Hypermedia Project Description

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Hypermedia Project

Introduction

This project is a compilation of 3 multimedia projects aimed at teaching 4th grade students about the water cycle. This paper will begin with a description and instructional design model of a PowerPoint presentation about what the water cycle is and the different phases of the water cycle. The presentation uses primarily text and animation to present information. Following the presentation project is a description and instructional design model of a video made using Windows Movie Maker in which pictures and text are used to present information. Finally, the description and instructional design model of a game related to the water cycle that was made using GameSalad is included. Each of the instructional design models are based off of the DDD-E Model (Ivers & Barron, 2010).
Presentation Project

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Part A: Presentation Description

Instructional/Learning Problem(s)

Classrooms should be moving away from teacher-centered learning and towards student-centered learning. In student-centered learning students are becoming responsible for their own learning and creating their own learning products. Teachers take on the role of a facilitator. As a result students will be able to learn and use higher order thinking skills such as recognizing connections between ideas and creating their own diagrams that show various representations of those ideas. As a result of viewing this presentation, students will be able to demonstrate the higher order thinking skills mentioned above.

Video Type

This presentation is tutorial based, and is centered around 4th grade science content on the water cycle.

Content Description

The content of this presentation is centered on the water cycle. Students will be learning about how water is recycled throughout Earth by means of: evaporation, condensation, precipitation, runoff, and groundwater. Students will learn that evaporation is when water becomes gas, condensation is when gas becomes a liquid, precipitation is rain, sleet, snow, and hail, runoff is when water moves on Earth’s surface, and that groundwater is water that moves down into the ground.

In addition to learning about what each phase of the water cycle is, students will be looking at how each process of the cycle is related to one another and the idea that the cycle constantly continues and constantly recycles water. For example, students will see through the use of pictures that after precipitation occurs a runoff occurs. Once students see that water is
recycled through a continuous cycle, then they will have the information necessary to create their own diagram depicting the water cycle.

**Target Audience**

This presentation can be used by 4th grade science teachers and students while learning about the water cycle.

**Multimedia Tools**

The multimedia tools that will be used to create this presentation include:

- Pictures
- Sounds/Music
- Text
- Animations

**Part B: Presentation Lesson Plan/DDD-E Model**

**Instructional/learning problem(s)**

Classrooms should be moving away from teacher-centered learning and towards student-centered learning. In student-centered learning students are becoming responsible for their own learning and creating their own learning products. Teachers take on the role of a facilitator. As a result students will be able to learn and use higher order thinking skills such as recognizing connections between ideas and creating their own diagrams that show various representations of those ideas. As a result of viewing this presentation, students will be able to demonstrate the higher order thinking skills mentioned above.

**Learner Characteristics**

This multimedia presentation can be used for 4th grade students in New York State. The NYS Science Curriculum requires that students learn about the water cycle and be able to
recognize the relationships between each aspect of the cycle. Before viewing this presentation, students should have prior knowledge about phase changes between solids, liquids, and gases as well as about knowledge about basic weather such as the forms of precipitation.

**Schedule of Implementation (DDD-E Model)**

**Decide (Days 1-3).**

*Identify Standards and Instructional Goals.* The standards to be addressed in the presentation will be considered. The NYS Science standard that will be addressed in this multimedia presentation is: *Standard 4: Key Idea 2: Performance Indicator 2.1c: Water is recycled by natural processes on Earth.* The instructional goals of the presentation will also be considered. After viewing this presentation, it is hoped that students will be able to recognize each phase of the water cycle and the relationships that exist between each phase.

*Decide on a Project.* A storyboard and multimedia presentation will be created on Microsoft PowerPoint about the water cycle. This presentation will be presented to the students during the develop phase. The teacher will consider an alternate plan if for some reason the presentation doesn’t work properly.

*Assess Prerequisite Skills.* In order to assess whether the students have the required prior knowledge needed to view the presentation, students will be filling out a KWL chart. At this point the students will only be filling out the K and W sections of the chart.

*Determine Assessment Techniques.* The formative assessment for this presentation is the KWL chart as well as general observations of the students. The summative assessment for this presentation is the L section of the KWL chart. The students will also be assessed based on their ability to create their own diagram representing the water cycle. The students will be able to
create a paper-based or a computer-based diagram, though the students will be encouraged to create a computer-based diagram. The assessments will be created by the teacher.

