

## The Big Idea

My major learning experience was at Shelburne Community School, in a fifth grade class. Because of the schedule of the class, and that fact that I started in January, the complex instruction project I was assigned to implement in the class.

## Complex Instruction Assignment

This theme dealt primarily with a unit that was happening in the classroom at the time but I was interested in how the project on what themes I could do. The students had just completed a unit on the weather and some of the activities had connections to information they had learned during that unit.

Some of my activities focused around the idea that changes in weather affect people's lives. I also included an activity where the students experienced the Yule weather forecasts and I felt that it was important to have an activity that focused on the weather forecasts and the students were excited to go home and watch the weather forecasts.

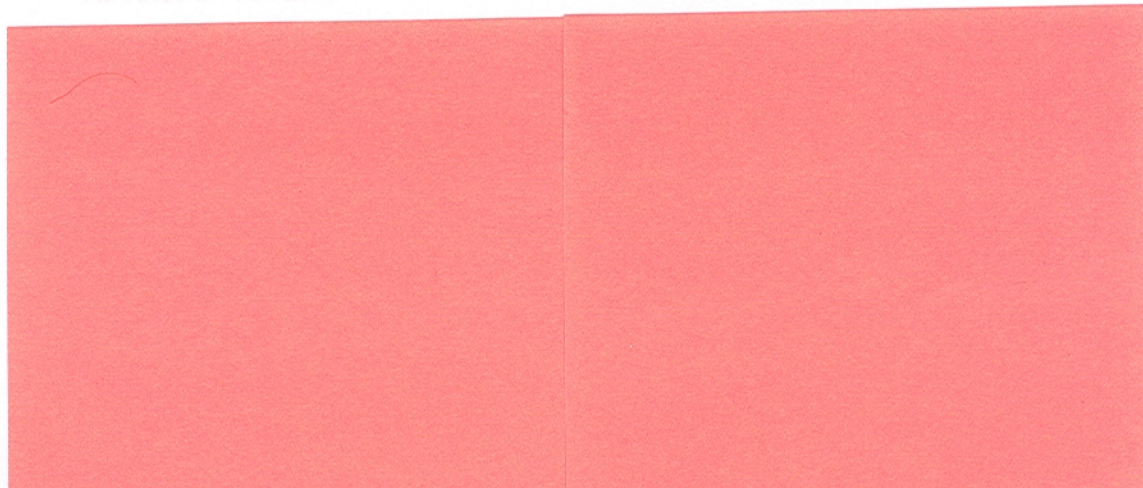


I felt that it was important to have an activity that focused on the weather forecasts and the students were excited to go home and watch the weather forecasts. When they had this particular book.

## Notes

Introduced the project and the students were excited to go home and watch the weather forecasts. The students were excited to go home and watch the weather forecasts.

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## The Big Idea

My student teaching placement was at Shelburne Community School, in a fifth grade class. Because of the schedule of the class, and that fact that I started in January, the complex instruction project was difficult to implement in the class.

The big idea for my CI rotation was "Changes in Weather Have Human Affects." ✓ This theme did not coincide with a unit that was happening in the classroom at the time, but I was limited by my mentor teacher on what themes I could do. The students had just completed a unit on astronomy, so some of the activities had connections to information they had learned during that unit.

All of my activities focused around the idea that changes in weather affect peoples' lives. I also wanted to make real world connection with my activities, so I included an activity about winter storms and the affects they have since they just experienced the Valentine's Day storm. I also included an activity that focused on weather forecasts and what important information we receive from them.

I felt that it was important to make these connections so that the students were continuing to think about the theme even when not in school. For example, when the students realized there was an activity about weather forecasts, they were excited to go home and watch the weather channel so they would be prepared for when they had that particular task.

## Norms

I introduced the norms two at a time from the time I began the skill builders until the last skill builder. I did not want to overload the students by giving them the norms and the roles all at once. ✓

I did a skill builder called broken squares (before I introduced the roles and norms) that made the students focus on the needs of their group members. I chose this skill builder first for several reasons. The first reason is that these students never work in groups, so I wanted to introduce an activity that would be a quiet introduction into group work. Another reason that I chose this was because I wanted to choose an activity that ✓

they would have to work hard at, but would be successful. I knew that they would have a very hard time being quiet, but they all worked through it. I also knew that if I gave them a discussion task, the students would be very frustrated with each other, and I wanted to start the unit out with a positive experience. The last reason I chose this is because I thought that the processing at the end would be a great time to talk about team work, helping your group members without doing the task for them, and paying attention to the needs of your group members. It sort of set the stage for the whole CI rotation. The students liked the activity even though it was silent, and we had a great discussion about what was hard, what strategies worked well, and how they could have worked better as a team.

