

**Teacher(s):** Mrs. Breazeale & Ms. DeBlanc

**Week of:** May 6, 2024

**Subject/Grade:** 7<sup>th</sup> /Grade Math

**Lesson Plan Title:** The Green Island Week 1

**Domains:** NS, RP, EE, G, & SP

**Cross Curricular Project –** Cyber Foundations, ELA, History, & Science

## The "Green" Island - Week 1

**ESSENTIAL QUESTION:** What choices will I make to create a civilization with a small carbon footprint and how will these choices benefit all life on Earth?

**PROJECT OBJECTIVE:** The students will be able to make choices to create a civilization with a small carbon footprint and explain how these choices benefit all life on Earth by calculating carbon footprints and designing a sustainable society.

**PROJECT ASSESSMENT:** Students will create a presentation that includes their calculations for carbon footprints of different options for food/agriculture, transportation, and electricity. They will also present their society design to the committee, showcasing how they plan to maintain a small carbon footprint while providing for 1,000 individuals.

**WEEKLY MATH FOCUS STANDARDS:** 7.NS.3, 7.RP.1, 7.RP.2, 7.RP.3, 7.G.1, 7.EE.3 (See attached for standard descriptions.)

### REMEDIATION & ENRICHMENT

Skill(s) & Activity	Days
<p><b>Positive 25</b>  <i>TTW</i> provide frequent check-ins while these students complete parts 1 and 2 of the green island project. Sentence starters and tips to calculate unit rate are included in the Google Slide presentation of which students will be working.  <i>TSW</i> receive accommodations if mandated while taking their Math DCA. <i>TTW</i> cue to stay on task if needed.  <i>Teacher 1 will (T2W)...</i> hold mini conferences to discuss any misconceptions on their math test.</p>	<p>M, F  W  R</p>
<p><b>Bubbles</b>  <i>TTW</i> monitor students to ensure they are on track to success. Sentence starters and tips to calculate unit rate are included in the Google Slide presentation of which students will be working.  <i>T1W</i> discuss choices and test taking strategies used on their math DCA.</p>	<p>M, F  R</p>
<p><b>T25</b>  <i>TW</i> monitor students to ensure they are on track to success. Sentence starters and tips to calculate unit rate are included in the Google Slide presentation of which students will be working. Ask HOT questions regarding choices made for their design of the green island.  <i>T1W</i> discuss choices and test taking strategies used on their math DCA and ask HOT questions regarding the students' missed questions.</p>	<p>M, F  R</p>

## Weekly Overview

*Monday - May 6, 2024*

**Daily Objective(s): TSWBAT...**

- calculate unit rates for tons of carbon per person for food & agriculture, transportation, and electricity.
- Make decisions when selecting services for “green” island residents based on the data in order to keep a minimum carbon footprint.
- In writing, formally and completely justify the decisions made for the future residents.

**\*\*\*At least 2 out of 3 of the lesson objectives will be met by the end of the class period.**

**I will...**

- Calculate unit rates of tons of carbon per person for food & agriculture, transportation, and electricity.
- Analyze & utilize my data to make informed decisions on what types of food, transportation, and electricity will be provided to the future residents of the green island.
- Keep the carbon footprint to a minimum.
- Utilize writing strategies while justifying decisions made for the residents of the “green” island while being mindful of grammar, punctuation, and spelling.

*Tuesday - May 7, 2024*

**Daily Objective(s): TSWBAT...**

- Complete two teacher assigned iReady lessons (“Simulations of Compound Events” and “Equivalent Linear Expressions”) by listening carefully to the independent instruction and working out problems on paper by the end of the class period with at least 80% accuracy.

**I will...**

- Design and use a simulation to observe the frequencies of compound events.
- Apply the distributive property to expand and factor linear expressions with rational coefficients.
- Apply addition properties to generate equivalent expressions.

*Wednesday - May 8, 2024*

**Daily Objective(s): TSWBAT...**

- Utilize mathematical skills, vocabulary, and strategies by thoroughly analyzing and solving a variety of grade level, real-world mathematical problems presented on the April DCA with 75% accuracy.

**On the April DCA, I will...**

- Record formulas, vocabulary, or any other helpful information on my scratch paper before starting the test.
- Quickly scan and review all questions before starting any calculations.
- Underline/highlight every question from every problem.
- Circle/highlight every number and key word.

- Use a variety of test taking strategies and come to class Thursday prepared to justify decisions on 3 out of 4 select questions from the April DCA.

- Mentally justify which answer choices are too large or too small while making eliminations when applicable.
- Solve quick and easy problems first followed by text entry questions.
- Use scratch paper to work out problems on paper.
- Review and rework problems to check answers if time allows.

*Thursday - May 9, 2024*

**Daily Objective(s): TSWBAT...**

- Utilize mathematical skills, vocabulary, and strategies by thoroughly analyzing missed problems from the April DCA.
- Review and discuss test taking strategies with peers and teachers using mathematical vocabulary.
- Prepare to justify decisions on 3 out of 4 select questions from the April DCA.

***I will...***

- Review and study test taking strategies.
- Discuss and justify which answer choices should have been eliminated.
- Rework missed problems by writing it out on scratch paper while using teacher notes.
- Justify the use of test taking strategies on 3 out of 4 select questions from the April DCA to the teacher.

*Friday - May 10, 2024*

**Daily Objective(s): TSWBAT...**

- In writing, formally and completely justify the decisions made for the future residents. (Objective from Monday)
- Create a rough draft sketch of the island map that illustrates chosen services and other team decisions.
- Create a scale drawing of the team's map sketch and utilize color.
- Create a legend that is colorful and accurate in order to interpret the team's map.

***\*\*\*At least 3 out of 4 of the lesson objectives will be met by the end of the class period.***

***I will...***

- Utilize writing strategies while justifying decisions made for the residents of the "green" island while being mindful of grammar, punctuation, and spelling.
- Quickly sketch the island map and determine the name of the "green" island.
- Create a neat and colorful scale drawing (final draft) of the team's map rough draft.
- Create a legend that is colorful and accurate in order to interpret the team's map.

**Monday: May 6, 2024**

**Focus Questions:**

1. How do I calculate unit rate?
2. What equation can I use to calculate tons of carbon per person?
3. What strategies will I use to keep the carbon footprint of my “Green” Island to a minimum?

**Bell Ringer:** Describe the perfect civilization in exactly 3 sentences.

**Opening:** The teacher will introduce the scenario of designing a sustainable society on a newly discovered island., and ask students how they think their everyday choices impact the environment and what choices they would make to reduce carbon footprint

**Teacher Input:**

- Explain the concept of a carbon footprint and its importance in sustainability
- Discuss the impact of food/agriculture, transportation, and electricity on carbon footprint
- Address the common misconception that individual actions do not significantly impact the environment.
- Give each team a project hand-out and explain.

**Guided Practice:**

- Work through examples of calculating carbon footprint for different options
- Scaffold questioning from simple to complex scenarios
- Monitor student performance by circulating and providing feedback during practice

**Independent Practice:**

- Assign students to design their sustainable society on paper or digitally
- Provide guidelines for calculating carbon footprints and creating a blueprint for land use
- Encourage students to think critically about choices to minimize the carbon footprint

**Closing:**

- Have students share one thing they learned about creating a sustainable society
- Summarize the key points discussed in the lesson

**Extension Activity:** For early finishers, ask them to research real-world examples of sustainable communities and compare them to their own designs

**Homework:** Research and write a short reflection on one lifestyle change that could reduce an individual's carbon footprint

**Tuesday: May 7, 2024**

**Focus Questions:**

- 1) How do I design and use a simulation to observe the frequencies of compound events?
- 2) How do I apply the distributive property to expand and factor linear expressions with rational coefficients?
- 3) How do I apply addition properties to generate equivalent expressions?

**Bell Ringer:** TSW get notebook paper, pencil, calculator, and login to iReady.

**Independent Practice: (~50 minutes)**

*The student will...*

- Complete two teacher assigned iReady lessons (“Simulations of Compound Events” and “Equivalent Linear Expressions”)
- Take notes of important vocabulary and enough examples to understand the concepts..
- Obtain at least 45 minutes.

**Teacher Interventions:**

*The teacher will...*

- NOT help students with the lesson.
- Only help students on their quiz if they have copied the necessary vocabulary and 3 examples from the lesson.

**Assessment:** 2 passed iReady math lessons

**Wednesday: May 8, 2024**

**Focus Question:** What mathematical vocabulary, strategies, and skills can I use to score proficiency on the April DCA?

**Independent Practice:** *The student will...*

**Before the test...**

- Gather materials: calculator, pencil, reference sheet, computer, and scratch paper.
- Login to edulastics.com.
- Choose 7th Grade Math April DCA.
- Begin your test.

**During the test...**

- Answer all the questions you know how to answer first.
- Work out problems on scratch paper.
- Use your time wisely. (Everyone should spend at least 45 minutes working on this test.)

**After the test...**

- Login to iReady and finish the assigned lessons from yesterday. (See back board.)
- Finish any missing parts of the "Green" Island project.

**Closure:** Ask students to move computers to the next student's desk. Put all materials away, and throw all trash away. Thank students for their hard work.

**Assessment:** April DCA

**Thursday: May 9, 2024**

**Focus Questions:**

- 1) How will I incorporate studying and practicing mathematics into my daily routine?
- 2) How can I clearly justify which answer choices should have been eliminated when holding a discussion with my classmates and teacher?

**Guided/Independent/Partner Practice**

*The student will...*

- Review and analyze their graded April DCA.
- Utilize mathematical skills, vocabulary, and strategies by thoroughly analyzing missed problems from the April DCA.
- Review and discuss test taking strategies with peers and teachers using mathematical vocabulary.
- Prepare to justify decisions on 3 out of 4 select questions from the April DCA.
- Review and study test taking strategies.
- Discuss and justify which answer choices should have been eliminated.
- Rework missed problems by writing it out on scratch paper while using teacher notes.
- Justify the use of test taking strategies on 3 out of 4 select questions from the April DCA to the teacher.

**Meanwhile...**Ms.DeBlanc will hold mini conferences with SPED and B25.

- TTW will finish inviting individual students to her desk to discuss their most recent MPT and clear up any misconceptions and offer support.

**STUDENT REFLECTION/EXIT TICKET:**

- *The student will* complete an exit ticket based on the most missed question(s).
- The teacher will use this data to determine which students need extra support.

**MATERIALS:** Graded tests

**ASSESSMENT(S):** Teacher observation, exit tickets

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**Friday: May 26, 2023**

**Focus Questions:**

- 1) What procedure can I utilize to create a scale drawing of my green island map?
- 2) What is a legend and why do I need one?

**Anticipatory Set:** *The student will* grab any and all materials, join their team, login to Google classroom and pull up work for parts 1 and 2 of the green island project.

**Teacher Input:** *The teacher will...*

- Present the lesson objectives and goals.
- Explain how to complete "Part 3." of the green island project.
- Provide examples of maps and legends.
- Review scale drawings and scale factor.

**Independent Team Work:** *The students will...*

- In writing, formally and completely justify the decisions made for the future residents. (Objective from Monday)
- Create a rough draft sketch of the island map that illustrates chosen services and other team decisions.
- Create a scale drawing of the team's map sketch and utilize color.
- Create a legend that is colorful and accurate in order to interpret the team's map.

**MATERIALS:** Map and legend templates, colored pencils, crayons, rulers, etc., and students' completed parts 1 and 2.

**ASSESSMENT(S):** Teacher observation, exit tickets



Mississippi College and Career Readiness Standards for 7<sup>th</sup> Grade Mathematics

<b>The Number System</b>	<p>7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction with the number line.</p> <p>7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p>7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.</p>
<b>Ratios &amp; Proportions</b>	<p>7.RP Analyze proportional relationships and use them to solve real-world and mathematical problems.</p> <p>7.RP.1 Compute unit rates associated with ratios and fractions, including ratios or lengths, areas and other quantities measured in like of different units.</p> <p>7.RP.2 Recognize and represent proportional relationships between quantities.</p> <p>7.RP.2c. Represent proportional relationships by equations.</p> <p>7.RP.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, net amount after a discount, and sales tax produced by a percent change; and interest on debt.</p>
<b>Geometry</b>	<p>7.G.1 Solve problems involving geometric figures, including actual lengths and area of a scale drawing.</p>
<b>Expressions &amp; Equations</b>	<p>7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems.</p> <p>7.EE.3 Write an expression from a real world context possibly involving sales tax, tip, discount, gratuity, markup, selling price, perimeter, area, and volume.</p>
<b>Statistics &amp; Probability</b>	<p>7.SP.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample depend on the size of the sample, the randomness in the selection of the sample, and the nature of the population being sampled.</p> <p>7.SP.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) to generate a distribution of statistics (e.g., sample means, proportions) and use that distribution to estimate a population mean or proportion.</p>

**ACROSS CURRICULUM STANDARDS**

**ELA**

**SPEAKING & LISTENING**

**CCR.SL.1:** Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

**SL.7.1a** Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under **SL.7.1b** Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.

**SL.7.5** Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.

**SL.7.6** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

**LANGUAGE**

**CCR.L.1:** Demonstrate command of the conventions of standard English grammar and usage when writing (printing, cursive, or keyboarding) or speaking.

**CCR.L.2:** Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

**L.7.2b** Spell correctly.

**CCR.L.4:** Determine or clarify the meaning of unknown or multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.

**CCR.L.6:** Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

**L.7.6** Acquire and use accurately grade-appropriate general academic and domain specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

## **WRITING**

**W.7.2c** Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.

**W.7.2d** Use precise language and domain-specific vocabulary to inform about or explain the topic.

**W.7.4** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

**W.7.10** Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

## **SCIENCE**

### **Earth's Systems & Cycles**

**Conceptual Understanding:** Complex patterns in the movement of air and water in the atmosphere are major determinants of local weather. Global movements of water and its changes in form are propelled by sunlight and gravity. Variations in temperature drive a global pattern of interconnected currents.

Interactions between sunlight, oceans, atmosphere, ice, landforms, and living things vary with latitude, altitude, and local and regional geography. Weather is difficult to predict; however, large-scale patterns and trends in global climate, such as the gradual increase in average temperature, are more easily observed and predicted.

**E.7.9A** Students will demonstrate an understanding of how complex changes in the movement and patterns of air and water molecules caused by the sun, winds, landforms, ocean temperatures, and currents in the atmosphere are major determinants of local and global weather patterns.

**E.7.9A.1** Analyze and interpret weather patterns from various regions to differentiate between weather and climate.

**E.7.9A.2** Analyze evidence to explain the weather conditions that result from the relationship between the movement of water and air masses.

**E.7.9A.3** Interpret atmospheric data from satellites, radar, and weather maps to predict weather patterns and conditions.

**E.7.9A.4** Construct an explanation for how climate is determined in an area using global and surface features (e.g. latitude, elevation, shape of the land, distance from water, global winds and ocean currents).

**E.7.9A.5** Analyze models to explain the cause and effect relationship between solar energy and convection and the resulting weather patterns and climate conditions.

**E.7.9A.6** Research and use models to explain what type of weather (thunderstorms, hurricanes, and tornadoes) results from the movement and interactions of air masses, high and low pressure systems, and frontal boundaries.

**E.7.9A.7** Interpret topographic maps to predict how local and regional geography affect weather patterns and make them difficult to predict.