*Create Cooperative Groups.* The students will be put into groups of 3-4 in order to complete the formative and summative assessments.

*Design (Day 4).*

*Present Design Guidelines.* The students will be informed of the instructional goals for this presentation. Students will then be presented with the requirements for the formative and summative assessments, including their group assignments. The students will be encouraged to ask any questions about the assignment.

*Conduct Formative Assessment.* Students will fill out the K section of the chart indicating what they already know about the water cycle. If the required prior knowledge is not demonstrated in this section of the chart then the teacher will remind the students of the information. The students will also fill out the W section of the chart indicating what they would like to learn about the water cycle. As a class, the students will discuss what they wrote in each of the two sections of the KWL chart.

*Develop (Day 5).*

*Manage Media Production.* The teacher will ensure that the presentation and the required technology required to present the presentation is working properly. The teacher will enact an alternative plan if the technology is not working properly.

*Facilitate Multimedia Activities.* The students will view the presentation. After the presentation, the students will review the content of the presentation with their groups.
Evaluation (Days 6-7).

Conduct Formative Assessment. The students will be reminded of what their assignment is for the summative assessment. The students will create their diagrams of the water cycle. The teacher will facilitate the summative assessment, providing assistance to students as needed. Once the class has completed their diagrams, each group will present their diagram to the whole class.

Reflect on Activity and Revise for Future. The teacher will reflect on the presentation and the implementation of the assessments. Students will be asked for their input on the presentation and the assessments. The students’ input will be considered as the activity is revised for future implementations.

Objectives

The objectives for this presentation include:

- Students will be able to identify the phases of the water cycle (evaporation, condensation, precipitation, runoff, and groundwater).
- Students will be able to create and explain their own diagram of the water cycle.

Content

This presentation will be about the water cycle. Topics addressed in the presentation include:

- Phase changes
- Precipitation
- Evaporation
- Condensation
HYPERMEDIA PROJECT DESCRIPTION

- Runoff
- Groundwater
- Relationships between each phase of the water cycle

Multimedia Elements

The multimedia tools that will be used to create this presentation include:

- Pictures
- Sounds/Music
- Text
- Animations

Hardware & Software Elements

**Hardware.** Various pieces of hardware will be used for the planning and implementation of this presentation including:

- Computer
- Video Projector

**Software.** The software that will be used for the planning and implementation of this presentation includes:

- Microsoft PowerPoint

User Requirements

For this presentation it is required that the user have basic computer skills such as locating, opening, and saving files on the computer, operating a video projector, creating a PowerPoint presentation, as well as adding pictures, sound, and animation to a PowerPoint presentation.
Video Project

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Part A: Product Description Paper

Overview of Project

This project will be presenting information to 4th grade students about the water cycle using video as the modality. The video, through the use of pictures and audio, will teach students about the phases of the water cycle and how they are related to each other. The students will show their understanding by creating their own representation of the water cycle.

Instructional problem to be addressed. Classrooms should be moving away from teacher-centered learning and towards student-centered learning. In student-centered learning students are becoming responsible for their own learning and creating their own learning products. Teachers take on the role of a facilitator. As a result students will be able to learn and use higher order thinking skills such as recognizing connections between ideas and creating their own diagrams that show various representations of those ideas. As a result of viewing this video, students will be able to demonstrate the higher order thinking skills mentioned above.

Type of multimedia to be used. The multimedia tools that will be used to create this video include: pictures, audio (sounds and/or music), and text. The video will be created using the Windows Movie Maker program.

Content to be taught. The content of this video is centered on the water cycle. Students will be learning about how water is recycled throughout Earth by means of: evaporation, condensation, precipitation, runoff, and groundwater. Students will learn that evaporation is when water becomes gas, condensation is when gas becomes a liquid, precipitation is rain, sleet, snow, and hail, runoff is when water moves on Earth’s surface, and that groundwater is water that moves down into the ground.
In addition to learning about what each phase of the water cycle is, students will be looking at how each process of the cycle is related to one another and the idea that the cycle constantly continues and constantly recycles water. For example, students will see through the use of pictures that after precipitation occurs a runoff occurs. Once students see that water is recycled through a continuous cycle, then they will have the information necessary to create their own diagram depicting the water cycle.