I introduced the norms as rules for our CI rotation. I am glad I introduced them gradually instead of all at once because it gave them a chance to think about each individual norm and work with them. Before each skill builder I would choose a couple of norms to add to our CI Rules. I would introduce them and then ask the students what they think they mean. I would also have them give me an example of what it might look like if someone wasn't following the rule, and what it would look like if they were. The students were very accepting of the norms. I think they felt a sense of independence because they new that they had to work together and depend on each other, instead of the teachers. ✓

During the rotation I would hear students reminding each other of the norms. For example, in one group, they worked together to figure out how they would complete the task, but then split the work up between them. One boy finished early, and was trying to engage a student in a different group in a conversation, and I heard one of his team members say "\*\*\*\*, <sup>our</sup> group isn't done, so that means you aren't done." I was very surprised to hear this because I didn't think they would take the norms or "rules" seriously. ✓

Another situation that I saw a lot was when one person had a question; they asked everyone in the group first, before approaching me for an answer. The majority of the time it worked too. If the students did approach me I would just tell them that they have the right to ask anyone in their group for help.

## Roles

Introducing the roles was very interesting. The very first day I introduced the roles, the students thought they were silly, and mocked them. However, after doing the first skill builder with the roles, the students were very concerned about being able to try different roles. The students were very concerned about what their roles were going to be, but they had a very difficult time using them I their groups. ✓

During the CI rotation the roles I used were facilitator, harmonizer, reporter, and recorder. I did have materials manager, but after a situation where I heard some put-downs, I chose to trade it for harmonizer. I also discussed with the students why I made that change.

I had three groups of four and two groups of three. For the smaller groups, one person would have two roles. I also switched the roles every day, so that everyone had the chance to be a different role. I made a large chart that was hanging on the wall that showed what role they would be for that day. They also had stickers that had the roles written on them. The student experimented by putting the stickers on their foreheads, noses, hair, etc. I think the students in my class would have taken the roles more seriously if they did not have to wear the name tags. ✓

The two roles that were the hot commodities were reporter, and facilitator. I have a lot of very opinionated students in my class so naturally they all wanted to be facilitator or reporter, which is why I assigned the roles. Before each skill builder and CI session I would review the roles, and what their responsibilities would be.

Overall, the students did benefit from using the roles. Even though they didn't take them as seriously as younger students might, they still helped keep the groups organized and focused on the tasks. They also made everyone feel like they were an important part of the group because they all had a "job." ✓

## Multiple Abilities

I introduce the multiple abilities before the CI rotation started. On the first day I hung up a poster that had three multiple abilities on them. I multiple abilities I wrote were neat handwriting, ability to speak clearly, and the ability to draw pictures. I only wanted to give a couple so that they could come up with the rest on their own.

Each day before and after the session, we would add to the list. I would ask them "What are some abilities that your groups had that made you successful at your task?" They came up with things that I didn't even think of. Some examples are ability to organize the project, making 3-d models, visualizing the end product, reading and following directions, the ability to pick out important details from the resource cards, communicating through pictures, and using technology like PowerPoint. They did also include others like team work, listening skills, and communication with teammates.

## CI Rotation Activities

I had five different activities that the students rotated through for five days. Each group completed each activity on a different day. The first activity was to complete a weather forecast. The multiple abilities that I had in mind for this activity were being able to communicate orally, being able to act, knowing what important information is delivered through weather forecasts, and being able to organize a presentation.

The second activity was creating a structure that could withstand the effects of a flood. The students had clay, Popsicle sticks, glue, cardboard, and many other materials to complete the task with. I multiple abilities I had in mind for this activity were being able to create a 3-d model, being able to visualize the final project before construction began, and being able to use information they knew about floods and natural disasters to create their houses.

The third activity was figuring out, and explaining what the four main ingredients of weather are. The students had to use the resource card to figure out what they were, and then had to demonstrate how they interact with each other to create weather. The

students were given a choice of creating a poster, or a PowerPoint presentation. The multiple abilities I had in mind for this activity were being able to pick important information out of a text, being able to use PowerPoint, and being able to create clear descriptive illustrations.

The fourth activity was to create a lesson to teach 3<sup>rd</sup> and 4<sup>th</sup> graders how to read a thermometer. The students were given a thermometer, poster board, and drawing materials. The multiple abilities I had in mind for this activity were being able to read a thermometer (distinguishing what each mark means), creating clear pictures, and being able to organize the lesson.

