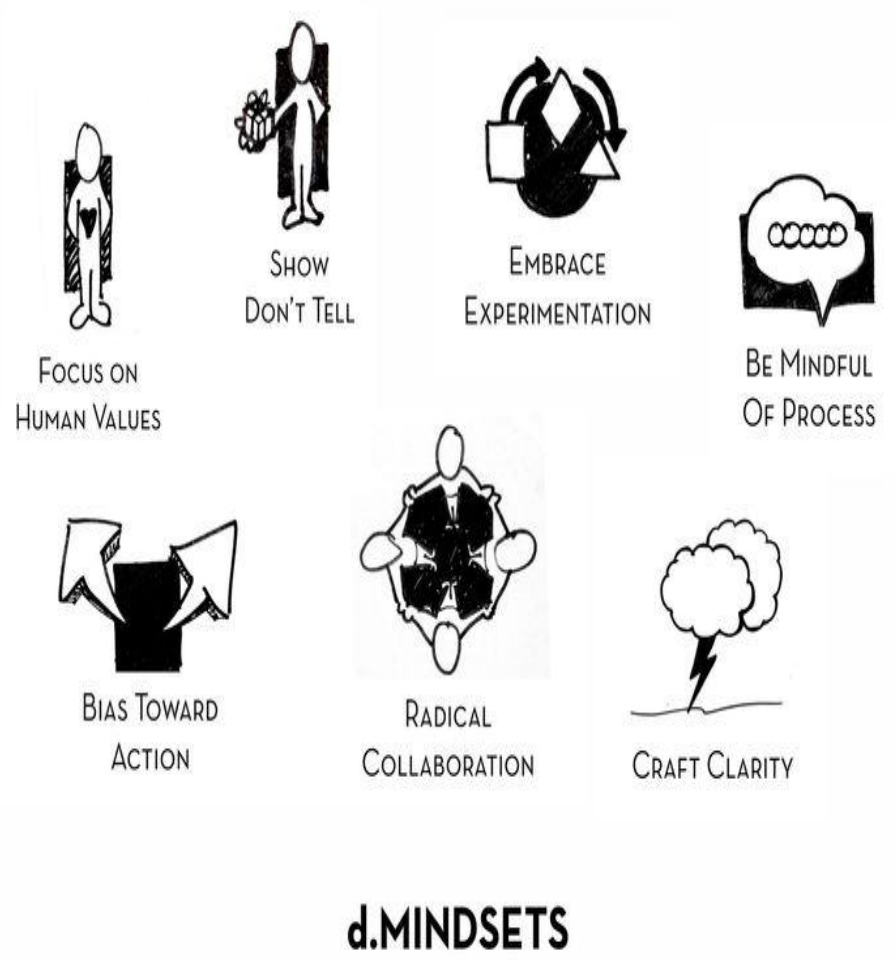


hackingelementary.com

MINDSET HACKS

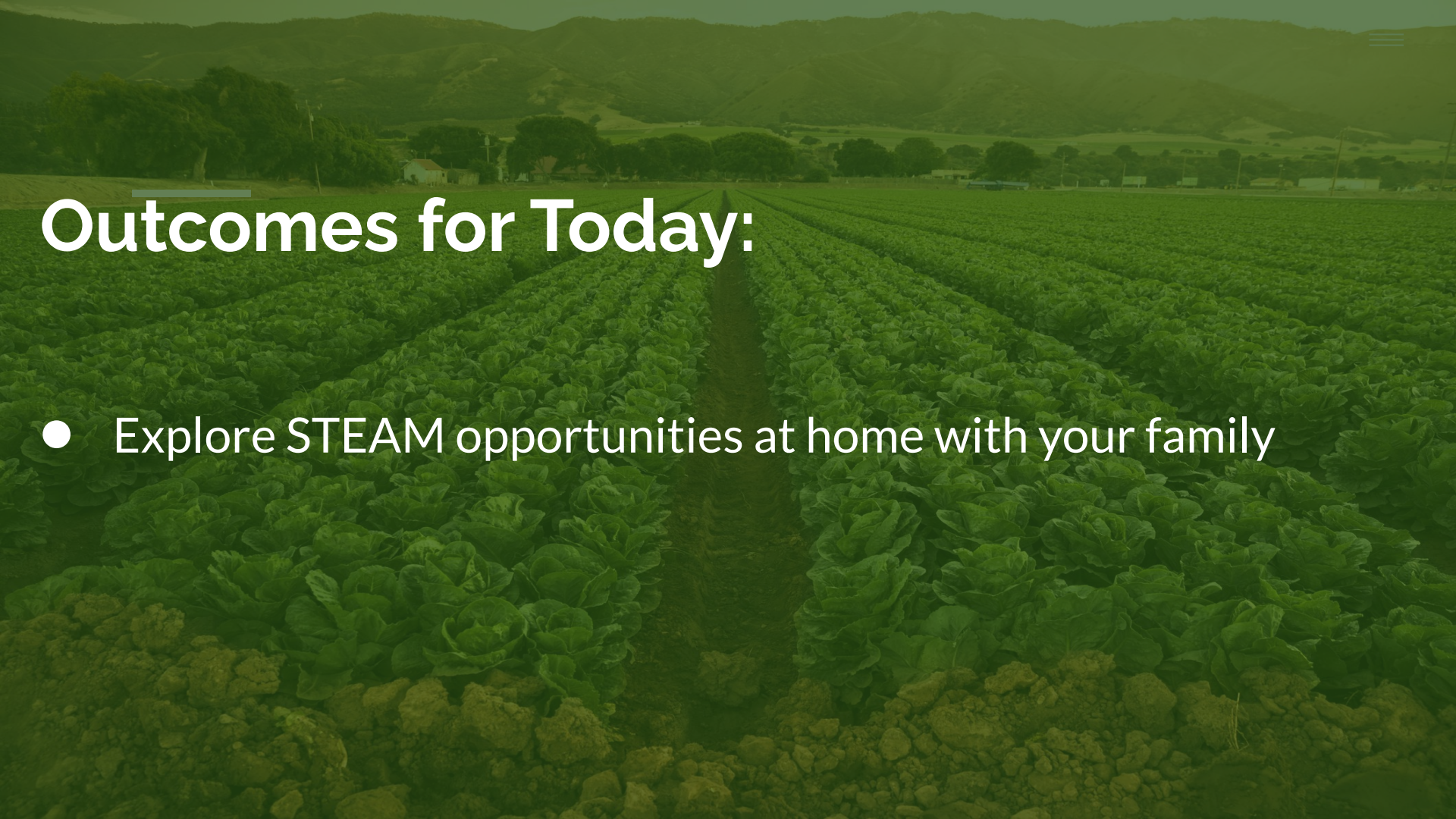
THINK FLEXIBLY

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

Debrief - Share Strategies Used

Norms

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

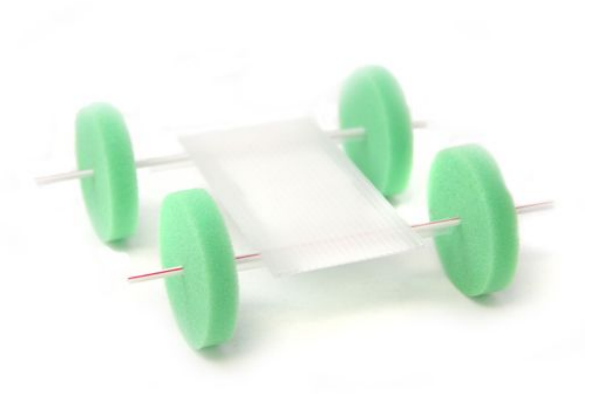


Outcomes for Today:

- 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!