**Target audiences.** This video can be used by 4th grade science teachers and students while learning about the water cycle.

**Part B: Instructional Design Planning**

**Teacher Considerations for Developing an Instructional Presentation**

**DDDE Model: Decide Phase.**

**Identify standards and instructional goals.** The standards to be addressed in the video will be considered. The NYS Science standard that will be addressed in this multimedia video is: Standard 4: Key Idea 2: Performance Indicator 2.1c: Water is recycled by natural processes on Earth. The instructional goals of the video will also be considered. After viewing this video, it is hoped that students will be able to recognize each phase of the water cycle and the relationships that exist between each phase.

**Decide on a project.** A storyboard will be created to plan what will be presented in the video. A multimedia video will be created on Windows Movie Maker about the water cycle. This video will be presented to the students during the develop phase. The teacher will consider an alternate plan if for some reason the video or the technology required to present the video don’t work properly.
Assess prerequisite skills. In order to assess whether the students have the required prior knowledge needed to view the video, students will be creating a concept map. The students will create the map based on what they have already learned about the water cycle.

Determine assessment techniques. The formative assessment for this video is the concept map as well as general observations of the students. The summative assessment for this video is a video on the water cycle created by the students. The students will work in groups in order to create a video similar to the one presented to them using Windows Movie Maker. The summative assessment will be evaluated using a rubric and students will be evaluated on how well they are able to present the information about the water cycle.

Create cooperative groups. The students will be put into groups of 3-4 in order to complete the summative assessment.

DDDE Model: Design Phase.

Present design guidelines. The students will be informed of the instructional goals for this presentation. Students will then be presented with the requirements for the formative and summative assessments, including their group assignments. The students will be encouraged to ask any questions about the assignment.

Conduct formative assessment. Students will independently fill out their concept maps demonstrating what they already know about the water cycle. If the required prior knowledge is not demonstrated in the concept map then the teacher will remind the students of the information. As a class, the students will discuss what they wrote in their concept map.
DDDE Model: Develop Phase.

Manage media production. The teacher will ensure that the video and the required technology required to present the video is working properly. The teacher will enact an alternative plan if the technology is not working properly.

Facilitate multimedia activities. The students will view the video. After the video, the students will review the content of the video with their groups. During this time the teacher will also discuss some of the processes he/she used to create the video using Windows Movie Maker.

DDDE Model: Evaluate Phase.

Conduct summative assessment. The students will be reminded of what their assignment is for the summative assessment. The students will create their video of the water cycle. The teacher will facilitate the summative assessment, providing assistance to students as needed. Once the class has completed their videos, each group will present their video to the whole class. The teacher should present the students with a self-evaluation sheet so they can evaluate their own videos (Ivers & Barron, pp. 149). The teacher will evaluate the videos using a rubric (Ivers & Barron, pp. 154).

Reflect on activity and revise for future. The teacher will reflect on the video and the implementation of the assessments. Students will be asked for their input on the video and the assessments. The students’ input will be considered as the activity is revised for future implementations.

Student Considerations for Using and Developing a Project (Lesson Plan)

Objectives/goals for the lesson. After viewing the video, students will be able to: identify the phases of the water cycle (evaporation, condensation, precipitation, runoff, and
groundwater) and create a video that represents the content of the water cycle that they learned from the lesson.

**Learning outcomes.** The following learning outcomes will be addressed in this lesson: content/basic thinking skills and collaboration skills.

**Content State Standards.** The following content state standards will be met with this lesson: Standard 4: Key Idea 2: Performance Indicator 2.1c: Water is recycled by natural processes on Earth.

**ISTE Technology Standards.** The following ISTE technology standards will be met with this lesson: ISTE: NETS Standard 2: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

**Hardware requirements.** The following hardware components are needed for the planning and implementation of this lesson: computer and video projector.

**Software requirements.** The following software components are needed for the planning and implementation of this lesson: Windows Movie Maker.

**Prerequisite skills.** For this lesson it is required that the students have basic computer skills such as: locating, opening, and saving files on the computer, creating a basic video using Windows Movie Maker, and adding pictures, sound, and/or animation to the video. Students should have prior content knowledge of the phase changes of water as well as basic knowledge of the water cycle.

**Duration** (ranging from one class period to an entire year). This lesson should take approximately 7 school days.
**Grouping strategy.** Students will be placed into small groups of approximately 3-4 students depending on the class size.

