Monday, February 4, 2019

Your Learning Goal: Students will review the forces that govern planetary behavior focusing on speed. They will engineer a zipline vehicle to learn how to calculate speed from distance and time.

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How Fast Is Fast? – 31L + R

Catalyst (31L): List 5 characteristics of a planet that we can measure.

Homework:

Complete the LEAF paragraph

Agenda:

1. Catalyst
2. Zipline Vehicle Build
3. Test
4. LEAF

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1/22/19	A Planet is Born	27L + R
1/24/19	Scaling the Planets	28L + R
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1/31/19	Electricity and Magnetism	30 L + R
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2/4/19

Catalyst:

List 5 characteristics of a planet that we can measure

31L

How Fast Is Fast?

31R

Catalyst:

List 5 characteristics of a planet that we can measure

31L

2/4/19

How Fast Is Fast?

Motion Pictures:

1. "The amount of _____ for a certain amount of _____."
2.
3.
4.
5.

31R

FIRST QUESTION

How do we *describe* movement?

The world's fastest runner …

100 meters in 9.58 seconds

Usain Bolt (Jamaica)

1) "The amount of _____ for a certain amount of _____ ."

31 L

The world's fastest hot dog eater …

72 hot dogs in 10 minutes

Joey Chestnut (San Jose, CA)

2) "The amount of _____ for a certain amount of _____ ."

31 R

The world's fastest rapper …

723 syllables in 41.27 seconds

Ricky "No Clue" Brown (Seattle, WA)

3) "The amount of _____ for a certain amount of _____."

31 R

The World's Fastest Roller Coaster …

149.1 miles per hour

The Formula Rossa (Abu Dhabi)

4) "The amount of _____ for a certain amount of _____ ."

https://www.youtube.com/watch?time_continue=42&v=Zd9A6X5Fh9I

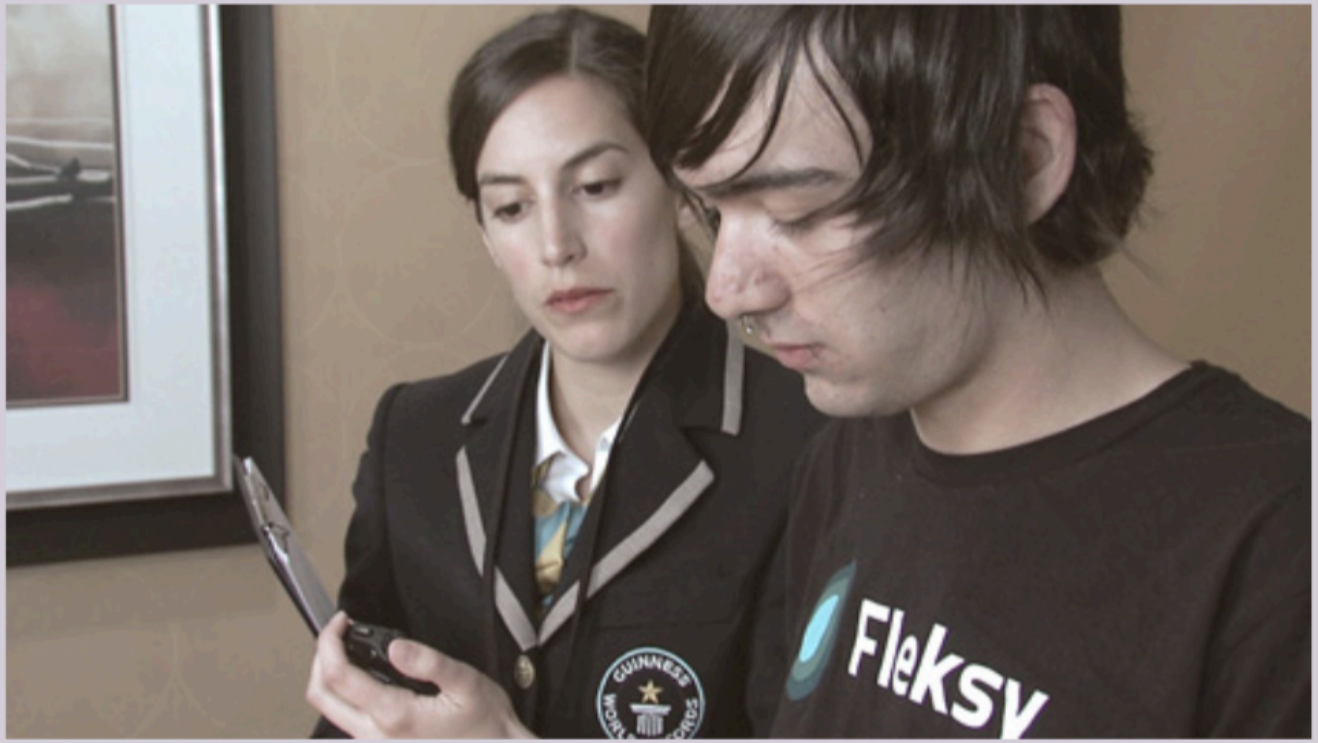
31 R

The world's fastest text messanger …

160 characters in 17 seconds

Marcel Filho (Brazil)

5) "The amount of _____ for a certain amount of _____ ."