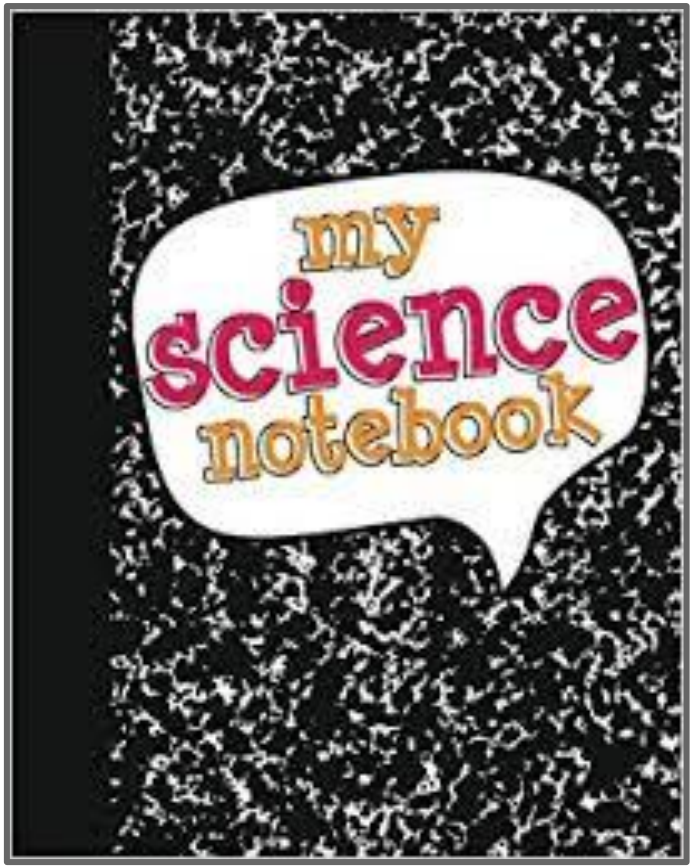
Supports:
Car on a Roll Project Guide (English) | Project Guide (Spanish) | Project Guide (Vietnamese)

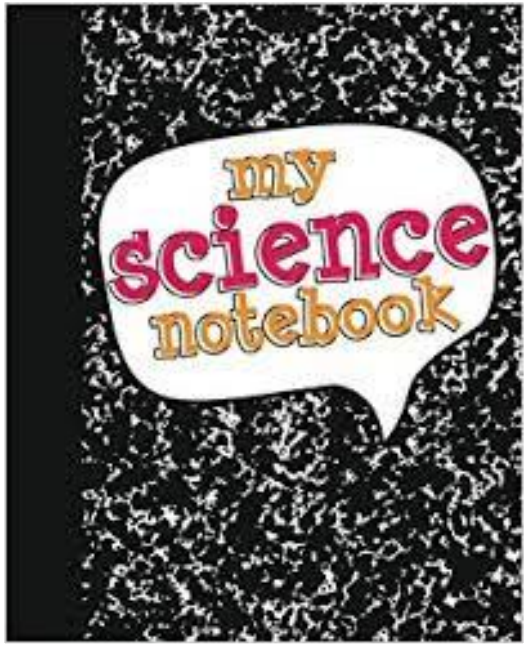
Learn More:

