

Learning Objectives – “Students can...”

1. Analyze new concept vocabulary – Vocabulary Enhancement (BW)
2. Complete thermal labs project: data collection & qualitative description

Assessment

In-class completion of the notebook/bell work
Complete thermal labs project: data collection & qualitative description

Homework

1. Complete Thermal Project Data Collection & Qualitative Description – 10/30
2. Complete BW vocabulary (5 terms) – 10/31
4. Science Fair - Data Collection – 11/7

Reminders / DO NOT COPY

SCIENCE FAIR CALENDAR

Model notebook entries can be found below at the Teacher’s NB. Use this resource to keep your notebook accurate.

Bell work

Using the vocabulary list provided at your seat: *Complete the five starred* terms*

For each term on the list you may do one of the following:

- Copy
- Summarize
- Provide an example

Incomplete or incorrect vocabulary will be scored accordingly.

No pictures – Text only

***Vocabulary assignments must be complete prior to notebook assessments – please plan/prepare accordingly.*

Linked Documents and Class Resource

[Teacher’s NB 10/29](#)

Keep Your Cool - Thermal Competition Project ↓

Vocabulary 5-1² ↓

District Content Descriptor:

Conservation of Energy and Energy Transfer - The amount of energy transfer needed to change the temperature of a matter sample by a given amount depends on the nature of the matter, the size of the sample, and the environment. (07-PS3-4) - Energy is spontaneously transferred out of hotter regions or objects and into colder ones. (07-PS3-3)

Temperature is a measure of the average kinetic energy of particles of matter. The relationship between the temperature and the total energy of a system depends on the types, states, and amounts of matter present. (07-PS3-3)

*Fayette County
 2018-19
 District Content Map*

Date: October 30, 2018

School Day: 050

Learning Objectives – “Students can...”

1. Analyze and respond to our weekly Science Article: Climate Science for Kids (BW)
2. Complete thermal labs project graphing & conclusion / NEWS LETTER!

Assessment

In-class completion of the notebook/bell work
Complete thermal labs project graphing & conclusion – NEWS LETTER!

Homework

1. Thermal project graph & conclusion – 10/30
2. Complete BW vocabulary (5 terms) – 10/31
3. Science Fair - Data Collection – 11/7

Reminders / DO NOT COPY

SCIENCE FAIR CALENDAR

Model notebook entries can be found below at the Teacher’s NB. Use this resource to keep your notebook accurate.

Bell work

Using good-practice reading techniques, read this week’s science article. When you finish reading, complete the article questions below.

1. What did 13-year old Georgia Hutchinson invent?
2. How much money did she win?
3. What fields of science are selected for these awards?
4. How does her invention improve current solar technology?
5. Why do you think these fields of science get more attention – and more money than others?

Linked Documents and Class Resource

[Teacher’s NB 10/30](#)

[Science Article: Science Fair Pays](#)

[Keep Your Cool - Thermal Competition Project](#) ↓

[Vocabulary 5-1²](#) ↓

[Science Daily – News Letter](#)

District Content Descriptor:

Construct, use, and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon. (07-PS3-5)

Temperature is a measure of the average kinetic energy of particles of matter. The relationship between the temperature and the total energy of a system depends on the types, states, and amounts of matter present. (07-PS3-3)

Fayette County
2018-19
District Content Map

Week 12: October 29 – November 2, 2018

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Date: October 31, 2018

School Day: 051

Learning Objectives – “Students can...”

1. Use critical thinking to solve a problem. (BW)
2. Population Study 101: “Girls vs. Boys” – Testing Day 1

Assessment

In-class completion of the notebook/bell work
Population Study 101: “Girls vs. Boys” – Testing Day 1

Homework

1. Complete Part 1: Gender Response Tests / Data Collection – 11/1
2. Quiz 10: Labs & Notebook Concepts – 11/2
3. Science Fair - Data Collection – 11/7

Reminders / DO NOT COPY

SCIENCE FAIR CALENDAR

Model notebook entries can be found below at the Teacher’s NB. Use this resource to keep your notebook accurate.

