

Science Portfolio Handbook for Parents and Students

What is a Portfolio?

A portfolio is a collection of work “to support reflection that can help students understand their own learning and to provide a richer picture of student work that documents growth over time” (Barrett, 2005).

Why should students keep a portfolio?

Portfolios show progression in learning over time. Selecting portfolio pieces allows for student choice, and their own evaluation of what best showcases their learning. Reflection is a key portion of the portfolio – allowing students to consider their assignment, learning, strengths and weaknesses, and how to improve.

As a student progresses through grade levels, peer review and constructive commentary play a role for student self-assessment and opportunities to plan progress.

What are the key traits of a science portfolio?

A portfolio is a long-term form of self reflection and assessment that students do together with their peers, teachers and school community, via commentary and feedback.

A portfolio is not just a folder containing student work but a self-selection. Student selection and choice is vital in the process. Explaining their chosen pieces and evaluating their learning is essential. A class of students should not all have the same exact pieces every month.

A portfolio provides student work artifacts that show growth over time. By reflecting on their own learning (self-assessment), students begin to identify the strengths and weaknesses in their work. These weaknesses then become improvement goals.

Why use portfolio assessments?

1. Provides students with opportunity to showcase what they have learned.
2. Promotes student self reflection, critical thinking, and evaluation skills
3. Encourages self development through goal setting, peer collaboration, and cooperative learning for further success in work environments.

Essential Elements of a Successful Science Portfolio

1. Student completes bell ringer upon entering classroom. Shows active involvement in learning process.
2. Student completes note-taking section of notebook with parental involvement from home
3. Student completes quizzes and parent grades from home or auto grade on computer.
4. Student submits best work following format once every 8 weeks for grading. Best work to be submitted includes:
 - a. Notes in and out of class
 - b. Self reflection worksheet
 - c. Lab notes
 - d. Drawings
 - e. Writing Samples
 - f. All project scopes
 - g. SMART Goals

Organization of the portfolio

Special Note: Colors for example only, students may use own dividers and colors.

Table of contents

My Chapter Notes & Reading

PRE - Reading is imperative in this class. **All chapter reading must be completed prior to attending the matched class lab.** This is very important because the lab is tied to the fact that the student has some previous knowledge. If your student did not read the material they will not have deep learning for the class experience.

Notes may be *handwritten* or typed and added to notebook. I have shown an example below for students to follow. **Note-taking should be managed and supervised by parent at home.** This will be part of the portfolio grade and should show upward progression of growth in note-taking skills.

Use the Checkpoints - Each section of the notebook uses a Reading Checkpoint. Parents can utilize this to ensure student has completed reading. Often, this will be the bell ringer activity. This will ensure parent and student that they are ready for the upcoming lab and material.

Special Note: If student falls behind by a week, jump them ahead so they do not continue to fall behind. You can catch up missed material over breaks or weekends. Material is due upon portfolio submission.

Inquiry / Bell Ringers

Bell ringers are essential for critical thinking skills and show that student is actively participating in class and enters room in a timely organized manner, ready to learn. If you notice bell-ringers are absent from your student's notebook, they are not participating in a requirement of the class.

Class Notes

These are notes taken from lecture, videos, and labs. If your student does not complete worksheets for labs, or has an absent space in the date provided, they are missing out on valuable learning in the classroom and should be encouraged to take notes, participate actively, and complete drawings and labs in their entirety.

Quiz Results

Quizzes will be given at home and graded automatically by computer or graded by photo provided answers online. Parents must sign all pencil quizzes and give at home.

Labs

These are worksheets provided by Mrs. Redfoot and should be completely filled out. If student does not know how to fill out completely, they must initiate a meeting with Mrs. Redfoot for help.

Science Writing Prompts – Black

Occasionally students will be given a writing prompt about a science subject. It could be a Biography, a famous scientist, an experiment from the past, a current event.

Rubric and all Portfolio turn in sheets

You must keep your Science Portfolio Worksheets for Students handy at all times. When you turn in your assignment for a grade, you must include the worksheets.

Setting up the portfolio

The Portfolio Book must be set up in the following order with tabs or separators.