- 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

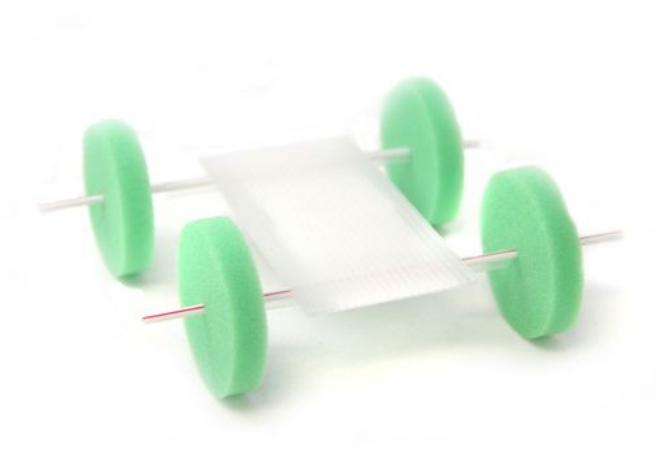




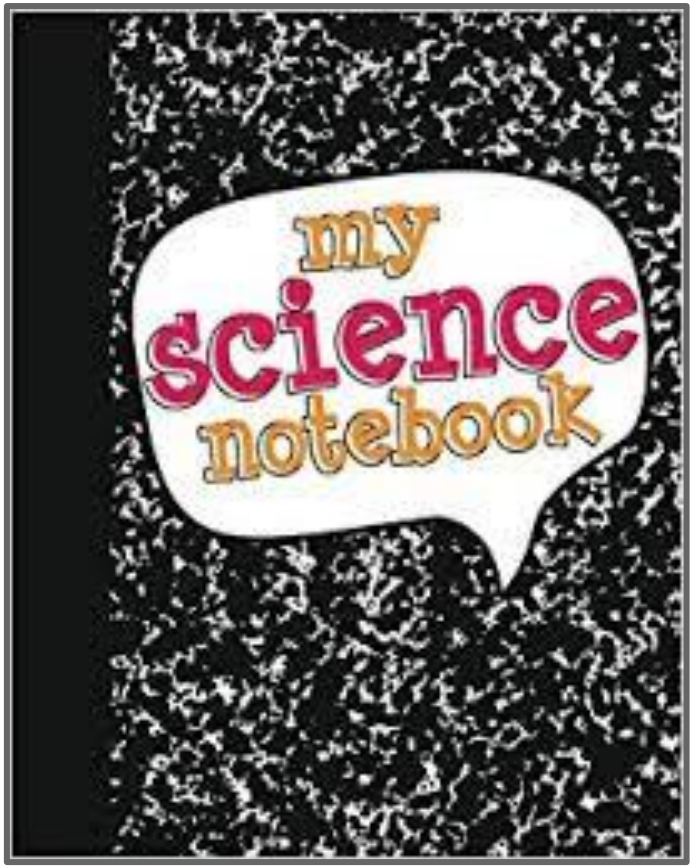
- "What happens to energy when objects collide?"

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

KINDERGARTEN – FIRST GRADE – SECOND GRADE

EXPERIMENT
expectations

- Mute
- Raise Hand
- Science Notebook

OBSERVATIONS

data + evidence

lagunita family STEAM NIGHT

GUIDING questions

What happens when you push or pull on an object?

OBSERVATIONS

data + evidence

lagunita family STEAM NIGHT

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

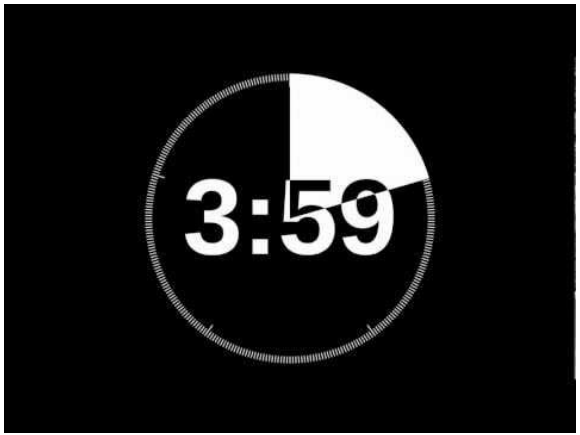
THIRD GRADE – FOURTH GRADE – FIFTH GRADE

EXPERIMENT
expectations

- Mute
- Raise Hand
- Science Notebook

OBSERVATIONS

data + evidence



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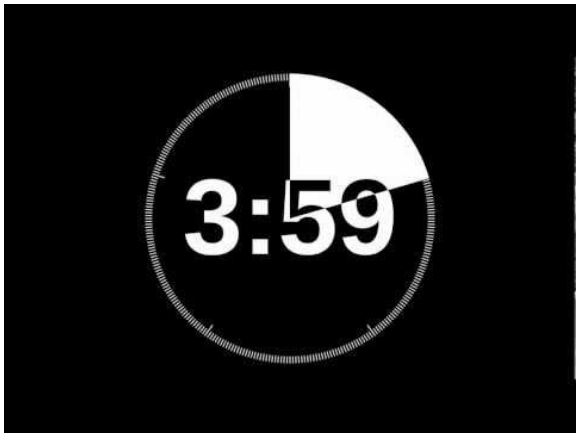
GUIDING questions

What happens when you push or pull on an object?

OBSERVATIONS

data + evidence



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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

we're off to the races

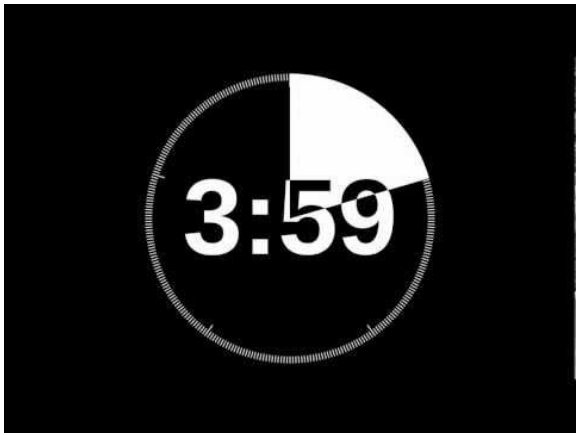
SIXTH GRADE – SEVENTH GRADE – EIGHTH GRADE