The fifth lesson was to create a safety brochure that addresses how to stay safe during a winter storm. The multiple abilities I had in mind for this lesson were to follow directions, being able to make the brochure eye catching and attractive, and being able to communicate clearly through writing.

## CI ROTATION

The first day of the CI rotation was great. I had spent a lot of time preparing the students for the rotation. We did a lot of skill builders, and had talked a lot about what good group work looks like and sounds like. I also gave the students an example activity card from a different rotation to look at and discuss. We talked about what kinds of information were on the card, and where to find specific information.

The students were very excited to start the rotation. The first day was hectic, but everyone was on task. The part they loved the most was the sharing out at the end. The sharing out was an important part because it gave the activities a sense of value to them. I even extended the amount of sharing time so that everyone could share every day.

The second day was crazy. The students were so excited that they had a hard time completing the tasks. They spent less time reading the activity and resource cards, and more time talking and socializing. They also started to get less respectful to the other groups when they were sharing out. At the end of the rotation each group shared one thing that would help the next group do the task. We also talked about what they could

have done differently to make them more successful. Also, at this point I did not want to take away their share time, so I reminded them that the next day I expected them to be a much better audience when everyone was sharing.

The third day went well until the sharing out time. These fifth grade students are always trying to be funny, and show off for their peers, so the share time became a comedy hour. Not only were the audience members being disrespectful, the people presenting were laughing, and joking around while they were sharing. I tried sending people out of the room, and that worked for a couple of minutes, but definitely wasn't a permanent fix. During the wrap up I told the students that if they couldn't share their projects seriously, and if the audience couldn't be respectful, we would not share any of them for the rest of the rotation.

The fourth and fifth days were great. I began the rotation by reminding them that when we share they won't have anymore reminders to be on their best behavior, this was their only warning. I told them that if I had to speak to anyone even once, the sharing would be over. This worked immediately. The students were right on task from this point on. Overall, I thought the rotation was a success. It was good to finally see the students excited to learn about something.

## Individual Vignettes

NB was the first student that I identified during my classroom status project. He has the lowest status in the class, but is an excellent reader and writer. He does very well in all other subjects as well. Unfortunately, NB does not have any friends other than his twin brother in the classroom. If nobody told you they were twins, you would never know because even they don't really interact during the day.

After doing the status survey I thought that this activity would really help NB because it would give him some structured time during the day to interact with his peers. During the rotation I really tried to keep my eye on his group each day to see how they were all interacting together. The first day didn't go so well because he had a music solo to try out for that started when the rotation started so he missed the first half of the activity. When he came back he asked me what to do, and I told him what his role was

and that he could ask the facilitator to explain to him what their activity was and what they were working on. I surprised to see that the facilitator did this without giving NB any grief.


I had the opportunity to assign competence to him several time during the rotation. The first time what when they were working on the safety brochure. They were creating several different pages to their brochure and everyone was working on a different page. On the page NB was working on, he was using large writing, and bright markers, while two of the other members were using pencils. I went over and said: "I'm noticing here that NB is using big writing and bright colors to make his page. This will make the brochure more eye catchy and easier to read, which would make more people take your brochure."


The second time was on the second day. NB's group was starting the task without even reading the activity card or resource cards. They thought they knew what to do because they had seen the other group's projects already. They were all arguing over what the project should be, and I heard NB say: "Hey guys, on the resource card it tells us things to include in our forecast." This comment went totally unnoticed so I said: "I'm noticing that NB is using the resource card to figure out what information should be in the forecast. That is going to be very helpful to your group when you start making your forecast." After this the other group members said things like "Oh yea!"

Overall I think this was a positive experience for him. He was actively participating, instead of wandering around the room. He was also excited to work with his classmates. Towards the end, his group was very good about including everyone in the activity and making sure everyone was involved.

RL had the second lowest status in the class. He was recently diagnosed with ADHD, and has a really hard time being focused in school. During the rotation I only had one opportunity to assign competence, because the majority of the time, he was actively participating to my surprise. He also missed the first day completely because he was sick. On the second day I explain that we had started the rotation, and briefed him on what happened the day before. During the second day, his first day, he was drawing on a piece of paper (like he usually does in class), and he is a terrific artist. Luckily for me, his group was working on the thermometer lesson, so I went up and said: "I'm noticing that




RL is making some great art work on his paper. His drawing skill could really help you create a visual for your lesson.” He wasn’t drawing things that were related to the task, but I saw it as an opportunity. I was pleased to see that he drew and colored and great thermometer to use during their presentation, and he even explained what the marks, and letters stand for on it. I’m still surprised at what assigning competence can do! 