**Procedure.**

*DDDE Model: Decide Phase.*

*Brainstorm content.* Students should discuss the content that was presented to them in the teacher-created video that they were shown. They will brainstorm potential content that they would like to add to their video.

*DDDE Model: Design Phase.*

*Outline content.* Students will create an outline of the content they will be including in their video. They should describe how the content will be expressed.

*Create storyboard.* Students will create a storyboard in order to plan how they will design their video. Their storyboard should demonstrate an idea of what pictures, text, voice, etc… they will be adding to their video.

*DDDE Model: Develop Phase.*

*Create graphics.* Students will find the pictures that they are adding to their video.

*Construct animations.* Students will create any animations to their video that will help express the water cycle content.

*Produce audio.* Students will produce any music or voiceovers for their video.

*Author video.* Students will add the graphics, animations, and audio to their video. Students should be sure to add the graphics, animations, and audio to their video in a way that will not distract viewers from understanding the water cycle content.
**DDDE Model: Evaluate Phase.**

*Debug program.* Students will view their video and make any necessary changes to the video. Students should make sure that the content of the video is presented in an easy to understand format. Students should also make sure that their video will be transferrable from computer to computer.

*Conduct self-evaluations.* Students will evaluate their video by completing the self-evaluation sheet (Ivers & Barron, pp. 149).

*Assessment measures.* Students will present their created videos to the teacher and the rest of the class. The students will complete a self-assessment on their video. The students will also be evaluated by their teacher using a rubric (Ivers & Barron, pp. 154).

*Extension ideas.* If for some reason the presentation or the technology required to show the video doesn’t work properly, the students should present their storyboard and other video planning materials. By doing this, students will still be able to get an idea of the content of the video.
Game Project

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Game Project

Part A: Product Description Paper

Overview of Project

This project will be presenting information to 4th grade students about the water cycle using a game as the modality. The game, through the use of pictures and audio, will teach students about how trees take in water as part of the water cycle. The students will show their understanding by creating their own game based on the content.

Instructional problem to be addressed. Classrooms should be moving away from teacher-centered learning and towards student-centered learning. In student-centered learning students are becoming responsible for their own learning and creating their own learning products. Teachers take on the role of a facilitator. Many teachers question the educational value of using games in the classroom (Hirumi, 2010). Games can provide students with another method of learning content knowledge. As a result of creating and using a game, students will be creating their own representations of the water cycle content.

Type of multimedia to be used. The multimedia tools that will be used to create this game include: pictures and audio (sounds and/or music). The game will be created using the GameSalad program.

Content to be taught. The content of this game is centered on the water cycle and how the water cycle presents trees with water. Students will be reviewing how water is recycled throughout Earth by means of: evaporation, condensation, precipitation, runoff, and groundwater. Students will learn that through the different phases of the water cycle, water is recycled and given to trees as a source of water.
Target audiences. This game can be used by 4th grade science teachers and students while learning about the water cycle.

Part B: Instructional Design Planning

Teacher Considerations for Developing an Instructional Game

DDDE Model: Decide Phase

Identify standards and instructional goals. The standards to be addressed in the game will be considered. The NYS Science standard that will be addressed in this multimedia game is: Standard 4: Key Idea 2: Performance Indicator 2.1c: Water is recycled by natural processes on Earth. The instructional goals of the game will also be considered. After using this game, it is hoped that students will be able to recognize how trees receive water as a result of the water cycle.

Decide on a project. A storyboard will be created to plan what will be presented in the game. A multimedia game will be created on GameSalad about how trees receive water through the water cycle. This game will be presented to the students during the develop phase. The teacher will consider an alternate plan if for some reason the game or the technology required to present the game don’t work properly.

Assess prerequisite skills. In order to assess whether the students have the required prior knowledge needed to use the game, students will be participating in a whole group discussion. The teacher will ask students questions such as: What is the water cycle? What is each of the phases of the water cycle called? How is water recycled through the water cycle? Some of the questions may be discussed among students in a group in a think-pair-share format.

Determine assessment techniques. The formative assessment for this video is the discussion as well as general observations of the students. The summative assessment for this
video is a game created by the students. The students will work in groups in order to create a game similar to the one presented to them using GameSalad. The summative assessment will be evaluated using a rubric and students will be evaluated on if they include content of the water cycle in their game.