EXPERIMENT
expectations

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

OBSERVATIONS

data + evidence



lagunita family STEAM NIGHT

GUIDING questions

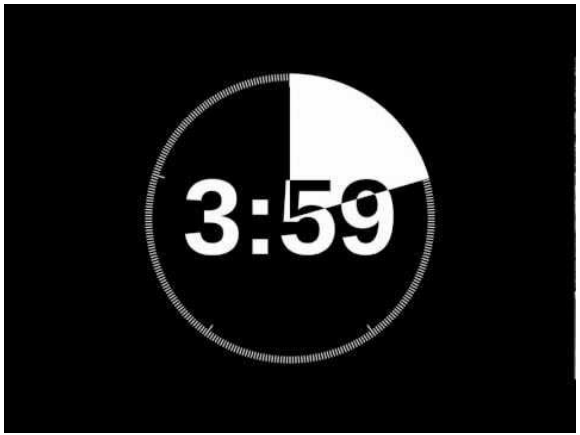
What are forces and how do they affect the motions of objects?

GUIDING questions

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

OBSERVATIONS

data + evidence



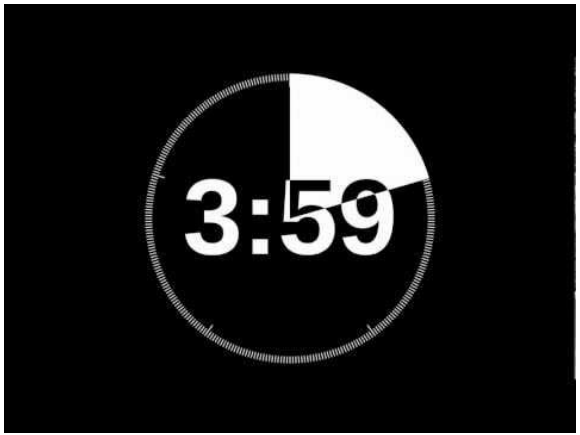
lagunita family STEAM NIGHT

GUIDING questions

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

OBSERVATIONS

data + evidence



lagunita family STEAM NIGHT

GUIDING questions

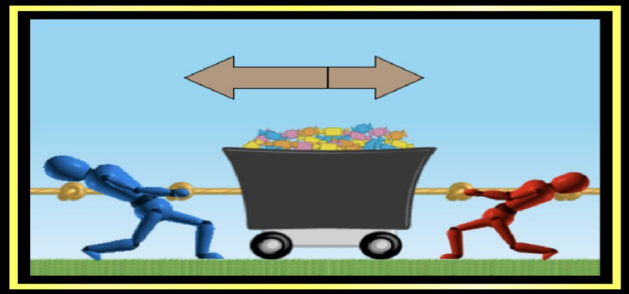
What happens when a moving object collides with something?