CC was one of the higher status students in the class, but is painfully shy. This often interferes with her school work. She rarely raises her hand, or participates in class even though she always pays attention, and knows the answers. I thought she could benefit from having a leadership role in the groups so I made sure she was facilitator two times, and reporter once. I was surprised to see that she did a lot of talking and discussing in her group. I made sure to put her in a group with one other girl, so that she would be a bit more comfortable taking risks. She was very active in the group, and even presented in front of the class, even though I could tell she was a bit embarrassed. 

IC was an interesting student to watch during this whole process. He was in a group with only two other classmates, who he rarely interacts with. On the first day it was clear that he was unhappy about who his group members were. He basically refused to participate, and when they shared out, he stood off to the side and wouldn’t speak. Also, on this day, his role was recorder, and I think that had a huge part in how he was acting on the first day. The students in his group even tried to get him to participate, but he just refused.

On the second day, he was facilitator. What a change! He did exactly what I thought he would do, and took over the activity! I actually went in to assign competence to one of his group members because he had a great strategy for building the structure, and IC was so wrapped up in his own ideas that he didn’t even notice. After the second day, he did participate even, when he had more submissive roles again.

The first three days were a bit rocky in terms of him trying to control everything, but the last two days were much better, and I heard a little bit of discussion between him and his teammates. Overall I think this was a positive experience for him, but I don’t think he got as much out of it as he could have. He was too focused on who his group members were, and impressing his friends. I honestly don’t know what more I could have done to encourage him to participate as a team. 

## Complex Instruction Pre/Post Test Results

Student	Post-Test		% Gain
	Pre-Test%	%	
IC*	35	100	65
WK	28	92	64
CC*	42	100	58
JS	42	100	58
MW	28	100	72
LD	50	100	50
AP	28	71	43
EM	14	71	57
ND	35	85	50
MF	21	85	64
EG	14	100	86
CG	50	92	42
AW	21	100	79
AB	14	100	86
AH	42	100	58
RL*	35	71	36
NB*	7	85	78
RA	42	85	43
<b>Average</b>			
<b>Average=30</b>	<b>Average=91</b>	<b>Gain=61</b>	

*It would have been helpful to have the order here. It looks like this may be the status order top to bottom?*

\* Students noted from status survey report.

The average score of the class pre-tests were 30%. The average post-test scores were 91%. I was very excited to see a 61% increase in their scores. I was worried about how successful the rotation would be in terms of learning content because the rotation wasn't a part of a larger unit.

*wow!*

I was also happy to see that RL had a 36% increase on his scores, which was more than I had expected. Also, NB went from a 7% on the pre-test, to an 85% on the post-test. I thought that was incredible. It really demonstrates how powerful CI can be. I'm excited to try it again, but as part of a larger unit.

### **Personal Reflection**

Planning and implementing this CI rotation was one of the most valuable tools I have learned throughout this whole program. The results speak for themselves about how powerful this type of learning can be. I was very excited to see the improvement in the two students' scores who had the lowest status in the class. There were some other students who shocked me in terms of how much they improved as well.

I think CI would be even more effective if it was integrated into a larger unit or theme. I'm very excited to try it again when I can have more freedom, and be more creative in terms of my big idea and activities.

I'm glad I had this opportunity to try it out in school where I could get the support I needed to make it successful. I'm also thankful that I got to hear about other student teachers experiences from different grade levels. It was interesting to hear what worked and what bombed in different grades. I'm taking away a lot from this project, not just from my experience, but from the peers as well.