*Create cooperative groups.* Students will be working in groups of 2-3 to use the game. Students will be taking turns controlling the game.

**DDDE Model: Design Phase**

*Present design guidelines.* The students will be informed of the instructional goals for this game. Students will then be presented with the requirements for the summative assessment, including their group assignments. The students will be encouraged to ask any questions about the game.

*Conduct formative assessment.* Students will participate in a whole class discussion answering questions about the water cycle that are posed by the teacher. Some of the questions will be answered by the students in their group using a think-pair-share format. The content that the students discuss as a group will be shared to the whole class.

**DDDE Model: Develop Phase**

*Manage media production.* The teacher will ensure that the game and the required technology required to present the game is working properly. The teacher will enact an alternative plan if the technology is not working properly.

*Facilitate multimedia activities.* The teacher will model for the students how the game works and how it was designed/modified. After the students have seen the game, the students will ask any questions that they have about how the game was made using GameSalad. The students, as a whole class, will discuss the content of the game as it relates to the water cycle.
DDDE Model: Evaluate Phase

**Conduct summative assessment.** The students will be reminded of what their assignment is for the summative assessment. The students will create their game on the water cycle. The teacher will facilitate the summative assessment, providing assistance to students as needed. Once the class has completed their game, each group will view another group’s game on a computer. The teacher should present the students with a self-evaluation sheet so they can evaluate their own videos (Ivers & Barron, pp. 149). The teacher will evaluate the videos using a rubric (see Appendix A).

**Reflect on activity and revise for future.** The teacher will reflect on the use of the game and the implementation of the assessments. Students will be asked for their input on the game and the assessments. The students’ input will be considered as the game use is revised for future implementations.

**Students Considerations for Using and Developing a Game (Lesson Plan)**

This student section of this plan will be geared towards students in a summer camp environment. The time available in a classroom and the curriculum to not allow for students in a regular classroom setting to design a game.

**Objectives/goals for the lesson.** After viewing the video, students will be able to: identify the phases of the water cycle (evaporation, condensation, precipitation, runoff, and groundwater) and how each phase may or may not provide water to trees. Students will also be able to create their own game that represents the content that they learned from the lesson.

**Learning outcomes.** The following learning outcomes will be addressed in this lesson: content/basic thinking skills and collaboration skills.
**Content state standards.** The following content state standards will be met with this lesson: Standard 4: Key Idea 2: Performance Indicator 2.1c: Water is recycled by natural processes on Earth.

**ISTE technology standards.** The following ISTE technology standards will be met with this lesson: ISTE: NETS Standard 2: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

**Hardware requirements.** The following hardware components are needed for the planning and implementation of this lesson: computer and screen projector.

**Software requirements.** The following software components are needed for the planning and implementation of this lesson: GameSalad.

**Prerequisite skills.** For this lesson it is required that the students have basic computer skills such as: locating, opening, and saving files on the computer, manipulating a game using GameSalad, and adding pictures and audio to the game. Students should have prior content knowledge of the phase changes of water as well as knowledge of each phase of the water cycle.

**Duration (ranging from one class period to an entire year).** This lesson, including student development of their own game, could take 14 or more class periods. Due to the time constraint that this lesson provides, this lesson should be presented to students in a setting where time is less of an issue, such as in a summer camp environment.

**Grouping strategy.** Students will be placed into small groups of approximately 2-3 students depending on the class size.
Procedure.

**DDDE Model: Decide Phase.**

*Brainstorm content.* Students should discuss the content that was presented to them in the teacher-created game that they were shown. They will brainstorm potential content that they would like to add to their own game.

**DDDE Model: Design Phase.**

*Outline content.* Students will create an outline of the content they will be including in their game. They should describe how the content will be expressed in an educational way.

*Create storyboard.* Students will create a storyboard in order to plan how they will design/manipulate their game. Their storyboard should demonstrate an idea of what pictures and audio they will be adding to their game.

**DDDE Model: Develop Phase.**

*Create graphics.* Students will find the pictures that they are adding to their game.

*Produce audio.* Students will produce any music or sound effects for their game.

*Author game.* Students will add the graphics and audio to their game.

**DDDE Model: Evaluate Phase.**

*Debug program.* Students will practice using their game and make any necessary changes to the game. Students should make sure that the content of the game is presented in an educational way.

