

ARTS IMPACT PROJECT BASED LEARNING UNIT PLAN

Visual Arts and STEM Infused PBL Unit

What Clouds Tell Us About the Weather

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Grade Level: Kindergarten – First Grade

Project Idea:

Students will observe, document and learn about clouds and how they can inform us about the current and coming weather. Activities may include: cloud journals, cloud collage, landscapes showing weather, cotton clouds, clouds in a jar, Gelli mono printing, 3D printing, salt and water colors technique, oil pastels, creation of a cloud chamber, with a final multimedia forecast presentation.

Driving Question:

How can we predict the weather by learning about and observing clouds?

How can I use this information to prepare for my day (rainy day, walk to school, clothes, field trip)?

Unit Summary (Completed at end of project. Use for sharing out public product.)

Students will learn about clouds and how they relate to weather. They will create individual and group works of art that are cloud related and share information.

Learning Targets and Assessment Criteria

Target: Observes and identifies different cloud types and how they relate to weather.

Criteria: Documents and identifies stratus, cumulus, nimbus, and cirrus clouds (in journal or individual projects).

Target: Creatively describes clouds visually.

Criteria: Represents different cloud types with various media (journal or individual projects).

Target: Collaborates in large and small groups to create a group presentation.

Criteria: Communicates and compromises with other students to make a display to share weather predictions using clouds as reference.

Vocabulary

Arts:

2-D, 3-D
Add, Subtract
Levels, Layers
Monoprint
Texture
Thick, Thin, Wispy

STEM:

Atmosphere
Cloud: Cirrus, Cumulus, Nimbus
Condensation
Droplets, Crystals
Evaporation
Light, Float
Stratus, Alto, Stratus
Temperature
Water Vapor, Air

continued

Materials

Resources (Websites, experts, texts)

<https://www.nasa.gov/audience/forstudents/k-4/stories/nasa-knows/what-are-clouds-k4.html>

<https://scool.larc.nasa.gov/printables-guides-CloudChart.html>

<https://spaceplace.nasa.gov/cloud-scramble/en/>

www.Weatherforkids.org, information about Clouds

www.Storyjumper.com, Big Book of Clouds

The Stories Clouds Tell by Margaret LaMone

Little Cloud by Eric Carle

Shapes in the Sky by Josepha Sherman

Museum Artworks or Performance

Materials

Gell printmaking plates, Acrylic paint
Brayer, Paper, Cotton balls, Watercolor, Salt, Oil pastels
Class assessment worksheet

Social Emotional Learning:
Team Work

21st Century Skills:
Collaboration, Critical Thinking

Standards to Drive the Inquiry

Arts

WA Arts Learning Standards

For the full description of each anchor standard and the grade level performance standards, see:

<http://www.k12.wa.us/Arts/Standards>

Elements: Direction, Shape, Place, Relationship, Level

Anchor Standard 5: Develop and refine artistic techniques and work for presentation.

Performance Standard (VA:Pr5.1.1): a. Ask and answer questions such as where, when, why, and how artwork should be prepared for presentation or preservation.

Anchor Standard 10: Synthesize and relate knowledge and personal experiences to make art

Performance Standard (VA:Cn10.1.K): a. Create art that tells a story about a life experience.

Science, Technology, Engineering

Next Generation Science Standards

<http://www.nextgenscience.org/search-standards>

[K-ESS2-1 Earth's Systems](#): Use and share observations of local weather conditions to describe patterns over time.

Scientific and Engineering Practices

Planning and Carrying Out Investigations

Analyzing and Interpreting Data

21st Century Skills

<http://www.p21.org/our-work/resources/for-educators>

- Critical Thinking: *Asks clarifying questions; uses evidence to question or explain creative choices*
- Collaboration: *Communicates ideas to others; makes compromises; and incorporates input/feedback*

Teacher Project Planning

(Questions for teachers.)

1. *What will the entry event(s) be to launch this unit?*

The class will build a Cloud Jar.

<http://www.kidspot.com.au/things-to-do/activity-articles/how-to-make-a-cloud-in-a-jar/news-story/ef26a01b9ca11d7f44dd607563125ad1>

Students will view clouds outside.

Students will view video showing different kinds of clouds.

2. *What resources might we need?*

(Experts, fieldtrips, texts, websites, data, equipment, materials)

Cloud in a jar materials (aerosol, ice, jar (size can vary) and boiling water)

Planned time to observe the clouds and record

Books on clouds

Observation recording sheet (journal)

Reference sheet

Monoprint cloud materials-Monoprint gel, paint in various colors, textures, paper

3. *What is the duration of this unit?*

1 month (can vary)

4. *What will be group work?*

Creating the class weather reporting sheet to display publicly.

