

Why is the sky blue

Teacher: Allie Byrne

School:

Grade: First Grade

Date: June 28th 2022, 7:39 pm

Subject: Science

Lesson Duration: 60 minutes

Target Standard: The physical properties of water change.

Procedure

Time/Task	Description
<i>Preparation</i> (5 minutes)	Before the class arrives, post big question in the classroom and make sure 5 internet enabled devices are online. Prepare materials for group work: <ul style="list-style-type: none">• SOLE student organizer• Writing tools
<i>Introduction</i> (2 minutes)	<ul style="list-style-type: none">• Introduce SOLE process and review ground rules.• Introduce our big question to the class.• 5 groups (20 total students)• Students will self-organize into 5 groups (20 total students) .
<i>Investigation</i> (38 minutes)	Students investigate the answer to the big question using their group's device. Groups will share their work.
<i>Review</i> (10 minutes)	Each group will have 2 minutes to present their research to the class and discuss. Each group is expected to share their sources, present creatively, and not rely on notes.
<i>Exit Ticket</i> (10 minutes)	Each student will have 2 minutes to complete an exit ticket answering the big question individually.

Relevance & Rationale

Content Knowledge Objective	Introducing students to a new concept
21st Century Learning and Innovation Skills	<p>The SOLE process involves:</p> <ul style="list-style-type: none"> • Critical thinking and problem solving • Collaboration • Agility and adaptability • Initiative and entrepreneurialism • Effective oral and written communication • Accessing and analyzing information • Curiosity and imagination <p>All of which are important skills outlined in the Framework for 21st Century Learning.</p>

Assessment Criteria for Success

Active Engagement	Students will engage with the content as described by Schleety's Engagement Framework .
Critical Thinking	Students will engage with content at higher levels of Webb's Depth of Knowledge .
Communication	Students will present their findings to the class and share their sources.
Creativity	Students use creativity to address complex challenges and share their findings with the class.
Collaboration	Students work effectively with their groups and demonstrate flexibility.

Reflection

After the SOLE Session, I will reflect on the following questions:

- How effectively were students introduced to this new concept?
- Were students actively engaged during their investigation?
- What type of thinking were students doing during the SOLE session?
- Were students collaborating and listening to each other?
- How well were students using technology during this lesson?

Appendix 1 - Embedded ELA Standards

College & Career Readiness

- CCSS.ELA-LITERACY.CCRA.R.2 - Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
- CCSS.ELA-LITERACY.CCRA.R.7 - Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
- CCSS.ELA-LITERACY.CCRA.W.7 - Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
- CCSS.ELA-LITERACY.CCRA.SL.4 - Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

Reading: Informational Text

- CCSS.ELA-LITERACY.RI.1.2 - Identify the main topic and retell key details of a text.
- CCSS.ELA-LITERACY.RI.1.4 - Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
- CCSS.ELA-LITERACY.RI.1.5 - Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.
- CCSS.ELA-LITERACY.RI.1.7 - Use the illustrations and details in a text to describe its key ideas.
- CCSS.ELA-LITERACY.RI.1.8 - Identify the reasons an author gives to support points in a text.
- CCSS.ELA-LITERACY.RI.1.9 - Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).

Appendix 2 - Embedded Social Emotional Learning Standards

Self-Awareness

- A3.2.a - Seek help when faced with challenges or when frustrated with a task, skill or situation
- A4.2.a - Demonstrate confidence in the ability to complete simple tasks and challenges independently, while expressing positive attitudes towards self
- A4.3.a - Identify ways to respectfully advocate for basic personal needs

Self-Management

- B1.1.a - Identify personal behaviors or reactions when experiencing basic emotions
- B1.3.a - Identify and begin to use strategies to regulate emotions and manage behaviors
- B2.1.a - Identify goals for classroom behavior and academic success
- B2.3.a - Describe what action steps can be taken to reach a short-term goal
- B2.4.a - Discuss obstacles that can get in the way of reaching a goal and ideas for handling those obstacles
- B3.2.a - Explain how practice improves performance of a skill and can help in overcoming a challenge or setback

Social Awareness

- C2.1.a - Identify the purpose for having school-wide expectations and classroom rules
- C2.2.a - Identify characteristics of positive citizenship in the classroom and school
- C2.3.a - Perform activities that contribute to classroom, school and home, with adult involvement as needed
- C2.4.a - Identify and participate in activities to improve school or home
- C3.2.a - Participate in cross-cultural activities and discuss differences, similarities and positive qualities across all cultures and groups
- C3.3.a - Discuss the concept of, and practice, treating others the way you would want to be treated
- C4.1.a - Recognize social cues in different settings
- C4.2.a - Identify norms for various family and social situations
- C4.3.a - Recognize others' personal space and boundaries

