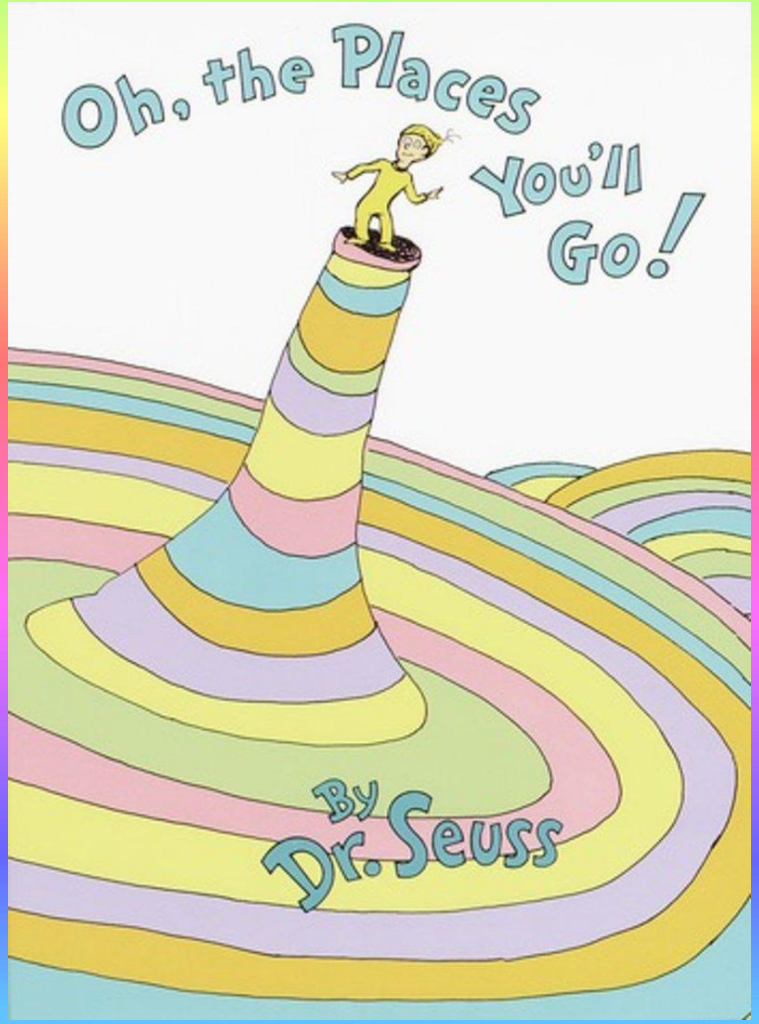
Oh, the Places You'll Go

STEAM Challenge

An Engineering, Literacy, and STEAM Experience



Step 1: Read and Examine

1) Read the book.

As you are reading/listening, think about the problems that are happening in the story.

2) Examine the elements of the story. Think about how the story comes together. Who are the characters? What are their actions? What is the message the author is sending?

Step 2: Retell

1) Work as a class to retell the story using the images from the book.

2) Create a SWBST statement:

Someone:

Wanted:

But:

So:

Then:

Step 3: Connections

Let's make a text to self connection. Where are all the places you'd like to go? What "mountains" do you see in your future?

The more places, the better!

Don't judge ideas!

Sketch or write... you choose!

Step 4: Research and Design Your Own

Research and learn all about how things fly

Start with a K-W-L about "How things fly"

What I know	What I want to know	What I've learned

Step 5: Blueprint Sketch & Design

- How can I use what I know to design a parachute that can fly?
- What would characteristics would define a good parachute?
- Brainstorm with your team.
- Sketch a design.
- Be able to explain with words the science behind your sketch.

Step 6: Build with your team

STEAM CHALLENGE: Work as a team to create a parachute that can hold its flight the longest.

PARAMETERS:

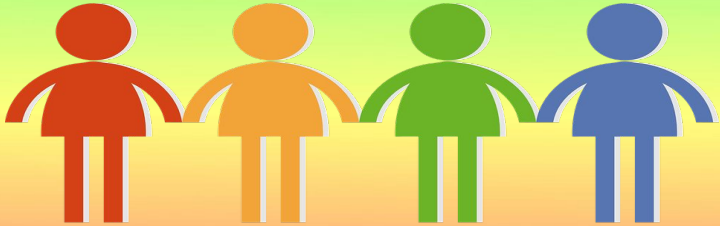
- Use only one form of material as the parachute's cover
- String
- Scissors
- Tape that is passed out to you

Step 7: Test with your team

Test your parachute.

- Take it outside and test it from a given height.
- Does it fall slowly and land gently?
- Document your observation.
- Are there any variables you'd like to change?
- What are you noticing as you make changes and then drop again?

Step 8: Group Present



Be prepared to present to the group. Decide who will speak about each number. Practice presenting to each other before speaking to the whole class.

1) Tell us about your prototype.
2) What was the most challenging part of the process?
3) How well did your group work together?
4) What would your group do differently next time?

Step 9: Time to Reflect

Let's think about the science we used in this process. Have a discussion around the following questions:

1) Look at the air time for the different parachutes. What role does the design of the plane have to do with this?

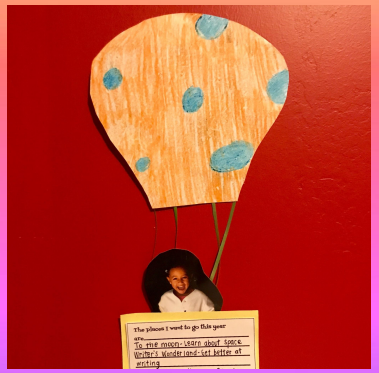
2) What type of material is best for making a parachute? Why?

3) What surprised you about this experience?

4) How would you alter your learning experience for next time?

Next Steps

- Go back to your chart and review what you've learned
  - Are there any other questions that you asked that can now be answered?
- Revisit "Step 3"
- Take out your list of "mountains" you'd like to reach for.
- Using the template printed, design a hot air balloon.
- Copy down your mountain places on the lines.



Extend Your Learning

1) Compare and contrast a hot air balloon and a parachute?

2) How is a hot air balloon able to stay up in the air for longer periods of time?

3) What would this design look like as a model that you create?