



<p>1. What is our purpose?</p> <p>1a) To inquire into the following:</p> <ul style="list-style-type: none"> ● transdisciplinary theme <p>How the World Works: An inquiry into the natural world and its laws; the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and on the environment.</p> <p>central idea</p> <p>Patterns and cycles are part of how the world functions and contribute to sustainability.</p>	<p>Class/grade: 1 Age group: 6-7</p> <p>School: Willard School code:7202</p> <p>Title: How the World Works (Patterns and Cycles)</p> <p>Teacher(s): Elaine Kaiteris, Marisela Figueroa, Dianne Cahir, Donna Irie, and Lindi Killen</p> <p>Date: 11/6/17-12/21//17</p> <p>Proposed duration: number of hours: 90 over number of weeks:6</p>
<p>1b) Summative assessment task(s):</p> <p>What are the possible ways of assessing students' understanding of the central idea? What evidence, including student-initiated actions, will we look for?</p> <p>Students will demonstrate their understanding of the central idea by developing a project/presentation of their choice about a cycle or pattern. Their project/presentation should include visual representations, written work and must be presented orally.</p> <p>Teacher will assess students' ability to describe a particular pattern, explain its: stages, causes and effects on the environment and people, and what might happen if the pattern or cycle changed.</p> <p>The students will reflect on all presentations in order to understand different types of patterns how they work, and how they affect the world and it's inhabitants.</p> <p>Student initiated actions: Throughout this unit, students will demonstrate the ability to take personal action such as:</p> <ul style="list-style-type: none"> ● Take care of the environment and not disrupt animal and plant cycles by their actions ● Become more aware of how essential patterns are related to sustainability ● Research patterns and cycles further on their own time ● Look for patterns in other areas such as home, community, or the world ● Become more excited about learning by understanding the importance of patterns and cycles in their world ● Become proactive in taking an active role to preserve the patterns/cycles 	<p>2. What do we want to learn?</p> <p>What are the key concepts (form, function, causation, change, connection, perspective, responsibility, reflection) to be emphasized within this inquiry?</p> <p>Key concepts: Causation, change, reflection Related concepts: Pattern, Cycle Subject Focos: Science, math, arts</p> <p>What lines of inquiry will define the scope of the inquiry into the central idea?</p> <ul style="list-style-type: none"> ● Solar System Patterns ● Sun and Seasonal Patterns ● Animal and plant cycles <p>What teacher questions/provocations will drive these inquiries?</p> <ol style="list-style-type: none"> 1. Where can we see patterns or cycles in our world? 2. What are the different phases or stages of different cycles and how long do they last? 3. What causes patterns to repeat? 4. How do patterns and cycles affect the world and its inhabitants? 5. What happens when world cycles and pattern change? <p>Provocations: OTQ - observe, think, question - using pictures related to cycles and patterns (phases of the moon, rotation of sun and moon, animal and plant stages.)</p>

3. How might we know what we have learned?

This column should be used in conjunction with "How best might we learn?"

What are the possible ways of assessing students' prior knowledge and skills? What evidence will we look for?

Thinking Maps, KWL chart, chart/ discussion of patterns and cycles they know about, chart and discuss weather related vocabulary they know, comments on concept/ question board

Use OTQ activities to discover what cycles students know and where they have confusion and interest.

What are the possible ways of assessing student learning in the context of the lines of inquiry? What evidence will we look for?

- Through participation classroom discussions and research activities classroom teacher will assess student understanding of types of cycles, what causes them, the effects of them on the world and its inhabitants
- Through study of the sun's rotation, orbit, and tilt, students will be able to explain the reason for seasonal changes.
- Through activities related to the sun's patterns and the water cycle students will make connections the to repetitive types of weather that occurs on the earth such as tornadoes, hurricanes, thunderstorms, lightning storms, hail storms, blizzard, etc.
- Through the tracking of different cycles students will demonstrate their ability to use scientific reasoning and methods for sorting and interpreting data. They will demonstrate their ability to use graphs , charts, and measuring tools to process and interpret data.
- Through final projects, and what's my cycle books, students will be able to identify cycle, how they work, and how they affect the world.

4. How best might we learn?

What are the learning experiences suggested by the teacher and/or students to encourage the students to engage with the inquiries and address the driving questions?

1. The teacher /students will make a circle map and discuss different types of patterns and cycles to determine prior knowledge.
2. The teacher/students will research various types of pattern/cycles in our world and universe, how they work, and their effects on world and its inhabitants through: internet, books, videos, etc
3. Students/teacher will explore about sun and lunar cycles, explore what causes the seasons to change as well as why we have day and night using an orange and a flashlight.
4. The students will make different types of patterns/cycles using various graphic organizers.
5. The students will create a visual representation using various art mediums to depict their favorite type of cycle and write a brief description about it.
6. The students will work as a group to compare/contrast two types of cycles.
7. Students will use technology to write and illustrate a type of cycle.
8. What cycle am I?" Book - Students will create "guessing" using data about a cycle
9. Investigate how sun cycle and water cycle cause particular weather patterns.
10. Explore different plant and animal cycles throughout the world and compare them (duration of pattern, time of year it occurs.)
11. Explore Stemsopes: Behavior of light, seasonal patterns, patterns in space as they explore cycles
12. Students developing a project/presentation of their choice about a cycle or pattern. Their project/presentation should include visual representations written work and must be presented orally. Students will describe a particular pattern, explain its: stages, causes and effects on the environment and people, and what might happen if the pattern or cycle changed.

What opportunities will occur for transdisciplinary skills development and for the development of the attributes of the learner profile?

- **Research Skills:** Planning, collecting, recording, organizing data as students create their project.
- **Thinking Skills:** Application, analysis, acquisition of knowledge, comprehension, and synthesis through class discussions about patterns/cycles, mini assignments and unit projects.
- **Communication Skills:** Speaking, viewing, presenting, reading and writing through compare and contrast assignment and diorama projects.
- **Profile:** Knowledgeable, inquirer and balance as students inquire into different types of cycles/patterns and demonstrate awareness and concern on a global level applying a need for balance that they see in nature towards their own lives.
- **Attitudes:** Curiosity and enthusiasm as students inquire into different types of cycles/patterns and demonstrate awareness and concern on a global level.

5. What resources need to be gathered?

What people, places, audio-visual materials, related literature, music, art, computer software, etc, will be available?

BrainPop (cycles and patterns-solar, seasonal, lunar, plant, water, animal), Bill Nye the Science Guy, Britannica online, You Tube, NatGeo on cycles.

How will the classroom environment, local environment, and/or the community be used to facilitate the inquiry?

Classroom arrangement will be one conducive to cooperative groups, use of guest speakers, ie. Use science expert,. possible field trip to PCC to their planetarium.