*Conduct self-evaluations.* Students will evaluate their game by completing the self-evaluation sheet (Ivers & Barron, pp. 149).

**Assessment measures.** Students will present their created games to the teacher and the rest of the class. The students will view other groups’ videos on a computer. The students will
complete a self-assessment on their game. The students will also be evaluated by their teacher on their ability to manipulate a game template in some way.

**Extension ideas.** If for some reason the game or the technology required to show the game doesn’t work properly, the students should present their storyboard and other game planning materials. By doing this, students will still be able to get an idea of the content of their games.
References


Appendix A: Presentation Storyboard

<table>
<thead>
<tr>
<th>Title Slide</th>
<th>Slide 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Background:</strong> Dark Blue</td>
<td><strong>Background:</strong> Dark Blue</td>
</tr>
<tr>
<td><strong>Words:</strong> The Water Cycle (in white)</td>
<td><strong>Words:</strong> Precipitation, runoff, groundwater, evaporation, and condensation</td>
</tr>
<tr>
<td><strong>Pictures:</strong> Raindrops (light blue)</td>
<td><strong>Pictures:</strong> Arrows</td>
</tr>
<tr>
<td><strong>Animations:</strong> Falling raindrops</td>
<td><strong>Animations:</strong> Words flash in order of presentation</td>
</tr>
<tr>
<td><strong>Sounds:</strong> Rain shower or flowing water</td>
<td><strong>Sounds:</strong> Rain shower or flowing water</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Slide 2</th>
<th>Slide 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Background:</strong> Dark Blue</td>
<td><strong>Background:</strong> Dark Blue</td>
</tr>
<tr>
<td><strong>Words:</strong> Precipitation, rain, snow, sleet, hail</td>
<td><strong>Words:</strong> Runoff</td>
</tr>
<tr>
<td><strong>Pictures:</strong> Rain, snow, sleet, hail</td>
<td><strong>Pictures:</strong> Arrow, hill</td>
</tr>
<tr>
<td><strong>Animations:</strong> Falling pictures</td>
<td><strong>Animations:</strong> Arrow moves down a hill to demonstrate a runoff</td>
</tr>
<tr>
<td><strong>Sounds:</strong> Rain shower or flowing water</td>
<td><strong>Sounds:</strong> Rain shower or flowing water</td>
</tr>
</tbody>
</table>
**Slide 4**
*Background:* Dark Blue  
*Words:* Groundwater  
*Pictures:* water  
*Animations:* water rises  
*Sounds:* Rain shower or flowing water

**Slide 5**
*Background:* Dark Blue  
*Words:* Evaporation  
*Pictures:* Water, vapor symbols, arrow  
*Animations:* Arrow moving to show path of water vapor  
*Sounds:* Rain shower or flowing water

**Slide 6**
*Background:* Dark Blue  
*Words:* Condensation, clouds form  
*Pictures:* Multiple clouds  
*Animations:* Clouds appearing  
*Sounds:* Rain shower or flowing water

**Slide 7**
*Background:* Dark Blue  
*Words:* It’s a continuous cycle!  
*Pictures:* water cycle diagram  
*Animations:* Circle each phase of the water cycle  
*Sounds:* Rain shower or flowing water
## Appendix B: Presentation Lesson Plan

### Objectives

Students will be able to:
- Students will be able to identify the phases of the water cycle (evaporation, condensation, precipitation, runoff, and groundwater).
- Students will be able to create and explain their own diagram of the water cycle.

### Learning Skills

The following learning skills will be addressed in this lesson:
- Content/Basic Thinking Skills
- Collaboration Skills

### State Standards

NYS Science Standard
- *Standard 4: Key Idea 2: Performance Indicator 2.1c:* Water is recycled by natural processes on Earth.

### Technology Standards

The following technology standards will be addressed in this lesson:
- Basic operations and concepts

### Hardware

- Computer
- Video Projector

### Software

- Microsoft PowerPoint

### Prerequisite technology skills

For this presentation it is required that the user have basic computer skills such as:
- Locating, opening, and saving files on the computer
- Operating a video projector
- Creating a PowerPoint presentation
- Adding pictures, sound, and animation to a PowerPoint presentation.
Duration
This lesson should take approximately 7 school days, including planning and implementation.

Grouping Strategy
Students should be placed into small groups of approximately 3-4 students depending on the class size.

