Date: September 24. 2018 | **School Day:** 026

Learning Objectives – "Students can…"

1. Analyze new concept vocabulary – Vocabulary Enhancement (BW)

2. Complete Lab 3-1 Project: Gravity Coaster / Final Build Day 3

Assessment

In-class completion of the notebook/bell work
Complete Lab 3-1 Project: Gravity Coaster

Homework

1. Complete gravity coaster for testing– 9/25

2. Notebook Assessment 3-1 / Teacher's Review – 1st & 2nd Period 9/25, 3rd & 6th 9/26, 7th 9/27

3. Complete BW vocabulary (5 terms) – 9/26

Reminders / DO NOT COPY
Turn in $15.00 lab supplies fee

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 9/24* | *Gravity RC Handout ↓* | *Vocabulary 3-1 ↓*

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)

Connections to Nature of Science
Scientific Knowledge is Based on Empirical Evidence
Science knowledge is based upon logical and conceptual connections between evidence and explanations (07-PS3-4)

Fayette County 2018-19 District Content Map

Date: September 25. 2018 | **School Day:** 027

Learning Objectives – "Students can…"

1. Analyze and respond to our weekly Science Article: Fail, Fail Again (BW)

2. Complete Lab 3-1 Project: Gravity Coaster / Testing – Day 1

Assessment

In-class completion of the notebook/bell work
Complete Lab 3-1 Project: Gravity Coaster / Testing – Day 1

Homework

1. Complete RC testing for remaining groups – 9/26

2. Notebook Assessment 3-1 / Teacher's Review – 3rd & 6th 9/26, 7th 9/27

3. Complete BW vocabulary (5 terms) – 9/26

Reminders / DO NOT COPY
Turn in $15.00 lab supplies fee

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 is predicted to occur over the next 80 years that will make Miami uninhabitable? Provide two examples from the article.**

2. **After reading the article – Why is global warming a controversy?**

3. **Even if we can't stop climate change, what should be done to save the city of Miami?**

4. **In your opinion – Why aren't more people concerned about climate change?**

Linked Documents and Class Resource

Teacher's NB 9/25

Science Article: Bye - Bye Miami

Gravity RC Handout ↓

Vocabulary 3-1 ↓

NB Assessment Rubric

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)

Models can be used to represent systems and their interactions – such as inputs, processes, and outputs – and energy and matter flows within systems. (07-PS3-2) When two objects interact, each one exerts a force on the other that can cause energy to be transferred to or from the object. (07-PS3-2)

Fayette County
2018-19
District Content Map

Date: September 26. 2018 | **School Day:** 028

Learning Objectives – "Students can…"

1. Use critical thinking to solve a problem. (BW)

2. Complete Lab 3-1 Project: Gravity Coaster / Testing – Day 2

Assessment

In-class completion of the notebook/bell work
Complete Lab 3-1 Project: Gravity Coaster / Testing – Day 2

Homework

1. Notebook Assessment 3-1 / Teacher's Review – 7th 9/27

2. Quiz 6-1: Labs & Notebook Concepts – 9/28

3. Science Fair Topics / Model Observation & Question – 10/3

Reminders / DO NOT COPY

Science Fair Projects are due in class – 11/26

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.

All matter is made up of smaller moving particles – Observe the diagram below, which of the following has the <u>fastest</u> moving particles, and therefore the <u>most</u> potential energy?

Linked Documents and Class Resource *Teacher's NB 9/26* *Gravity RC Handout ↓* *NB Assessment Rubric*

SCIENCE FAIR LINK!

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)

Connections to Nature of Science
Scientific Knowledge is Based on Empirical Evidence
Science knowledge is based upon logical and conceptual connections between evidence and explanations (07-PS3-4)

Fayette County 2018-19 District Content Map

Date: September 27. 2018 | **School Day:** 029

Learning Objectives – "Students can…"

1. Analyze and respond to the YouTube - Q Review. (BW)

2. Lab 4-1 / Thermal Energy & Density – A Global Climate Crisis

Assessment

In-class completion of the notebook/bell work
Lab 4-1 – Observe & Write a Hypothesis

Homework

1. Quiz 6-1: Labs & Notebook Concepts – 9/28

2. Complete Lab 4-1 Question & Hypothesis – 10/1

3. Science Fair Topics / Model Observation & Question – 10/3

Reminders / DO NOT COPY

Science Fair Projects are due in class – 11/26

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.

