Plan For The Week Science 7

Plan for the week of: _April 27 - May 1_____

At the end of the week you will know, understand, and/or be able to do the following:

I can use the engineering process to solve a problem.
I can successfully apply the steps of the scientific method to an experiment.

Why does this learning matter?

The scientific method helps us solve real world problems and is a key concept in middle school science.

The plan for the week :

- Monday: Read the background knowledge about air resistance and gravity. Read and begin filling out the 'Scientific Method Lab Worksheet'.
- Tuesday: Look around your house for items that could be used to make a parachute. Items like sandwich bags, trashbags, fabric,tissue paper, cardboard, etc. The goal is to build a parachute out of household items that will protect an egg from cracking.
  Come up with and sketch at least three different ways you could make a parachute using the materials you've found.
- Wednesday: Design and build the parachutes using the directions provided- there are 2 methods provided or feel free to come up with your own. Make sure you write down the method used and use the same method for building both parachutes.
- Thursday: Test your parachute.
  - The height should be the same for all 'drops'
  - Complete the 'Scientific Method Lab Worksheet' or use a separate sheet of paper if you need more room
- Friday: Redesign/test. Think about how you could improve your parachute.
  Can you improve the amount of air resistance on the parachute? Can you increase the drop height? Can you make your parachute more durable? Improve your original parachute or build a new version.
- Ways to demonstrate learning (pick what works best):
  1. Email pictures/video of parachute and improvements
  2. Turn in sketches and indicate which design you chose. A brief description of how your parachute performed and what improvements you made.
- Extension
  Create other parachutes of different sizes/surface area (keeping all other design aspects the same).
  Create other parachutes using different materials (keeping all other design aspects the same).

Who To Ask For Help and How To Reach Them

Whitney Davis @ wdavis@fernridge.k12.or.us
or by phone 541-972-3156

Monday - Science

Scientific Method Lab Report Template

Title:

- *A brief concise, yet descriptive title*

Statement of the Problem:

- *What question(s) are you trying to answer?*

Hypothesis

- *Write a possible solution for the problem*
- *Make sure this possible solution is a complete sentence*
- *Make sure the statement is testable*

Materials:

- *Make a list of all items used in the lab*

Procedure:

- *Write a paragraph or a list which explains what you did in the lab.*
- *Your procedure should be written so that anyone else could repeat the experiment.*

Results:

- *This section should include any data tables, observations, or additional notes you make during the lab.*
- *Although some students may wish to recopy original data: it is important to always preserve the original*
- *You may attach a separate sheet(s) if necessary.*
- *All tables, graphs and charts should be labeled appropriately.*

Conclusions:

- *Accept or reject your hypothesis*
- *EXPLAIN why you accepted or rejected your hypothesis using data from the lab.*
- *Include a summary of the data – averages, highest, lowest, etc. to help the reader understand your results.*
- *List one thing you learned and describe how it applies to a real-life situation.*
- *discuss possible errors that could have occurred in the collection of data (experimental errors)*

Helpful format for writing a conclusion

This lab (experiment) investigated _____.
In order to study the problem we _____.
My results showed _____, thus proving my hypothesis was (correct/incorrect).
I believe the results are (accurate/inaccurate) because _____.
In order to further investigate this problem, next time I would _____.

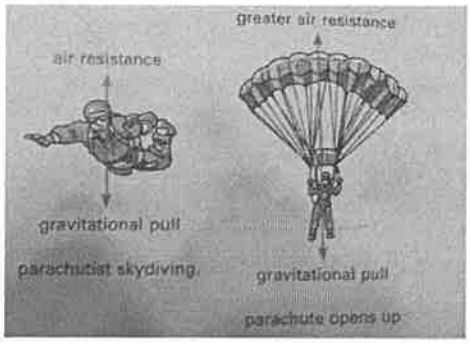
AIR RESISTANCE and GRAVITY

Gravity is the force that pulls all objects towards the core of the Earth. It's what causes anything that is dropped to fall to the floor, and it's what keeps you and me from flying off the Earth as it spins on its axis at incredible rates! Every single object is pulled towards the Earth with the same amount of gravity. So in theory, every object should fall at the same speed, right? Let's test it out.

Grab a rock and a piece of paper. First, drop the rock. Next, drop the paper. Did they both fall at the same pace? Why do you think the paper fell slower than the rock? Next, crumple the paper into a ball and drop it once again. What happened? You should have noticed that the crumpled paper falls faster than a flat piece of paper. What's going on?

AIR RESISTANCE! The reason that some objects fall slower than others is that they encounter different amounts of air resistance. The amount of air resistance depends largely on the surface area of the object. If the surface area is larger, the air resistance is stronger. That's why a flat piece of paper falls slower... it has a much larger surface area than a rock. When you crumpled the paper, you reduced the surface area, so it fell faster.

