

NGSS Unit Planning with UbD

Teacher Name: First Grade Team

Date: 2016-2017 School Year

School Site: Curran

Unit: Season Patterns

NGSS Covered:

1-ESS1-1: Use observations of the sun, moon, and stars to describe patterns that can predicted.

1-ESS1-2: The student is expected to make observations at different times of year to relate the amount of daylight to the time of year.

CCSS ELA Covered:

W.1.7 - Participate in shared research and writing projects (e.g., explore number of “how-to” books on a given topic and use them to write a sequence of instructions).

W.1.8 - With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

SL.1.1 - Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and large groups.

SL.1.3 - Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

CCSS Mathematics Covered:

1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more are in one category than another.

1.OA.A.1 - Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations to represent the problem.
MP.2 - Reason abstractly and quantitatively.

MP.4 - Model with mathematics.

MP.5 - Use appropriate tools strategically.

Notes:

Understanding by Design NGSS Unit Plan

Stage 1: Desired Results

Understand

Students will understand that during different seasons the amount of daylight changes based on the position of the Earth.

Essential Question(s)

Can the order of seasons change?

What causes the amount of daylight to change from seasons to season?

Stage 2: Evidence/Assess

Know

Argue: Claim-Evidence-Reasoning Evaluate activity:

Students will be able review a chart and determine which day was most likely taken during the winter. They will use evidence to support their answer by drawing and writing.

Do

- Graph of daylight hours in Murrieta and Santiago, Chile
- Create poster of the seasons showing temperature, weather patterns, and amount of daylight.
- Records shadows throughout the year and hourly on groundhogs day
- Create diorama displaying shadow movement or length throughout the day.

Stage 3: Learning Plan

Engage: Teacher and students will have a class discussion about what students know about seasons. Students will watch DiscoveryEd video on seasons: [Discovery Seasons Video](#) and [Discovery Seasons Video #2](#)

Teacher passes out [first student journal](#) and students will draw articles of clothing they would wear during each season. Students will create Day and Night signs on notecards. Teacher will create a T-chart for day and night. Teacher will state different activities that occur during the day and the night and students will use their signs to show when the activity takes place.

Explore:

Part One

1. When looking up data, choose the same day of each month to collect the sunrise and sunset data. You will need to look up the data for the previous year to get a full year of data. If you do an Internet search for "time and date," you can find [websites](#) with sunrise and sunset data. When calculating daylight hours, round the amount to the nearest whole hour.
2. Use this data to calculate the number of hours of daylight the cities received. This could be done in advance or together as a

class. Print the [Student Journal: Length of Day and Night](#), which contains the graph templates for each student to record their data.

3. Tell students they are going to record the amount of daylight for one day of each month to compare how much daylight we have during different times of the year. They will record the data for our city and for [Santiago, Chili](#). Show students on a globe where the two different cities are located and watch DiscoveryED video so students can see Santiago, Chili.

Part Two

1. Observe the time the Sun rises and sets for a day in January in your city.
2. Count how many hours your city received sunlight that day (if not already done in advance).
3. Color the bar above January for your city until you have colored one box for each hour of daylight.
4. Repeat this process for each month of the year for your city, then again for the other city.
5. Discuss:
 - When do we get the smallest amount of daylight? **In December and January**
 - When does the other city get the smallest amount of daylight? **In June and July**
 - Which city will have more daylight today?
 - **If you are in winter, the other city will have more sunlight. If it is spring or fall, the amount of daylight will be about the same.**
 - What is the current season in your city? **It is October, so it is fall/autumn.**
 - What is the current season in the other city? **Since it is fall here, it is spring in the other city because the seasons are opposite.**
 - Which season has more daylight? **Summer**
 - Which season has less daylight? **Winter**
 - Which seasons have about the same amount of daylight? **Spring and fall/autum**

Part One

The activity is to research the characteristics of each season and create a poster in groups, so that others can easily compare the seasons. Students may use the information about daylight hours from Task 1 for their posters.

- Do you remember what season had the most daylight? **Summer**
- Very good! Your poster should be split up into four sections, one for each season.
- Your poster should have information about the weather, temperature, and amount of daylight during each season.

- It is a good idea to include pictures about your information to make your poster look nice.

Part Two

1. Students split their poster into four equal sections and label each section a different season: Summer, Fall, Winter, and Spring.
2. Students divide the responsibility of researching different seasons for the poster among their group members.
3. Students design the poster on a piece of scratch paper before creating the final copy, so that the whole group agrees on the design.
4. Students complete the final poster, including the temperature, weather, and amount of daylight for each season.
5. Practice share posters with another team.
6. Present posters to another class and use rubric.

Explain: Read STEMscopedia and have students fill out linking literacy page. Explain Communicate on StemScopes (1st Week of Oct)

Buffalo Video: <https://www.youtube.com/watch?v=Pgg0LThW7QA>

Tilt #2 Video: <https://www.youtube.com/watch?v=eUsWUiVCq5U>

<https://app.discoveryeducation.com/learn/videos/10c90dab-46f6-45e7-8434-aa5572c6b33e?hasLocalHost=false>

<https://app.discoveryeducation.com/learn/videos/8d7e35f4-2bab-48e8-ab96-f43791894b5f?hasLocalHost=false>

Elaborate: Shadows - PE time - same place on the playground; same time of day (1st day of the month). Feb. 2nd (groundhog day) students will record shadow every hour.

Evaluate: Shadow diorama using data from shadows. Argue Claim Evidence & Open Ended Response (2nd week of Oct). Seasons writing- Students will chose their favorite season and explain why. They will also draw a picture of what their favorite seasons look like through a window.

Stage 4: Transfer

Knowledge Transfer

Tentative Daily Schedule

9.20 Murrieta Temperature Graph	9.21 Santiago, Chile Video and Temperature Graph	9.22 Santiago, Chile Temperature Graph
9.27 Modeling the Earth's tilt and it's affect on seasons	9.28 Create groups and begin research on seasons	9.29 Groups create posters displaying each season and showing the information they gathered
10.4 Create posters in groups and practice presenting	10.5 Create posters in groups and practice presenting	10.6 P.E Shadows & Finish Seasonal Posters
10.11 Read Works Articles during Reading Rotations (9:05-10:05) Linking Literacy (1:00-2:45)	10.12 Read Works Articles during Reading Rotations (9:05 - 10:05) Explain Communicate (1:00-2:45)	10.13 Assessments: Open Ended Response
10.17 Assessments: Argue Claim Evidence Reasoning	10.18-10:20 Catch-up	

02/02/17 - Groundhog shadow day - review the vignette from the NGSS Science framework for Seasonal Patterns grade one