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

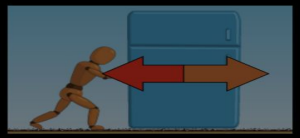
Explain

Forces and Motion: Basics



Net Force

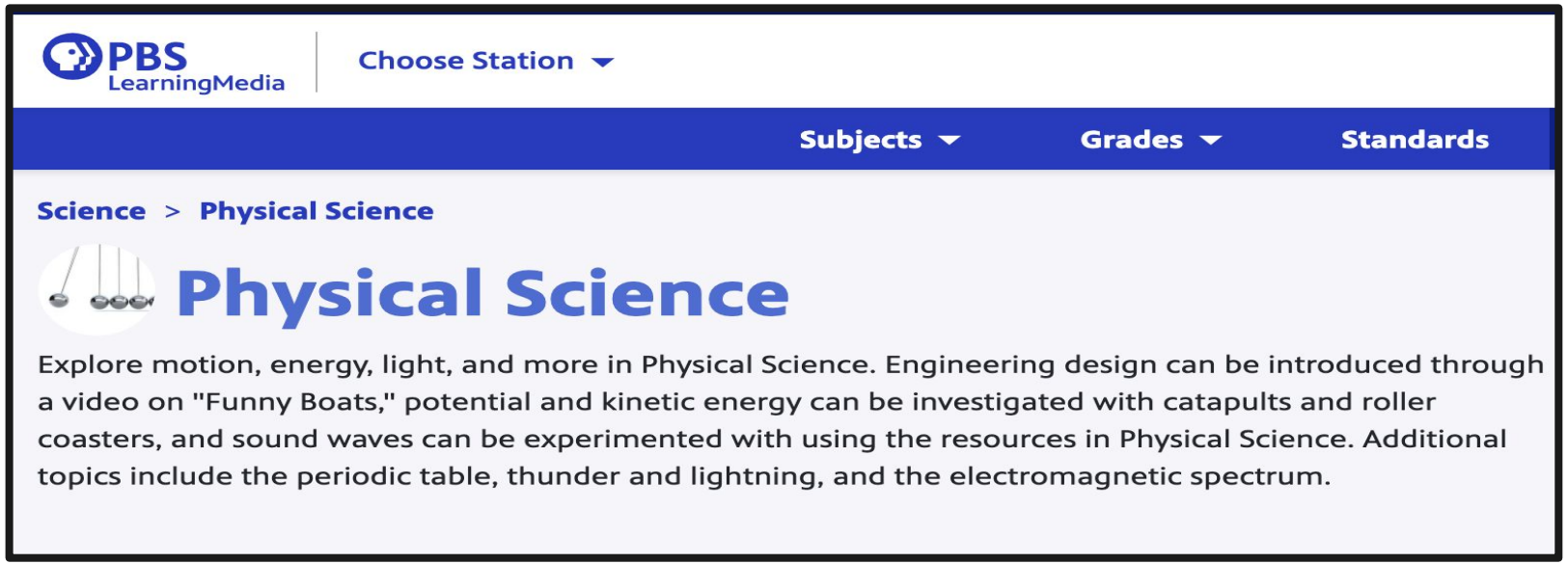
Motion



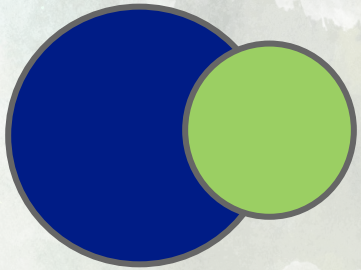
Friction

Acceleration

Elaborate


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?



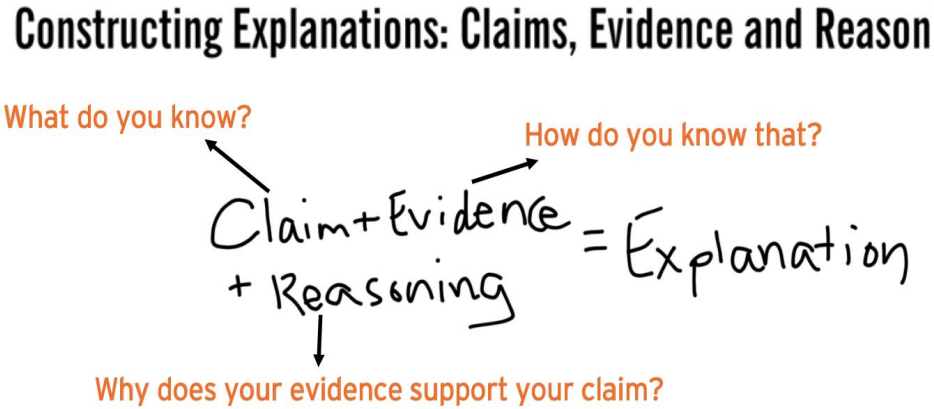
What is your evidence?

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 _____?

Students Self-Evaluate Progress

EVALUATE



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)?

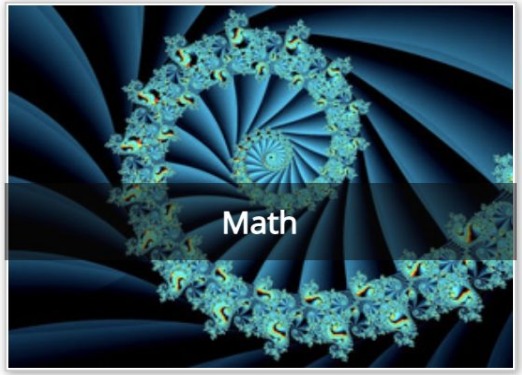
Can you graph the car's distance traveled at certain times to identify on the graph where a collision occurs and what happens afterward?