What will each individual student do?

Keep a cloud journal, create a work of art showing types of clouds and how they related to certain types of weather.

5. *What will the formative assessments/moments for reflection be?*

(Journal entries, plans, outlines, rough drafts, sketches, turn and talk, physical brainstorm, idea mapping, diagramming)

Journal entries and cloud recording, sketches, turn and talk, cloud representations

6. *What will the summative assessment/ public product be?*

(Performance, exhibition, publication, public presentation, website, instillation)

Hallway chart that can be changed daily to publically show/forecast weather using the clouds.

Husky news. Cougar message.

Facilitating Student Understanding of the Problem

(Questions to guide student inquiry.)

1. *What do we know about this problem before we begin?*
2. *What do we need to learn in order to solve it?*
3. *Where will we look for resources?*
4. *Who is our audience? Who will be helped by our solution?*
5. *How will we share our solution?*
6. *How will we assess our own learning?*

PBL Unit Outline of Inquiry

(Begin each step with a question. Follow that with a brief description of what students do to address the question.)

1. What do you see in this jar?

- The students will observe a cloud in a jar.
- The students will discuss how clouds are formed and will brainstorm different types of weather associated with the clouds.

Student reflection and assessment: Share out about what they observe in the cloud jar and brainstorm ideas about clouds and weather.

2. Where can we find clouds?

- The students identify cloud forms and create a cloud chart: Cirrus, Cumulus, Nimbus, Stratus.
- The students listen to cloud stories and select cloud pictures that are associated with certain weather.

Student reflection and assessment: Peer share and chart creation. Discusses and choose cloud pictures.

3. How can we document our knowledge of clouds?

- The students observe clouds daily, creating a picture journal or cloud wall in the classroom.
- The students record cloud observations and predict weather in their journal. This could be done with existing pictures or drawings.
- The students could demonstrate their understanding by creating different kinds of clouds utilizing a monoprint. *Question for students representing clouds through printmaking: "What objects can we use to add or subtract paint/ink from the plate that will look cloud-like?"

Student reflection and assessment: Self reflection and gallery walk of cloud monoprints. Documents and identifies stratus, cumulus, nimbus, and cirrus clouds (in journal or individual projects).

4. What art materials can we use to represent different types of clouds, weather, and clothing?

- The students will use multimedia materials to represent the different types of clouds, weather and clothing.

Student reflection and assessment: Self-reflection, labeling of cloud types and gallery walk of art work. Represents different cloud types with various media (journal or individual projects).

5. How can we use what we know about clouds and predicting weather to inform students on what to wear.

- The students will collaborate to create an informational board, and update it each morning.

Criteria-based teacher checklist, peer-reflection: Communicates and compromises with other students to make a display to share weather predictions using clouds as reference.

Public Product/Sharing

Who is our audience?

Fellow students, entire school

Begin with a question, followed by the description of the culminating event that shares the learning from the PBL unit.

How can we share what now know about cloud formations and use this information to predict weather and help students prepare for weather conditions at recess?

Create, display, and update a chart predicting weather based on observation of clouds and advising students the best things to wear based on the weather.

ARTS IMPACT LESSON PLAN Visual Arts and STEM Infused PBL Unit

Kindergarten – First Grade: *What Clouds Tell Us About the Weather*

CLASS ASSESSMENT WORKSHEET

The following assessment checklist can be used along with other assessment tools teachers and students.

Disciplines	VISUAL ARTS/SCIENCE	VISUAL ARTS/SCIENCE	21 ST CENTURY SKILLS	Total 3
Concept	Observation	Artistic Representation of Weather Elements	Collaboration	
Criteria	Documents and identifies stratus, cumulus, nimbus, and cirrus clouds (in journal or individual projects).	Represents different cloud types with various media (journal or individual projects).	Communicates and compromises with other students to make a display to share weather predictions using clouds as reference.	
Student Name				
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30.				
Total				
Percentage				

What was effective in the unit? Why?

What do I want to consider for the next time I teach this unit?

What were the strongest connections between arts discipline and STEM?

Teacher: _____

Date: _____

Dear Family:

We are engaged in a visual arts and science-infused project based learning unit in which we are trying to solve this challenge:

Driving Question:

How can we predict the weather by learning about and observing clouds?
How can I use this information to prepare for my day?

- We asked, "How can we use what we know about clouds and predicting weather to inform students about what to wear?"
- We discovered that clouds can be represented with different kinds of artistic tools.
- We created a display board to teach other students about clouds and weather.

At home, you could extend the learning by looking at and talking about clouds.