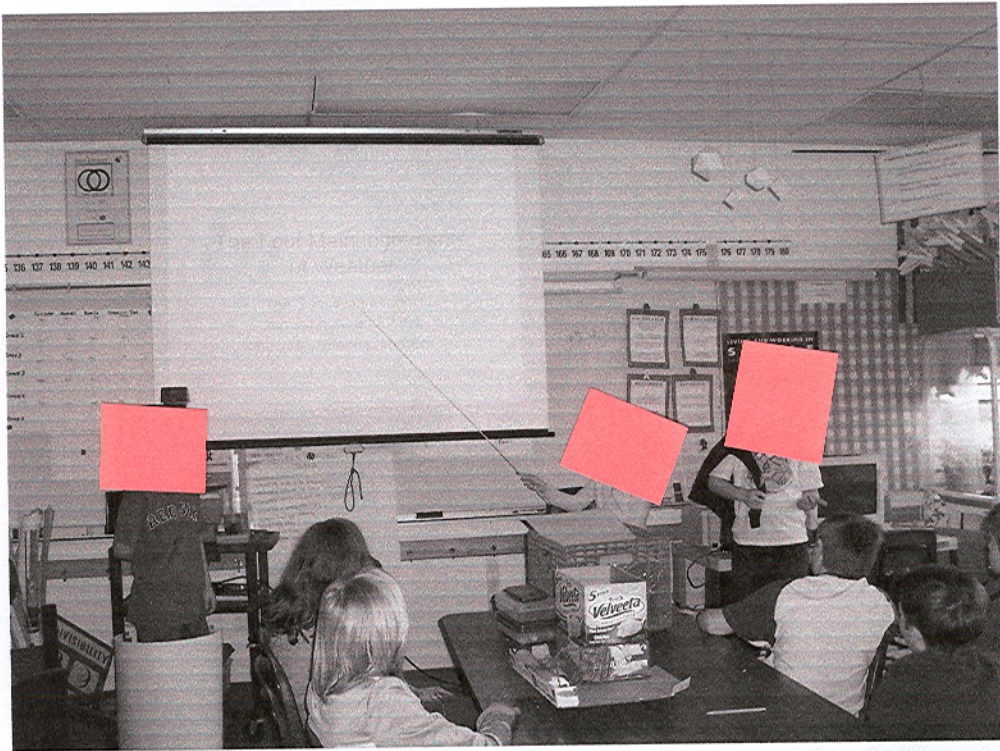


Reporting Out



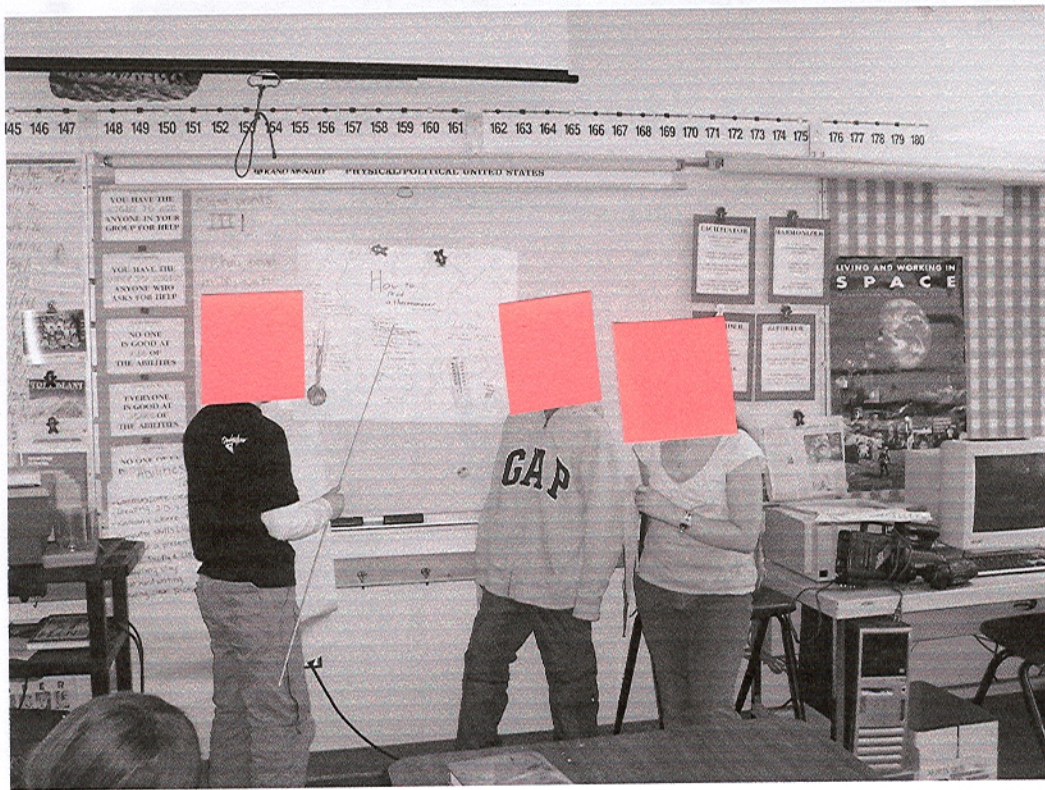
Building a flood resistant structure