Embedded Social Emotional Learning Standards (continued)

Relationship Skills

- D1.1.a - Identify and engage in positive communication skills
- D1.2.a - Practice giving and receiving feedback in a respectful way
- D1.3.a - Develop an awareness that people communicate through social and digital media
- D2.1.a - Demonstrate an awareness of roles in various relationships
- D2.2.a - Recognize the need for inclusiveness
- D2.3.a - Recognize that people may influence each other with words or actions
- D3.1.a - Identify common conflicts and describe possible causes
- D3.2.a - Recognize that there are various ways to solve conflicts and utilize these techniques to practice solving problems
- D3.3.a - Apply listening and attention skills to identify the feelings and perspectives of others

Responsible Decision-Making

- E1.1.a - Identify a problem or needed decision and recognize that there may be multiple responses
- E1.2.a - Identify strategies to solve a problem
- E2.1.a - Identify factors that can make it hard for a person to make the best decision in the classroom
- E2.3.a - Identify how personal choices will impact the outcome of a situation
- E3.1.a - Identify how certain actions can impact others
- E3.2.a - Recognize safe practices and actions
- E3.3.a - Recognize the need for group decisions that support a common goal
- E4.1.a - Recognize that new opportunities may have positive outcomes
- E4.2.a - Identify physical and emotional responses to unfamiliar situations
- E4.3.a - Identify examples of transitions and how they are a necessary and appropriate part of school and life

Appendix 3 - Schlecty's Levels of Engagement

The Schlecty Center on Engagement has produced a framework for measuring student engagement in the classroom. During your SOLE Session you will be able to take notes on student engagement, and you may find these distinctions to be a helpful guide.

Active Engagement

Students...

- See the SOLE as personally meaningful.
- Persist in the face of difficulty
- Emphasize perfection and "getting it right."

Strategic Compliance

Students...

- Only work on the SOLE if for a grade, prize, or your approval
- Aren't personally satisfied or interested by their work

Ritual Compliance

Students...

- Find no meaning in the SOLE
- Work only to avoid confrontation or discipline
- Work to satisfy the minimum requirement: "What do I have to do to get this over and get out?"

Retreatism

Students...

- Are disengaged and emotionally withdrawn
- Feel unable to do what is being asked or are uncertain about what they should do
- Sees little that is relevant to their life in the work

Rebellion

Students...

- Are actively disengaged and pursuing their own agenda
- Are acting out - and often encouraging others to rebel

Appendix 4 - P21 Framework

People in the 21st century live in a technology and media-driven environment, marked by various characteristics, including access to an abundance of information, rapid changes in technology tools, and the ability to collaborate and make individual contributions on an unprecedented scale. Effective citizens and workers of the 21st century must be able to exhibit a range of functional and critical thinking skills related to information, media and technology.

Information Literacy

- Access and evaluate information efficiently and effectively.
- Evaluate information critically and competently
- Use and manage information accurately and creatively for the issue or problem at hand
- Manage the flow of information from a wide variety of sources
- Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information

Media Literacy

- Analyze and Create Media
- Understand both how and why media messages are constructed, and for what purposes
- Examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors
- Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of media
- Understand and utilize the most appropriate media creation tools, characteristics and conventions
- Understand and effectively utilize the most appropriate expressions and interpretations in diverse, multi-cultural environments

ICT (Information, Communications and Technology) Literacy

- Apply Technology Effectively
- Use technology as a tool to research, organize, evaluate and communicate information
- Use digital technologies (computers, PDAs, media players, GPS, etc.), communication/networking tools and social networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy
- Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information technologies

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Appendix 5 - SOLE and Webb's Depth of Knowledge

Webb's Depth of Knowledge construct is a hierarchy, where every level describes a more complex level of thinking (Aungst, 2014). There are four levels to this hierarchy:

1. Recall and Reproduction
2. Skills and Concepts
3. Strategic Thinking
4. Extended Thinking

Each task can be categorized into one of these levels based upon the complexity of thinking required to complete said task (Aungst, 2014). Tasks requiring more than one mental step are categorized as Level 2: Skills and concepts. Tasks requiring planning, evidence, and more abstract thinking are Level 3: Strategic thinking tasks. Tasks requiring a synthesis of information from a multitude of sources are categorized as Level 4: Extended thinking.

[More information about Webb's Depth of Knowledge](#)