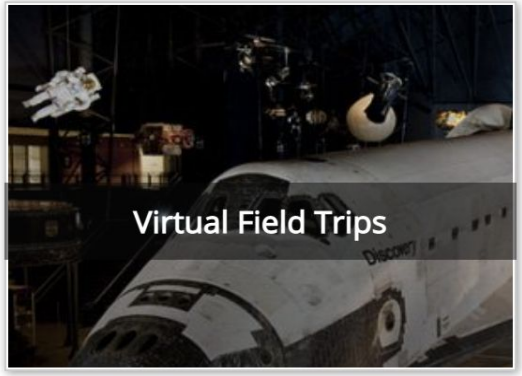
Does the radius of a wheel affect the speed of the car? How?

Reflections:

What other STEAM opportunities can you find around your house?

Teaching & Learning Resources





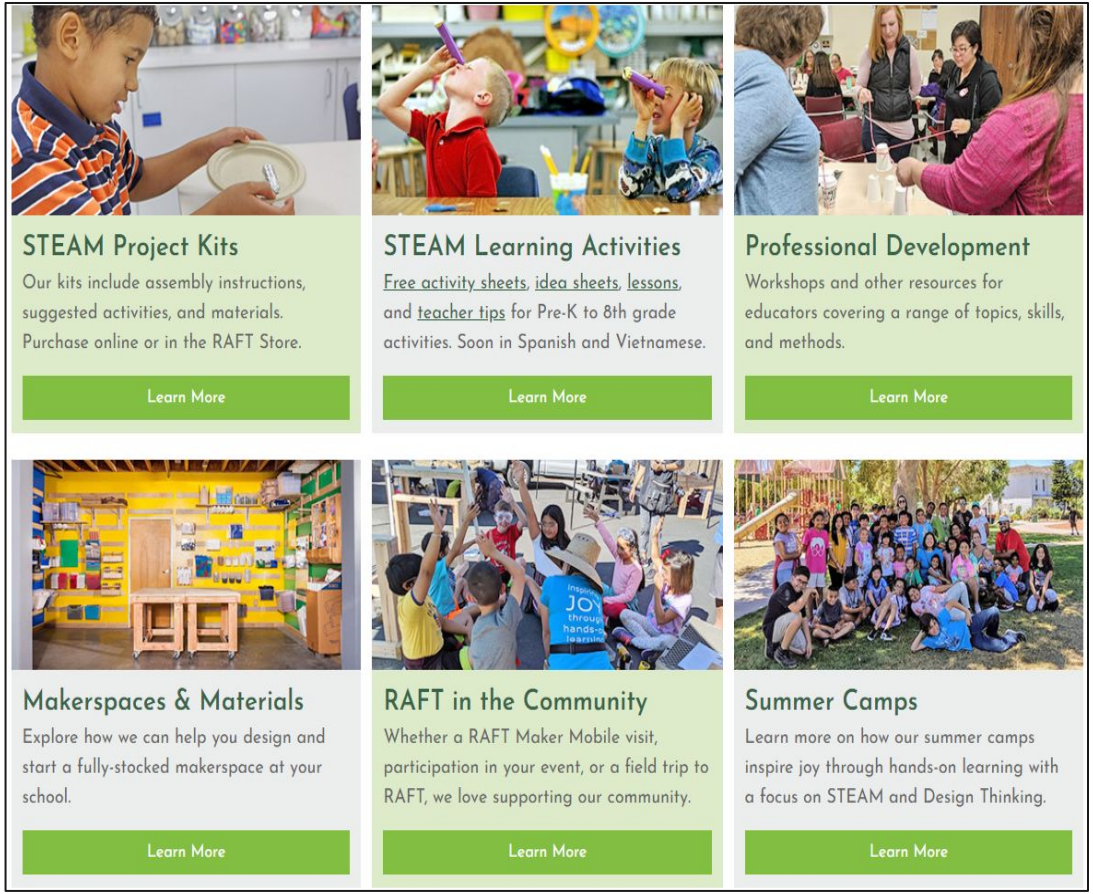
RAFT Resources

[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!



Connect with us!

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Thank you,
Families!
MONTEREY COUNTY
OFFICE OF EDUCATION
Leadership ~ Support ~ Service