Thermometer Lesson



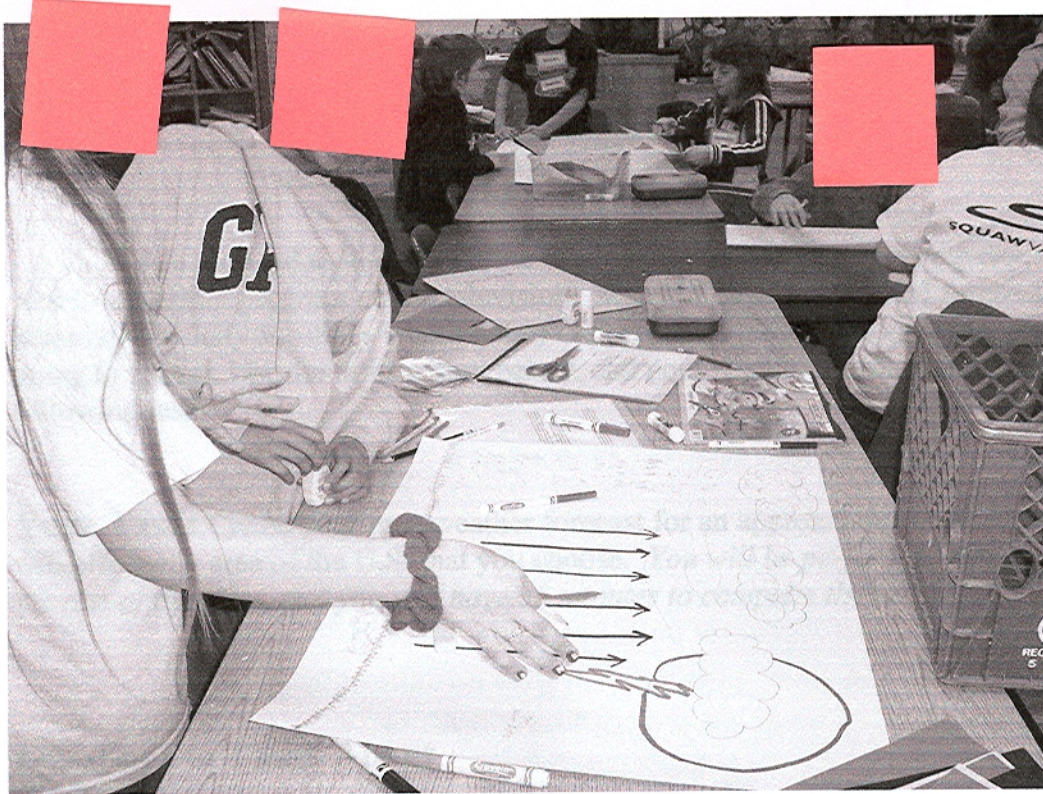
PowerPoint Presentation

The four main ingredients that cause wear...