31 R

Catalyst:

List 5 characteristics of a planet that we can measure

31L

2/4/19

How Fast Is Fast?

Motion Pictures:

1. "The amount of _____ for a certain amount of _____."
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31R

Now, we're going to see if you can see speed in action!

Can you make the fastest zip line vehicle?

After you build, we will *test* it and *collect* data!

5 m

Next, *design* your vehicle by sketching a diagram of how your vehicle will look like. Use the materials to help you figure it out!

Materials:

- 1 balloon
- 4 washers (mass)
- 1 binder clip
- 1 straw
- 31 cm of tape

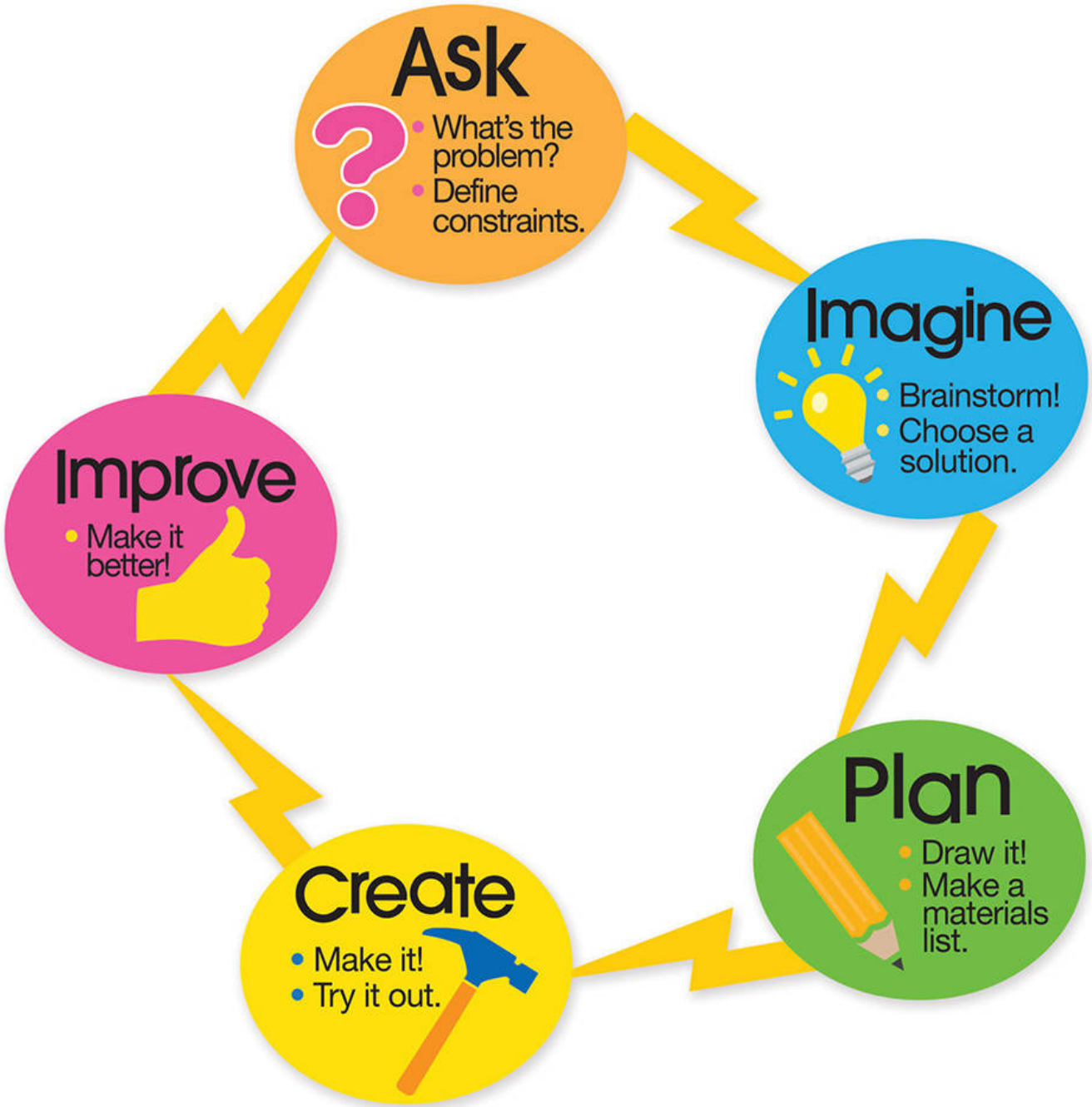
+ Any Recycled Materials you wish to bring in for the body of your zip line vehicle

Think about:

- ❑ Where are you attaching the balloon to the vehicle?
- ❑ How will you attach the vehicle to the line?
- ❑ How you will attach the 4 washers (mass).