As you observe

1. **We are going to watch two videos that attempt to explain climate change and global warming. At the conclusion of each write down how the video made you feel – Once you have seen both compare the two videos by making a Venn diagram listing similarities and differences.**


YouTube Video Link – PAPER RC MODEL

Linked Documents and Class Resource

Teacher's NB 9/27 | *SCIENCE FAIR LINK!* | *NB Assessment Rubric*

YouTube Science – Global Warming Video 2 | *YouTube Science – Global Warming Video 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)

PS3.A: Definitions of Energy

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),(07-PS3-4)

Fayette County 2018-19 District Content Map

Date: September 28. 2018	**School Day:** 030

Learning Objectives – "Students can…"	**Assessment**
1. Share ideas by writing a paragraph in their science journal. (BW) 2. Quiz 6-1: Labs & Notebook Concepts	In-class completion of the notebook/bell work Quiz 6-1: Labs & Notebook Concepts

Homework	**Bell work**
1. Science Fair Topics / Model Observation & Question – 10/3 Reminders / DO NOT COPY **Science Fair Projects are due in class – 11/26** **Model notebook entries** can be found below at the Teacher's NB. Use this resource to keep your notebook accurate.	Science Journal: Day 6 Complete a paragraph containing no less than five additional sentences that continue the lead below. **"Science fair is so…"**

Linked Documents and Class Resource	*Teacher's NB 9/28*	*Quiz 6-1**	*SCIENCE FAIR LINK!*

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)

PS3.A: Definitions of Energy

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),(07-PS3-4)

Fayette County
2018-19
District Content Map

Vocabulary 3-1 – Climate Science / Thermal Energy

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***
Atmosphere	***The thin layer of gases that surround our planet***
*Green House Effect**	***This occurs when thermal energy from the sun becomes trapped in the Earth's lower atmosphere due to dense gases that accumulate above.***
*Green House Gas**	***These are identified as dense insulation gases found in the Earth's atmosphere (carbon dioxide, methane, water vapor, ozone, etc.)***
Anthropogenic	***Man-made or caused by human activity***
*Thermal Energy**	***Heat***
Climate Change	***Is the gradual fluctuation of our planets temperature and weather patterns over long periods of time.***
*Global Warming**	***Is a powerful heating process that occurs due to changes in the Earth's atmosphere, oceans, land and trapped solar/thermal energy.***
Carbon Sinks	***These are massive stores of carbon dioxide found on our planet. (Forests, under-sea organics, etc.)***
Weather	***The changing conditions on the surface of our planet at any given point in time***
Industry	***Human activity – Focusing on the processing of raw materials and manufacturing***
Biogeochemical cycles	***The processes by which chemical substances and compounds move through the Earth's systems (hydrologic, geologic, etc.)***
*Controversy**	***A disagreement – Or an argument that has more than one varied opinion***

1. **We are going to watch two videos that attempt to explain climate change and global warming. At the conclusion of each write down how the video made you feel – Once you have seen both compare the two videos by making a Venn diagram listing similarities and differences.**

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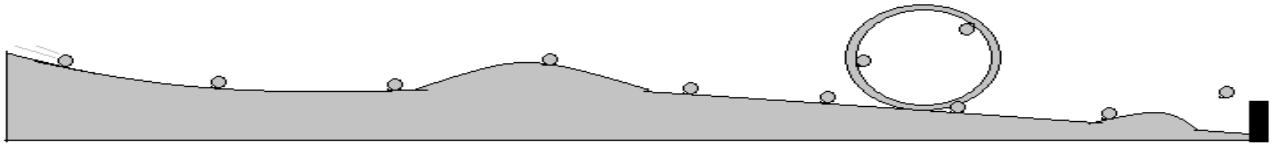
Hands on Physics – Activity 3-5
A Model Rollercoaster