Bell work

Complete today’s challenge question in the notebook. When you finish, **record your answer on a small piece of paper and place it in the solutions chest at the front of the room.**

Based on the data description below, which type of graph should be used?

“A population study containing 100 people – How many are left handed vs. right handed, or ambidextrous?”

Linked Documents and Class Resource

[Teacher’s NB 10/31](#)

[Population Study 101: Lab Series](#)

District Content Descriptor:

Construct, use, and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon. (07-PS3-5)

Modeling in 6–8 builds on K–5 and progresses to developing, using and revising models to describe, test, and predict more abstract phenomena and design systems - **Develop a model to describe unobservable mechanisms.** (07-PS3-2)

Science Fair – Best Practices Modeling Sequence / Population & Behavior Studies

*Fayette County
2018-19
District Content Map*

Week 12: October 29 – November 2, 2018

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Learning Objectives – “Students can...”

- 1. Analyze and respond to the YouTube - Q Review. (BW)
- 2. Population Study 101: “Girls vs. Boys” – Testing Day 2

Assessment

In-class completion of the notebook/bell work
Population Study 101: “Girls vs. Boys” – Testing Day 2

Homework

- 1. Complete Part 2: Gender Response Tests / Data Collection – 11/5
- 2. Quiz 10: Labs & Notebook Concepts – 11/2
- 3. Science Fair - Data Collection – 11/7

Reminders / DO NOT COPY

SCIENCE FAIR CALENDAR

Model notebook entries can be found below at the Teacher’s NB. Use this resource to keep your notebook accurate.

Bell work

YouTube Science – Watch the video and respond to the questions below.

I chose to show you this video so you could begin to understand what science fair has become to those who are passionate about solving problems.

What are you passionate about – What motivates you?



YouTube Video Link – Science Fair: The Movie

Linked Documents and Class Resource

[Teacher’s NB 11/1](#)

[Population Study 101: Lab Series](#)

[Science Video: SCIENCE FAIR – The Movie](#)

District Content Descriptor:

Construct, use, and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon. (07-PS3-5)

Modeling in 6–8 builds on K–5 and progresses to developing, using and revising models to describe, test, and predict more abstract phenomena and design systems - **Develop a model to describe unobservable mechanisms.** (07-PS3-2)

Science Fair – Best Practices Modeling Sequence / Population & Behavior Studies

*Fayette County
2018-19
District Content Map*

Date: November 2, 2018

School Day: 053

Learning Objectives – “Students can...”

1. Share ideas by writing a paragraph in their science journal. (BW)
2. Quiz 10: Labs & Notebook Concepts

Assessment

In-class completion of the notebook/bell work
Quiz 10: Labs & Notebook Concepts

Homework

1. Complete Part 2: Gender Response Tests / Data Collection – 11/5
2. Science Fair - Data Collection – 11/7

Reminders / DO NOT COPY

SCIENCE FAIR CALENDAR

Model notebook entries can be found below at the Teacher’s NB. Use this resource to keep your notebook accurate.

Bell work

Science Journal: Day 9

Complete a paragraph containing no less than five additional sentences that continue the lead below.

“I have now completed 1/3 of my 7th grade year...”

Linked Documents and Class Resource

[Teacher’s NB 11/2](#)

*Quiz 10-1**

District Content Descriptor:

Construct, use, and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon. (07-PS3-5)

Modeling in 6–8 builds on K–5 and progresses to developing, using and revising models to describe, test, and predict more abstract phenomena and design systems - **Develop a model to describe unobservable mechanisms.** (07-PS3-2)