Trial # 1

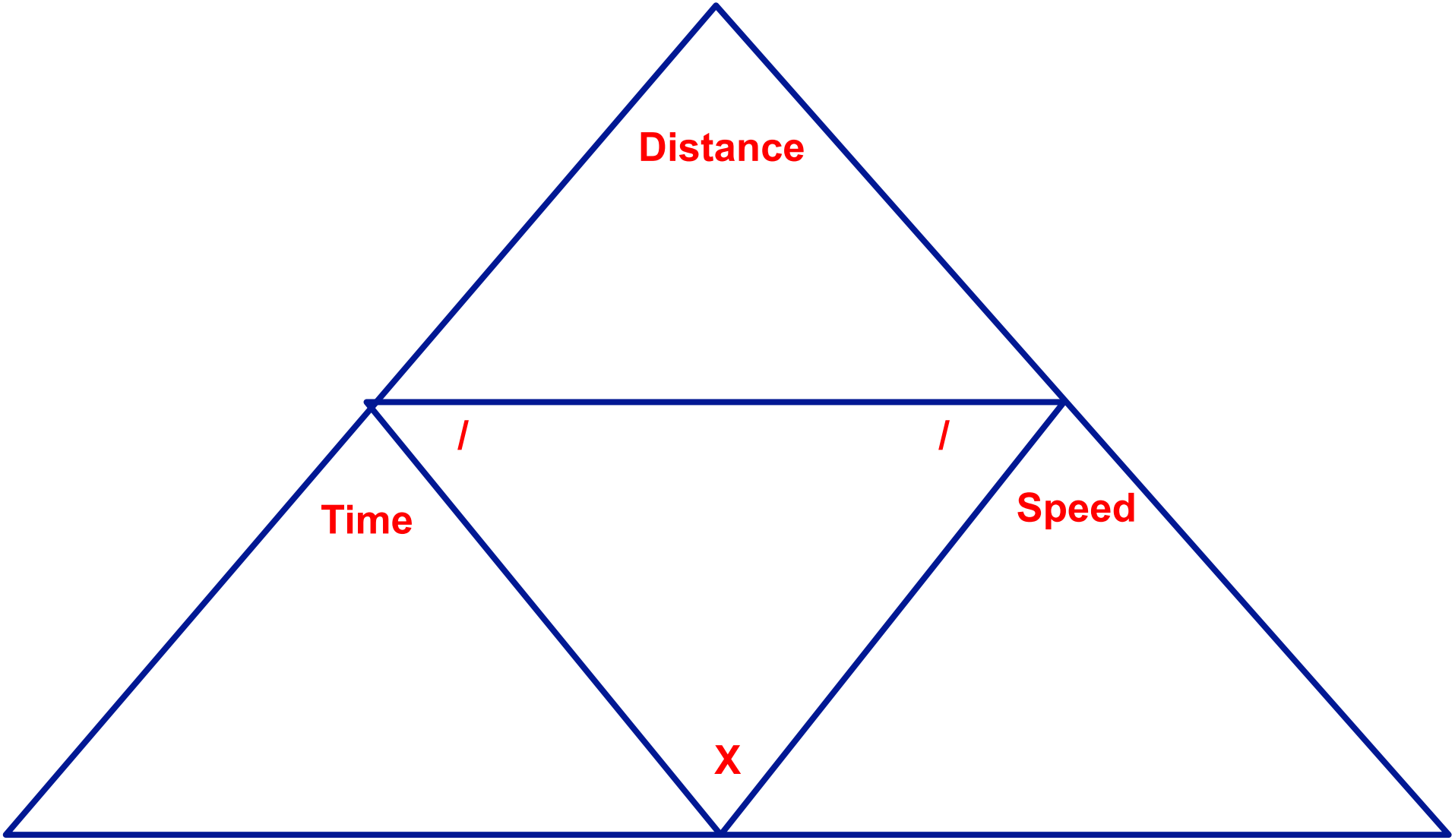
Team	Distance	Time	Speed
Mercury			
Venus			
Mars			
Jupiter			
Saturn			
Uranus			
Neptune			


Ask
What's the problem?
Define constraints.
Imagine
Brainstorm!
Choose a solution.
Plan
Draw it!
Make a materials list.
Create
Make it!
Try it out.
Improve
Make it better!

Trial # 2

Team	Distance	Time	Speed
Mercury			
Venus			
Mars			
Jupiter			
Saturn			
Uranus			
Neptune			

What did we learn about SPEED?



Catalyst:

List 5 characteristics of a planet that we can measure

LEAF:

What is the single most important design element to creating a fast moving vehicle? (Provide data from our lab to support your claim).

31L

2/4/19

How Fast Is Fast?

Motion Pictures:

1. "The amount of _____ for a certain amount of _____."
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31R

YOU WILL TURN IN TO ME A PRINTED FINAL COPY

What is the single most important design element to creating a fast moving vehicle? (Provide data from our lab to support your claim).

31R