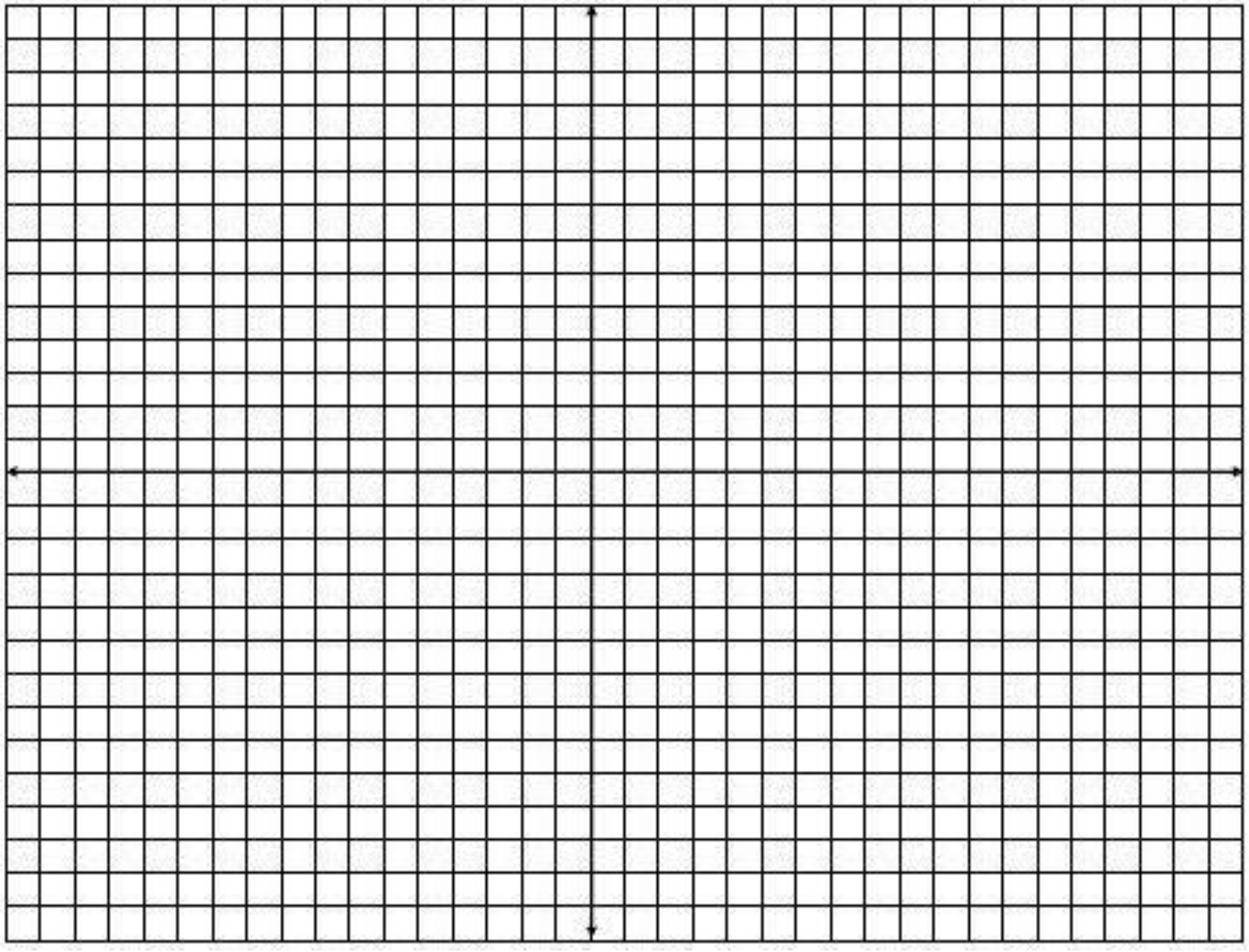
Description: This activity requires creative engineering and a sound understanding of potential and kinetic energy systems. The models you are building depend on gravity as a force to move an object. While there are many different ways to achieve this, one of the critical elements is that the object makes it through all essential features and to the end of the model. You can use this rubric to help plan appropriately – Some features are worth more than others, so placing them at points of greatest kinetic energy are important to passing.

Feature	Description	Points	X (Used)	Assigned	Total Points / Score
The Drop	This is typically found at the beginning of a model – it has maximum potential and gains maximum kinetic energy	**5**		The goal of this activity is to **score 75 points.** This can be done with any combination of the features described (left) ***Elements such as the drop can only occur at the start of the model – therefore the model will have only one.* **All models will have a single release point – the object must make it through all features without assistance* **Creative themes will be rewarded with additional bonus points – SEE "Zombie Land" Sample*	
Min – Hill	A small incline, the object must successfully move over and not return	**10**			
Max – Hill	A larger incline, the object must successfully move over and not return	**15**			
Inversion	The object must use its mass to maintain contact with the track – *anytime the object is on a side rail or experiences a funnel*	**20**			
Loop/Full Inversion	The object must use its mass to complete a full inversion of gravity – *the object must travel up-side-down*	**25**			
Motion Obstacle	Any obstacle that demonstrates an act of force and results in motion aside from the object	**25**			
Jump	The object must leave and return to the model as a demonstration of control – *No points are scored when this occurs accidentally*	**25**			

This is a Think/Pair/Share activity – You may have a partner if you choose, but all partners will share the same grade regardless of work completion.

Name(s) _____

Lab 3-5 Planning & Assessment: This page needs to have a labeled illustration of your model. This will be used for building and assessment.



As you complete your planning you should always keep in mind that in order to overcome an obstacle you must have a balanced system of potential and kinetic energy.