Table of contents

Chapter Notes & Reading

Notes may be *handwritten* or typed and added to notebook.

Inquiry / Bell Ringers

Class Notes

Labs

These are worksheets provided by Mrs. Redfoot and should be completely filled out. If student does not know how to fill out completely, they must initiate a meeting with Mrs. Redfoot for help.

Quiz Results

Science Writing Prompts

Rubric and all Portfolio turn in sheets

PUT YOUR PORTFOLIO BIBLE HERE – KEEP MASTER COPY

INSERT NOTEBOOK PAPER AND SHEET PROTECTORS AT THE BACK OF YOUR BINDER.

MY CHAPTER NOTES

Motion, Forces, and Energy

Vocabulary:

Motion:

ISU

Speed

Average Speed

Instantaneous Speed

Slope

I. Describing/measuring motion

A. Describing Motion

Motion: an object is in motion if its distance from another object is changing

1. Reference: a place or object used for comparison to determine if something is in motion.

2. Relative Motion: Whether or not an object is in motion depends on the reference point you chose

a) Sky Diver, Plane, Additional Diver, Earth

3. Measuring Distance ISU – International System of Units or SI

a) Scientists all over the world use the same systems of measurement.

b) Centi – 100, milli - one thousandth, kilo - one thousand

B. Calculating Speed

1. The Speed Equation = Distance over time

2. Average Speed – Total distance 45 KM, Total time 3 H, Avg Speed 45 over 3 or $45/3 = 15$ km/hr.

3. Instantaneous Speed – rate at which an object is moving at a given instant in time.

C. Describing Velocity

1.

D.

E.

Characteristics of Waves

Vocab:

Energy

Wave

Electromagnetic Waves:

Medium

Mechanical Waves

Transverse

Longitudinal

Rarefactions

Compressions

Crest

Trough

Notes from: Sound and Light Page 6 – 8.

I. Waves and Energy – What are Waves?

Energy: ability to do work

Wave: disturbance that transfers energy from place to place

A. What carries waves?

1. Most waves need something to travel through. Sound/air. Water/Water
But not light to sun – empty air OK

a) **Electromagnetic waves:** waves that travel without a medium

b) **Medium:** material through which wave travels

(1) Gas

(2) Solid

(3) Liquid

c) **Mechanical waves:** Waves that require a medium to travel

B. Types of Waves

1. Transverse Waves

2. Longitudinal Waves

3. Representing types of Waves

C.

1. How do waves transfer energy?

2. What causes waves?

a) Energy is always required to make a wave

b) **Mechanical waves are created when a source of energy causes the medium to vibrate.**

c) *When a vibration moves through a medium a wave results*

d) **Vibration is a repeated back and forth or up and down motion.**

QUIZZES

All quizzes will be taken at home by either pen/pencil or online as submitted on Google Classroom. Results will be automatic online or graded by photo posting of answers. Parents must grade paper and sign off on quizzes.

Chapter 1:

Parent: _____

Grade: _____

Chapter 2:

Parent: _____

Grade: _____

Bell Ringers

If you went on a jog with your friend and realized you left your sunglasses at the last stop and turned around to go retrieve them. What information would you need to know in order to catch back up with your friend?

Set a note taking goal here:

What do you want to learn in science this year?

If you jumped out of an airplane with your best friend, are you moving? Is the plane moving? Is the earth moving?

Class Notes

Who is moving? No one, unless you have a point of reference.

Why? All scientists need a similar way to measure things. They need to know the point of reference.

Relative to the sun, you are moving, so is chair.

Lab:

Today we gave examples on the board of what is moving by using a relative point of reference.

I learned that SI stands for systeme international.

Equation:

Speed = Distance over time

45 km total distance

In 3 hours

Average speed = $45 \text{ km} / 3 \text{ hr} = 15 \text{ km per hour}$

This is what I need to know to catch my friend. How fast is he moving and where is our next checkpoint for me to catch up. How fast will I need to run to catch up with him.

Labs

Purpose: What is your experiment about?

Question: What questions do I have before I begin?

Hypothesis: What do I suggest will happen during this experiment (1 variable)?