Science Fair – Best Practices Modeling Sequence / Population & Behavior Studies

*Fayette County
2018-19
District Content Map*

Week 12: October 29 – November 2, 2018

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Vocabulary 5-1²


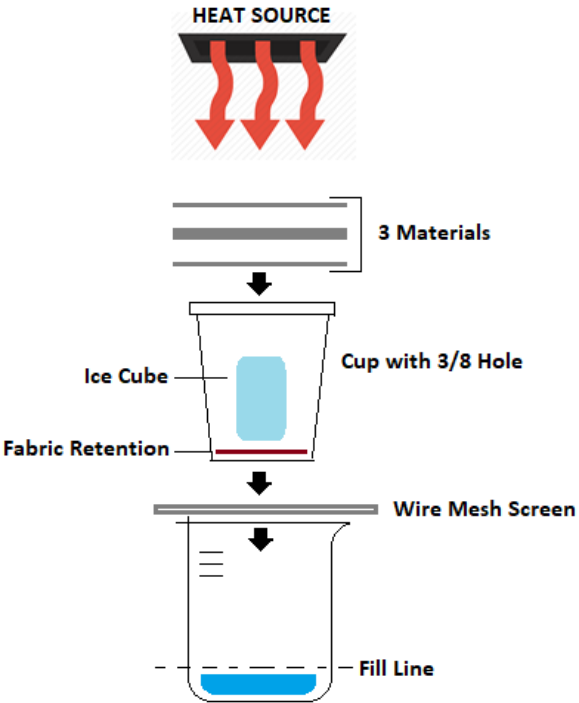
You are expected to familiarize yourself with these concept terms – complete the terms that are (*) as part of the weekly bell work.

Vocabulary Term	Definition
Analysis*	a detailed examination of anything complex in order to understand its nature or to determine its essential features: a thorough study.
Convection	the movement caused within a fluid by the tendency of hotter and therefore less dense material to rise, and colder, denser material to sink under the influence of gravity, which consequently results in transfer of heat
Demographic*	is the study of a population based on factors such as age, race and gender
Pictograph	is a graph that shows numerical information by using picture symbols or icons to represent data sets
Pie Chart	a type of graph in which a circle is divided into sectors that each represent a proportion of the whole.
Qualitative Data	relating to, measuring, or measured by the quality of something rather than its quantity – results reported by description
Quantitative Data	relating to, or involving the measurement of quantity or amount – results reported in number
Reflection	the throwing back by a body or surface of light, heat, or sound without absorbing it
Scatter Plot*	a graph in which the values of two variables are plotted along two axes, the pattern of the resulting points revealing any correlation present.
Statistics*	a branch of mathematics dealing with the collection, analysis, interpretation, and presentation of masses of numerical data
Survey*	to take a general or comprehensive view of or appraise, as a situation, area of study, etc.

S.O.S – ICE: Thermal Shield Project

In the previous thermal lab(s) we were concerned with “thermal capacity” or how much energy could be absorbed by a substance. In the final thermal-lab we look at the opposite phenomena – insulation from energy.

Read each step and complete the planning, testing and data-collection for the thermal project.

Part 1 – Select a vessel	Part 2 – Select 3 materials	Part 3 – Lab Test / Data Collection
<p>Paper, Plastic or Styrofoam</p>  <p>Which cup material will best serve to insulate or reflect the ice from the thermal energy?</p>	<ul style="list-style-type: none"> - Aluminum Foil - Burlap Square - Bright Construction Paper - Dark Construction Paper - Fabric Square - Plastic Wrap - Wax Paper <p>Examine each of the materials and predict their thermal properties/value</p> <ul style="list-style-type: none"> • What have we learned about thermal capacity? • What phenomena have we observed in our everyday lives that might help us create a better thermal barrier? 	
<p>All cups provided will have a 3/8” hole and a piece of fabric in the bottom as a retention/release for the melt water.</p>	<p>These materials will be placed over the top of the container as a thermal shield to keep the ice from melting.</p>	<p>Each design will be lab tested under a 100w heat lamp. We will time the melt of the ice and how long it takes to get to the measured fill line on the catch-beaker.</p>
<p>THE OBJECTIVE: Using your understanding of thermodynamics, design a thermal barrier to keep your ice from melting. This is a competitive lab project and the rewards for success will be based on the length of time it takes you to reach the fill line on the catch-beaker.</p>		