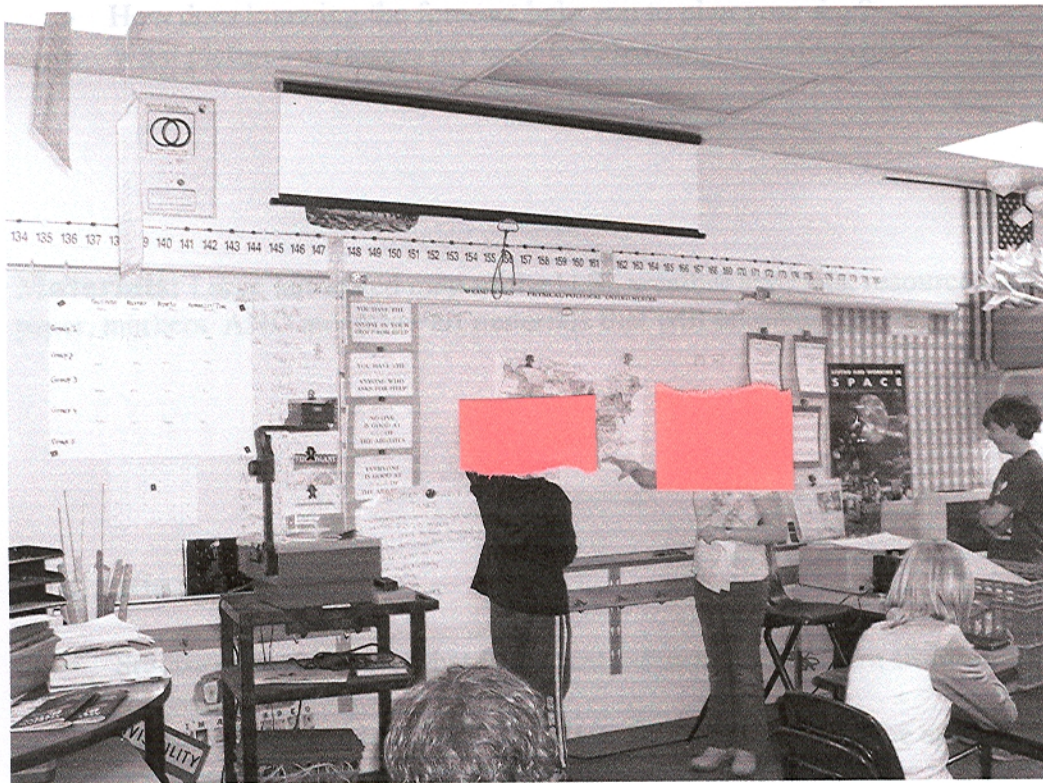


Thermometer Lesson

his picture, you can also see the thermometer...



The four main ingredients that cause weather.



Weather forecast. (In this picture you can also see the norms, roles and role chart.)

## Changes in Weather Have Human Effects

Activity One: Weather or Not Here I Come!

### Activity Card

\*\*\*\*\*

When we need to know what the weather is going to be on a given day, most of us turn to a weather program on the television. Many of us depend on the forecast for planning our daily activities whether they are traveling, planning a vacation, or even going to school. Use the information below, and your resource card to complete the following task.

**Your Task:** Create your own weather forecast for an approaching weather event that will affect any area of the U.S. that you choose. *You will be performing your forecast to the rest of the class, and you will have 35 minutes to complete the task.*

### Questions to Think About

- What important information does the forecast give you?
- How does knowing the forecast help you to plan your day?
- What pictures or images are used to help explain the forecast?

**Materials:** Large laminated map of the U.S., weather symbols, resource card, drawing paper, markers, AND any other art materials that will help you.

### Evaluation Criteria

- Students should know what important information we learn from weather forecasts.
- Your forecast should include important information about the approaching storm.
- It is clear that everyone in your group participated.

## Changes in Weather Have Human Effects

Activity One: Weather or Not Here I come!

Activity Card

### Changes in Weather Have Human Affects

Activity One: Weather or Not Here I come!

Resource Card

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The temperature of the air around us changes from day to night. Temperature can have a serious impact on us if it is not too hot or cold. If the temperature is too hot it can cause dehydration or heat stroke. If the temperature is too cold it can cause frostbite or hypothermia. Luckily, we can measure temperature by using a thermometer. Use the information below.

### Weather Forecasts Could Include:

- Where the storm is coming from
- Day and night time temperatures
- Accumulation of precipitation ( in inches or feet)
  - Potential hazards for people
  - School closings
  - Wind speeds

\* Be creative!

**Materials:** Thermometer, markers, poster paper, AND any other art materials that will help you.

### Evaluation Criteria

- \* Students will be able to clearly explain how to read a thermometer.
- \* Students will be able to clearly explain what temperature is.
- \* It is clear that everyone in the group participated.



## Changes in Weather Have Human Effects

### Activity Two: Too Hot or Too Cold?

#### Activity Card

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The temperature is how hot or cold the air is on a given day. Temperature can have a serious impact on us if it is too hot or too cold. If the temperature is too hot it can cause dehydration, or heat stroke. If the temperature is too cold it can cause frostbite, or hypothermia. Luckily, we can measure temperature by using a thermometer. Use the information below, and your resource card to complete the following task.

*Your Task:* Your group has been selected to design a property for a family whose house and property was destroyed by a forest fire. The family wants to rebuild their home on the same piece of land on the Pacific coast, within 100 yards of the ocean. Your group

**Your Task:** The thermometer in the office is broken, so it will no longer be announced if you have indoor recess or outdoor recess. Each student must decide whether or not it is safe to go outside for recess. A teacher of a 3<sup>rd</sup> and 4<sup>th</sup> grade class is having trouble teaching her students how to read a thermometer, and she asked your group for help. Your group must create a lesson to teach the class what temperature is, and how to read a thermometer. **Remember, some 3<sup>rd</sup> and 4<sup>th</sup> graders might be helped by images as well as words.** *You will be practicing your lesson in front of your class, and you have 35 minutes to complete it.*

**Materials:** Thermometers, makers, poster paper, AND any other art materials that will help you.

*Materials:* Thermometers, makers, poster paper, AND any other art materials that will help you.

