Missing in the Mountains

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Interdisciplinary Tools for Teachers

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Science: Jennifer's asthma can make an excellent starting point for a science lesson about asthma and the lungs.

A brief overview of information on lungs:

The purpose of your lungs is to get oxygen into the blood so it can be carried through your body and remove carbon dioxide from your blood. This is called *gas exchange*, and if your lungs are healthy, it's easy. The air goes in through your nose and mouth and travels down your windpipe and through large and small tubes in your lungs. These tubes or airways look a little like branches on an upside down tree. You probably breathe without even thinking about it. However, when children have an asthma episode, their airways get swollen, the muscles around the airways squeeze them even tighter, and the airways get sticky mucus in them. (Check websites from the National Institute of Health Information-Lungs, the American Lung Association, or the CDC-asthma, for more detailed information to present to your students.)

An experiment about lungs:

Question: What effect does exercise have on the lungs?
Materials: Timer, paper, pencils.
Directions:

1. Have students get out a piece of paper and a pencil. Tell them you are going to say go, and they should breathe naturally and make a mark on the paper each time they breathe in. Time them for one minute. Have them count the number of marks they made.
2. Have students stand and touch their toes twenty times or do thirty jumping jacks. Have them sit down, and time them again for one minute as they count the number of times they had to breathe in. How did the exercise affect their breathing?

Facts about asthma: Asthma is the most common chronic disorder in childhood. Asthma is the leading cause of children missing school. (Asthma and Allergy Foundation of America)

Social Studies and Math: Environment and Reading a Graph

How cold is cold?

Tell students that wind chill index is the temperature your body feels when the air temperature is added to the wind speed. As the wind gets stronger, it carries heat away from your body faster and makes you feel colder. For example, if the air temperature is 30 degrees, but the wind is blowing at 20 miles per hour, you would feel like it was only 17 degrees out, and you could get frostbite in just 30 minutes.

A math graph-reading activity:

Copy the wind chill chart from */www.nws.noaa.gov/om/windchill/*
Ask students to examine the chart, and answer these questions:

1. If the temperature was 25 degrees and the wind was blowing at 20 mph, would you feel colder than if the temperature was only 20 degrees and the wind was blowing at 25 mph? (answer no))
2. If the temperature was 25 degrees and the wind was blowing at 35 mph would you feel warmer or colder than if the temperature was 15 degrees and the wind was blowing at 5 mph? (It would feel the same.)
3. Would you get frostbite in only five minutes if the temperature was only 15 and the wind was blowing at 15 mph? If not, how long would it take? (30 minutes)

Reading: Questions to encourage students think about what they've read and understand consequences of actions.

1. What if Jennifer and Jarod hadn't met Eric?
2. What if they hadn't left the groomed ski slope?
3. What if Jennifer hadn't had asthma?
4. What if Jarod's snowboard hadn't broken?
5. Why didn't Jennifer and Jarod like being famous?

Writing Prompts:

1. Pretend you are Jennifer. Write a poem about how you felt when you were in the snow cave.
2. Pretend you a reporter. Write a newspaper article about Jennifer and Jarod's experience on the mountain.
3. Write an essay about bullying. Tell what you think people can do to stop it.

Art:

Draw a picture of Jennifer and Jarod getting rescued.
Create a poster that will warn people not to go out of bounds on ski slopes.
Create an anti-bullying poster.

Word Search: asthma, snowboard, darkness, avalanche, bindings, backpack, frostbite, thermos, freezing, ledge

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E V K C S E A C O S R
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