

Class 1 Air Quality!

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Grades: K - 2nd Grade

Lesson: 2

Unit: 2: American Indian land tenure history

Subject: Science

Additional Subject(s): Geography; History/Social Studies

Achievement Goal: Students will identify causes of air pollution, record and interpret data, define Class 1 Air standards, and name the Montana reservations that have Class 1 Air Quality.

Time: Two class periods

Lesson Description:

Students measure local air pollution and locate Indian Reservations with Class 1 Air Quality designation.

Teacher Background:

Three American Indian Reservations in Montana Have Class 1 Air Quality designation. Geographic areas are categorized into Class 1, Class 2 or Class 3 Areas. This designation determines how much pollution will be legally allowed. A Class 1 Area severely restricts industrial development that would create any emissions determined pollutants. The Northern Cheyenne, Fort Peck and Flathead Indian Reservations all have Class 1 Area designation. This will protect these areas from future activities that impact air quality. Once an area is designated at Class 1, it cannot be redesignated. For further information, see Class 1 Air Quality Summary in the Lesson Resources section.

Standards:

Essential Understandings Regarding Montana Indians 3

The ideologies of Native American traditional beliefs and spirituality persist into modern day life as tribal cultures, traditions, and languages are still practiced by many American Indian people and are incorporated into how tribes govern and manage their affairs.

Montana Social Studies Content Standard 2

Students analyze how people create and change structures of power, authority, and governance to understand the operation of government and to demonstrate civic responsibility.

Science Content Standard 1

Students, through the inquiry process, demonstrate the ability to design, conduct, evaluate, and communicate the results and form reasonable conclusions of scientific investigations.

Teacher Preparation Resources:

- Gather index cards, petroleum jelly, clothes pin or hole punch and string for attaching the index cards.
- Obtain Montana map showing physical features, Class 1 Air Quality information.
- Find Montana Tribal Lands Slideshow picture of the Northern Cheyenne Reservation (note the air monitoring equipment).
- Identify several appropriate locations for measuring air pollution—these sites should be safe and accessible.
- Become familiar with air quality area designations based on summary in the Lesson Resources section.
- Locate the reservations with Class 1 Air.

Student Activity: Engagement

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1. Ask students to take four deep breaths.
2. Tell the class that you are going to be exploring the air we breathe!
3. Generate a list of things the students think might make the air dirty.
4. Write the list on the board.

Exploration

1. Tell the class that you are going to be scientists and do an experiment about the air in your community. You are going to be measuring how clean or dirty the air is in different places in the community.
2. Ask students what places do they think might have the most air pollution. Make a list of these.
3. Select four places that are safe and accessible to leave a “pollution catcher.” You may want to notify appropriate people in the community so that they do not discard the pollution catchers.
4. Write the location of the pollution catcher on one side of an index card. Write the school’s name and date of experiment. Put petroleum jelly on the other side of the card and number them 1 through 4.
5. Show students the cards and ask them what they think the petroleum jelly will do.
6. Let them make predictions about the cards—what will they look like in a week? Will they all look the same?
7. Take the class to the four locations and attach the pollution catchers.

Explanation

1. Collect the index cards independently or with the class.
2. Set them out on a table for the students to examine.
3. Have students record their observations on a paper by listing the numbers 1 through 4 and describing what they see on each one.

Elaboration

1. Ask students how they might protect the air.
2. Ask them who they think is responsible for protecting the air.
3. Explain that laws and rules protect some areas. Places that are considered Class 1 Areas have special protection to keep the air very clean.
4. Three Indian Reservations in Montana have been able to have their land designated as Class 1 Areas. Name these places—list some towns or geographic features of these reservations that students might be familiar with.
5. Show pictures of these reservations to the students using internet resources.

Evaluation:

1. Discuss the findings as a class.
2. Can they tell if one area of the community has more air pollution than the others?
3. If so, what is causing that area to be more polluted?
4. Could something be done to change that?
5. Evaluate students based on the Montana Standards and the Achievement Goal for this lesson.

Lesson Resources:

[Class 1 Air Quality Summary](#)

Source URL: <http://www.lessonsofourland.org/lessons/class-1-air-quality>

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Links:

- [1] <http://www.lessonsofourland.org/sites/default/files/Class%20%20Air%20Quality.pdf>
- [2] <http://www.lessonsofourland.org/grade-level/k-2nd-grade>
- [3] <http://www.lessonsofourland.org/flag/flag/lessons/360?destination=printpdf/360&token=I35tAWJie55vHk1pjj6ViFkelHN2VYgPsIlzpntJULQ>
- [4] http://www.lessonsofourland.org/flag/unflag/recently_viewed/360?destination=printpdf/360&token=I35tAWJie55vHk1pjj6ViFkelHN2VYgPsIlzpntJULQ
- [5] <http://www.lessonsofourland.org/subjects/science>
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- [9] <http://www.lessonsofourland.org/units/2-american-indian-land-tenure-history>