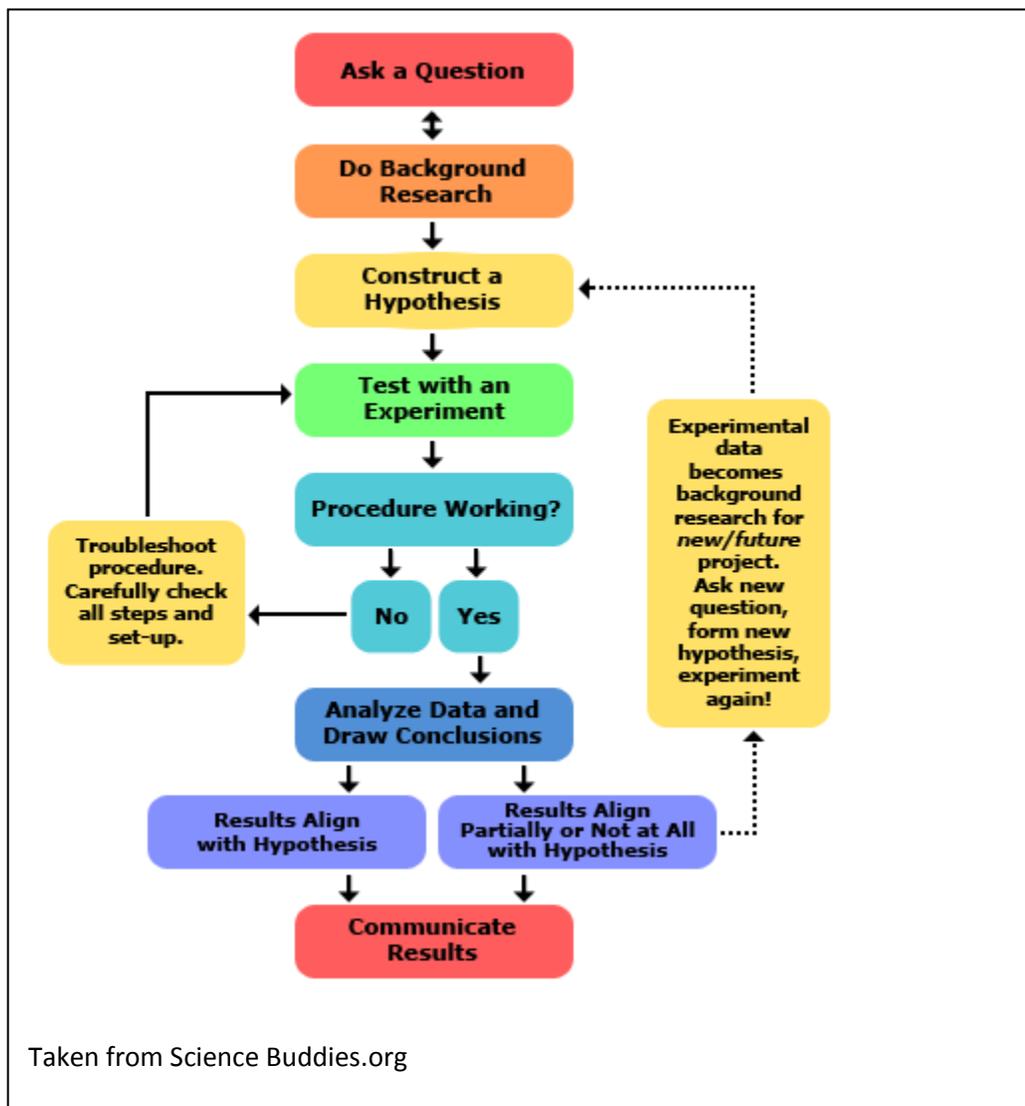
Procedure: What are the steps I must take to complete experiment?

Materials: What supplies do I need? What measurements? Am I clear?

Results: What happened in the experiment

Data: Record number of times experiment completed and any and all related data.

Conclusion: What did this prove to me? Was my hypothesis true or false?



Science Writing Prompts

Science Portfolio Rubric

Items that must be included for grade: