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Curriculum Template

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Range of Assessment Requirements

Tests - 2 (Unit Assessment, Ecosystem/Food Web project) Quizzes - 2-4 (lesson assessments) Homework / Classwork / Misc - 6-12	Tests - 2 (Unit Assessment, Water Cycle project) Quizzes - 2-4 (lesson assessments) Homework / Classwork / Misc - 6-12
Tests - 2 (Unit Assessment, Planet project) Quizzes - 2-4 (lesson assessments) Homework / Classwork / Misc - 6-12	Tests - 2 (Unit Assessment, Swimming Fish OR Bobbing Raisins project) Quizzes - 2-4 (lesson assessments) Homework / Classwork / Misc - 6-12

Deptford Township School District Grading Scale

Test (consistent in number and quality)	**50%**
Quiz	**30%**
Homework / Classwork / Misc.	**20%**

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	Unit 2 Watery Planet
Overarching Theme	This unit helps students develop the idea that water is a profoundly important natural resource, but one which requires surprising ingenuity to find and maintain.
Power/Anchor Standards and Evidence of Learning Non-negotiable Suggested	5-ESS2-2 *Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. [Assessment Boundary: Assessment is limited to oceans, lakes, rivers, glaciers, ground water, and polar ice caps, and does not include the atmosphere.]* 5-ESS2-1 *Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. [Clarification Statement: Examples could include the influence of the ocean on ecosystems, landform shape, and climate; the influence of the atmosphere on landforms and ecosystems through weather and climate; and the influence of mountain ranges on winds and clouds in the atmosphere. The geosphere, hydrosphere, atmosphere, and biosphere are each a system.] [Assessment Boundary: Assessment is limited to the interactions of two systems at a time.]* 5-ESS3-1 *Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment, caused the rise in global temperatures and address climate change issues.* 5-ETS1-1. *Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.* 5-ETS1-2. *Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.* 5-ETS1-3. *Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.*

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Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
• Students analyze and interpret data from world maps to determine the relative amounts of fresh, salt and frozen water. Students use mathematics and computational thinking to calculate areas on a map and graph values to compare and graph quantities of fresh, salt and frozen water on Earth. • Students are asked to determine where is the best place to settle a new town by considering features of the landscape and what they know about where to find water. Students obtain, evaluate and communicate information from different sources about topography, plants and soil to inform their decision. Students argue using evidence to justify where their town should be built.	**ESS2.C: The Roles of Water in Earth's Surface Processes Nearly all of Earth's available water is in the ocean.** • Water is our most basic human need. Despite the fact that Earth is a watery planet, Earth's water is mostly salt water--a form not fit to drink. Easily accessible fresh water is a surprisingly small amount by comparison. Of that fresh water, much of it is frozen in glaciers and ice caps. • Most people get their drinking water from water that's located underground, where there turns out to be a surprisingly large amount within structures called "aquifers." People use science ideas about the location of aquifers to make decisions about where to build	• Students use standardized units of area to compare the quantity of fresh, salt and frozen water on Earth. Students use proportional reasoning to represent quantities in their graph comparing different types of water. • Students reason about information they get about natural patterns to determine where underground water is most likely to be found. These patterns involve correlations between elevation and water depth as well as how plant and soil patterns can give clues about where drinkable water may be found. • Students reason about how the hydrosphere and atmosphere systems interact to produce rain. Students model the systems to explain how rain is created.

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	• Students create a model of the ocean and sky (hydrosphere and atmosphere). Students use the model to plan and carry out an investigation to determine how temperature influences evaporation and condensation. • Students define the problem that a town needs protection from flooding. They obtain and communicate information about different types of engineers and work as a team to design solutions using their different types of flood protection. Students use mathematics and computational thinking design a solution under budget	communities. **ESS2.A: Earth Materials and Systems** • Evaporation of ocean water is the ultimate source of rain, and thus all our easily accessible fresh water. (All water on Earth's surface is part of an interconnected system, the hydrosphere.) • Hurricanes start out as small storms over the ocean. As they move across the ocean, warm water evaporates into the storm cloud, making the hurricane grow bigger and bigger. Hurricanes bring tons of rain, flooding entire cities. Engineers design solutions to protect towns from extreme flooding.	• Students reason about how the hydrosphere and atmosphere systems interact to produce hurricanes and extreme flooding. They also consider the impact of hurricanes on the biosphere and geosphere system.

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Acquisition (knowledge, skills needed to understand)	Meaning (Why are the students learning this)	Transfer (Evidence of Learning and Performance Tasks)
Recite information to show knowledge of facts / The skills and information that the students need (recall) **Must Do** **Can Do**	Students make sense of the information they are given and why it is important / what meaning do they make of the **Must Do** **Can Do**	What are students going to do with the information / What is done with the information (apply, create, design, build…..) **Must Do** **Can Do**

Standards

Remaining standards of this unit (the rest of the content standards that aren't power standards)
Put the actual standard here, not just the number, so it's meaningful and accessible for teachers.

ELA/Literacy

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-ESS3-1)

RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-ESS2- 1),(5-ESS2-2)

W.5.8 Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. (5-ESS2-2)

RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-ESS3-1)

SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance

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the development of main ideas or themes. (5- ESS2-1),(5-ESS2-2)

Mathematics

Reason abstractly and quantitatively. (5-ESS2-1),(5-ESS2-2)

Model with mathematics. (5-ESS2-1),(5-ESS2-2)

5.G.A.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. (5-ESS2-1)

21st Century Life and Career Standards (copy these to each unit/marking period)

9.1 Personal Financial Literacy - This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers.

9.2 Career Awareness, Exploration, and Preparation - This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements.

9.3 Career and Technical Education - This standard outlines what students should know and be able to do upon completion of a CTE Program of Study.

21st Century themes and skills integrated into all content standard areas (N.J.A.C. 6A:8-1.1(a)3)

"Twenty-first century themes and skills" means themes such as global awareness; financial, economic, business, and entrepreneurial literacy; civic literacy; health literacy; learning and innovation skills, including creativity and innovation, critical thinking and problem solving, and communication and collaboration; information, media, and technology skills; and life and career skills, including flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, and leadership and responsibility.

Amistad Law: N.J.S.A. 18A 52:16A-88

Every board of education shall incorporate the information regarding the contributions of African-Americans to our

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	country in an appropriate place in the curriculum of elementary and secondary school students. **Holocaust Law: N.J.S.A. 18A:35-28** Every board of education shall include instruction on the Holocaust and genocides in an appropriate place in the curriculum of all elementary and secondary school pupils. The instruction shall further emphasize the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.
Enduring Understanding	**Unit** • • •
Essential Questions	**Unit** 2 Watery Planet • How much water is in the world? • When you turn on the faucet, where does the water come from? • Can we make it rain? • How can you save a town from a hurricane?
Differentiation and Support for Learners Non-negotiable Suggested **(additions made after consensus at district**	**Enrichment (specific to each unit, not copied and pasted the same in all units)** **Interventions (specific to each unit, not copied and pasted the same in all units)** • Structure lessons around questions that are authentic, relate to students' interests, social/family background

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PLC meetings)	and knowledge of their community. • Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling). • Provide opportunities for students to connect with people of similar backgrounds (e.g. conversations via digital tools such as Zoom/Google Meet, experts from the community helping with a project, journal articles, and biographies). • Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences). • Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understanding. • Use project-based science learning to connect science with observable phenomena. • Structure the learning around explaining or solving a social or community-based issue. • Provide ELL students with multiple literacy strategies. • Collaborate with after-school programs or clubs to extend learning opportunities. **Student Grouping Strategies**
<u>Resources</u> **Non-negotiable** **Suggested** **(additions made after consensus at district PLC meetings)**	**<u>Mystery Science</u>** • Readings on Mystery Science Website • Activities and Labs for lessons **<u>English Language Arts</u>** Students should use information from print and digital sources to build their understanding of energy and matter in ecosystems. As students read, they should use the information to answer questions, participate in discussions, solve problems, and support their thinking about movement of matter and the flow of energy through the organisms in an ecosystem. In this unit of study, students are also required to build models to describe the cycling of matter and the flow of energy in ecosystems. They can enhance their models using multimedia components, such as graphics and sound, and visual displays.

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Mathematics
In this unit students should:

- Use appropriate tools in strategic ways when making and recording observations of the living and nonliving components of an ecosystem.
- Model with mathematics when using tables, charts, or graphs to organize observational data.
- Reason abstractly and quantitatively when analyzing data that can be used as evidence for explaining how matter cycles and energy flows in systems.
- Convert among different-sized standard measurement units within a given measurement system and use these conversions to help explain what happens to matter and energy in ecosystems.

Technology (specific to each unit, not copied and pasted in all units)
(Must be student technology use for learning the content standards of the unit, list Technology Standard addressed in this box)

- For example: Chromebooks -student use for Gizmos site - 8.1 - Educational Technology

Technology Standards (for reference)
8.1 Educational Technology - All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

8.2 Technology Education, Engineering, Design, and Computational Thinking / Programming - All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Readings (specific to each unit, not copied and pasted in all units)

Manipulatives/Lab Activity Resources (specific to each unit, not copied and pasted in all units)

Career Ready Practices (specific to each unit, not copied and pasted in all units)

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	(List career ready practices that are applicable to the unit - when completing the document, please <u>remove</u> the CRP's that do not apply) • CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP3. Attend to personal health and financial well-being. • CRP4. Communicate clearly and effectively and with reason. • CRP5. Consider the environmental, social and economic impacts of decisions. • CRP6. Demonstrate creativity and innovation. • CRP7. Employ valid and reliable research strategies. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP9. Model integrity, ethical leadership and effective management. • CRP10. Plan education and career paths aligned to personal goals. • CRP11. Use technology to enhance productivity. • CRP12. Work productively in teams while using cultural global competence <u>21st Century Life and Career Standards (for reference)</u> **9.1 Personal Financial Literacy** - This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers. **9.2 Career Awareness, Exploration, and Preparation** - This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements. **9.3 Career and Technical Education** - This standard outlines what students should know and be able to do upon completion of a CTE Program of Study.
<u>Assessment</u>	**Formative (Assessment used by the individual teacher to gather feedback on student progress toward learning**

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Non-negotiable Suggested	targets.) (Name specific assessment for each unit, not copied and pasted/general in all units) Formative Assessment Students who understand the concepts are able to: • Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth • Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. • Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment. • Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. • Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. • Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.