Every object that falls accelerates at approximately 10m/s/s, but at a certain point, that acceleration levels off. That point is called terminal velocity. Terminal velocity is the point at which air resistance balances out the force of gravity. When an object reaches terminal velocity, it quits accelerating and continues to fall at a steady speed.



https://www.tes.com/lessons/uAMhDbbokMPyIA/air-resistance

In real life, you see air resistance at work when someone uses a parachute. Using a parachute drastically decreases your terminal velocity by increasing air resistance, allowing you to float safely to the ground. Air resistance is basically friction with gas particles, which can slow down the speed of a falling object. Parachutes work on this idea, and this experiment is designed to show how air resistance can be used to safely drop an egg from 10 ft. or higher.

[Air resistance, also called drag, is simply a force that acts on a solid object. Car designers often factor in wind resistance when designing a car to help it have greater fuel efficiency and accelerate to high speeds more easily.]

Egg Drop Parachute

Problem: Can a parachute made out of plastic bags and string save an egg from a fall?

Suggested materials:

plastic trash bag, plastic sandwich bags, string, fabric, paper, scissors, eggs

*use items you already have

*make substitutions where necessary

Procedure 1:

1. Cut a square from the garbage bag that is 20 inches on each side.
2. Poke one hole in each corner of the piece of plastic garbage bag.
3. Cut four pieces of 20-inch long string.
4. Thread a piece of string through each hole in the bag and secure by tying the string firmly on each corner.
5. Place one egg into the plastic sandwich bag, twist the top of the bag and tie closed with the loose ends of strings. This will also attach the parachute to the bag holding the egg.

Procedure 2:

1. Cut four strings of equal length and tape one end to each corner of your parachute.
2. Tape the other end of the four strings to your egg. Make sure to tape them securely so they stick to the egg!

Think about what you know about wind resistance. Which parachute do you think will allow the egg to drift to the ground slowly? Make a note about what you think will happen. This is your hypothesis.

Take the egg parachute to an area where you can drop the egg from 6ft or higher.

Record your observations and results.

Check your egg! Did it survive? If not, back to the drawing board. Continue redesigning until you have a parachute that transports your egg safely to the ground.

Tuesday - Science

Lab Report

Title:

Purpose/Problem:

Hypothesis:

Materials/Supplies:

Procedure:

Observations and Data:

Conclusion/Summary:

Wednesday - Friday Science

Plan For The Week: 7th Grade Social Studies

Plan for the week of: April 27th

At the end of the week students will:

- Understand and explain current events that are happening world wide.
- Create a primary source (journal) reflecting on issues or what you did on a given day. For example what did you do on a given day, how did you feel on a given day, or what major event happened on this day.

Why does this learning matter?

You'll be learning about current events and journaling what happened and how it made you feel during this time. You are living history and by journaling you are creating a primary source that people in the future can use to learn from.

The plan for the week :

- **Monday -- Friday**
  Pick a **news story** from television, newspaper, magazine, or radio and explain why it is important. Using your Current event worksheet write a short response (one or two paragraphs) explaining what you learned, why it was important. Who, what, when, why, and how come statements work well when explaining the news stories.
- **Create a journal** or use a spiral notebook and journal what you did each day. What events happened on this day that were important to you, and how did it make you feel? You can journal about social isolation and how you're feeling, events you did during this time with you and your family, major news stories and how it's affecting you, and most importantly your feelings. In the future looking back and reading how all these events affected you can be powerful. Who knows... your grandkids might interview you someday about these events, and you will be able to show them the primary documents that you created.

  The journal entries can be as long as you want it to be, but remember the more detail you put in the better it will sound. Don't be afraid to go above and beyond and include lots of details. Years from now you will enjoy reflecting and reading your journals, the people who write more will have more to reflect on. You can also journal about how your family is doing, feel free to interview a family member and share their feelings and experiences. As a family you are all in this together and it might be nice to hear both yours and their voices in your journals.

If you struggle with writing, start small. Maybe begin with a paragraph or two, then work your way up to a half page, then a page. Have fun with this journal, it's about your feelings and experiences. There are no wrong answers.

Who To Ask For Help and How To Reach Them

Mr. Wondra, 7th Grade Social Studies Teacher

Email: pwondra@fernridge.k12.or.us
Direct Phone: 541-877-0154

Current Events Journal

Name_____Date_____Per._____

This assignment is similar to how we watch CNN 10 daily when we are in the classroom. Choose a news source to watch (tv or internet), listen to (radio), or read (newspaper). Listen to that news source each day. Below, write down a short paragraph on what the topic is and what you learned. Feel free to watch the news with your parents/guardians and discuss the story with them before writing down your response. **YOU MUST WRITE MORE THAN ONE WORD ANSWERS TO THE QUESTIONS**. No credit will be given for incomplete answers.

MONDAY

What things were discussed in the news?

What did you learn?

TUESDAY

What things were discussed in the news?

What did you learn?

WEDNESDAY

What things were discussed in the news?

What did you learn?

THURSDAY

What things were discussed in the news?

What did you learn?

FRIDAY

What things were discussed in the news?

What did you learn?