Procedure
This lesson should be implemented using the DDD-E Model for Multimedia projects.

Decide (Days 1-3)
Identify Standards and Instructional Goals: The standards to be addressed in the presentation should be considered. The instructional goals of the presentation will also be considered.

Decide on a Project: A storyboard and multimedia presentation should be created beforehand on Microsoft PowerPoint about the water cycle. This presentation will be presented to the students during the develop phase. The teacher will consider an alternate plan if for some reason the presentation doesn’t work properly.

Assess Prerequisite Skills: In order to assess whether the students have the required prior knowledge needed to view the presentation, students will be filling out a KWL chart. At this point the students will only be filling out the K and W sections of the chart.

Determine Assessment Techniques: The formative and summative assessments should be considered for this lesson. The assessments should be created by the teacher during this phase of planning.

Create Cooperative Groups: The students should be put into groups of 3-4 in order to complete the formative and summative assessments.

Design (Day 4)
Present Design Guidelines: The students should be informed of the instructional goals for this presentation. Students should then be presented with the requirements for the formative and summative assessments, including their group assignments. The students should be encouraged to ask any questions about these requirements.

Conduct Formative Assessment: Students will fill out the K section of a KWL chart indicating what they already know about the water cycle. If the required prior knowledge is not demonstrated in this section of the chart then the teacher should review this information with the students. The students will also fill out the W section of the chart indicating what they would like to learn about the water cycle. As a class, the students should discuss what they wrote in each of the two sections of the KWL chart.

Develop (Day 5)
Manage Media Production: The teacher should ensure before the lesson that the presentation and the required technology required to present the presentation is working properly. The teacher should present an extension activity if the technology is not working.
Facilitate Multimedia Activities: The students will now view the presentation. After the presentation, the students should review the content of the presentation with their groups.

**Evaluation (Days 6-7)**

Conduct Formative Assessment: The students should be reminded of what their assignment is for the summative assessment. The students will create a diagram of the water cycle with their groups. The teacher should facilitate the summative assessment, providing assistance to students as needed. Once the class has completed their diagrams, each group will present their diagram to the whole class.

Reflect on Activity and Revise for Future: The teacher will reflect on the presentation and the implementation of the assessments. Students will be asked for their input on the presentation and the assessments. The students’ input should be considered as the activity is revised for future implementations.

**Assessment**

This lesson will be assessed using the following methods:

- KWL chart
- Observations
- Performance task (creating a diagram)

**Extension(s)**

If for some reason the presentation or the technology required to show the presentation doesn’t work properly, the teacher should present the same information to the students using the SMART Board. If the SMART Board is also not available, the teacher should also prepare a poster or other visual showing the water cycle.

**Areas of Concern**

Technology has the potential to be a concern for this lesson if it is not working properly. Another concern that should be monitored is the student groups.
Appendix C: Video Assessment (Concept Map)

Water Cycle
Appendix D: Video Storyboard (Teacher)

<table>
<thead>
<tr>
<th></th>
<th>The Water Cycle</th>
<th></th>
</tr>
</thead>
</table>
| 1 | **Text**: The Water Cycle  
**Background**: Blue  
**Audio**: Music, voiceover | 2 | **Picture(s)**: Water cycle  
**Background**: Black  
**Audio**: Music, voiceover, explanation |
| 3 | **Picture(s)**: Precipitation, rain, snow, sleet, hail  
**Background**: Black  
**Audio**: Music, voiceover, explanation | 4 | **Picture(s)**: Runoff  
**Background**: Black  
**Audio**: Music, voiceover, explanation |
<table>
<thead>
<tr>
<th>Picture(s): Groundwater, lake, pond</th>
<th>Picture(s): Evaporation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Background: Black</td>
<td>Background: Black</td>
</tr>
<tr>
<td>Audio: Music, voiceover, explanation</td>
<td>Audio: Music, voiceover, explanation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Picture(s): Condensation, clouds</th>
<th>Picture(s): Arrows/cycle video</th>
</tr>
</thead>
<tbody>
<tr>
<td>Background: Black</td>
<td>Background: Blue</td>
</tr>
<tr>
<td>Audio: Music, voiceover, explanation</td>
<td>Audio: Music, voiceover, cycle explanation</td>
</tr>
</tbody>
</table>