#### Evaluation Criteria

- \*Students will be able to clearly explain how to read a thermometer.
- \* Students will be able to clearly explain what temperature is.
- \* It is clear that everyone in the group participated.

- The thermometer was made with a clear scale and labels.
- It was used to measure the temperature of the room.

# Changes in Weather Have Human Effects

## Activity Three: Washed out!

### Resource Card

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#### Common Damage Caused by Floods

- Interior damage (carpets, wall paper, paint, etc.)
- Exterior damage
- Structural damage (house can be pushed off foundation)
- Personal belongings
- Electrical damage
- Damage to appliances, and furniture
- Damage to your property (uprooted trees, deposits of mud and sand, etc)

#### Questions to Think About

- Exposure to toxic water
- Damage from mold, mildew, and rot

Materials: Poster board, magazines to cut pictures from, markers, glue sticks, construction paper, and any other art supplies you'd like to use.

#### Evaluation Criteria

- \* Your safety brochure shows thoughtful suggestions for how to keep safe during a storm.
- \* It is clear that you understand the dangers of a winter storm and create.
- \* It is clear that all group members participated in creating your safety brochure.

## Changes in Weather Have Human Affects

### Activity Four: Walloped by Winter!

#### Activity Card

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Winter storms provide for a great ski/snowboard season, but sometimes their affects can be hazardous. The Northeast is know for getting walloped with winter storms such as the ice storm of 1998, and the recent snow storm that happened on Valentine's Day this year. Some hazards from storms could include, impassable roads, loss of power, frozen pipes, car trouble, etc.

#### **Your Task:**

Your group has been hired by the Federal Emergency Management Agency (FEMA) to create a safety brochure that will be mailed to all Vermonters. The purpose of your brochure is to educate people about how to stay safe during a winter storm. *Your brochure will be on display for your classmates to view, and you have 35 minutes to complete it.*

#### **Questions to Think About**

- \* What would you need to have at home if you were home bound for several days?
- \* What would you need to survive if you were stranded in your car somewhere?
- \* What could you do to prepare before a storm hits?

**Materials:** Poster board, magazines to cut pictures from, markers, glue sticks, construction paper, AND any other art supplies you choose to use.

#### **Evaluation Criteria**

- \* Your safety brochure shows thoughtful suggestions for how to keep safe during a storm
- \* It is clear that you understand the dangers a winter storm can create
- \* It is clear that all group members participated in creating your brochure

## Changes in Weather Have Human Effects

### Activity Five: What is Weather?

#### Activity Card

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There are many different types of weather that affect our daily lives. However, there are four main ingredients that cause weather. Use the information below, and your resource card to complete the task.

**Your Task:** Use the information provided to figure out the four main ingredients that cause weather, and how they interact to cause weather. Discuss and decide how you will present your findings to the group. *You may present a poster, or a PowerPoint presentation to the class, and you have 35 minutes to complete this task.*

#### Questions to Think About:

- How do the four main ingredients work together to cause weather?
- Where does weather happen?
- What would happen if there wasn't a way to spread the sun's heat?

**Materials:** Poster paper, markers, construction paper, computer, resource card.

#### Evaluation Criteria

- Students will be expected to present their information in a clear and knowledgeable way.
- Students will be able to explain the four main ingredients in weather, and how they work together.
- It must be clear that all group members participated.

## Changes in Weather Have Human Effects

### Activity Five: What is Weather?

#### Resource Card

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The four main ingredients which cause weather are the sun, the atmosphere, water vapor, and wind. These all work together, spreading the Sun's heat around the world and making clouds, rain, and snow. Weather is an endless cycle of events. It happens all around us all the time fitting together like a jigsaw.

#### Sun

The Sun is the key to the world's weather. The angle of the sun light affects the temperature of the earth. All of the earth's heat and light come from the sun. Without the sun the earth would be very dark. The sun's rays shine down on the earth, and warm the earth's surface. The energy (heat) coming from the sun provides energy for making weather. The energy from the sun is not equal everywhere on earth, so the temperature is different in different places.

#### Wind

Wind is air in motion. It is produced by the uneven heating of the earth's surface by the sun. Since the earth's surface is made of various land and water formations, it absorbs the sun's radiation unevenly. Two factors are necessary to specify wind: speed and direction.

As the sun warms the Earth's surface, the atmosphere warms too. Some parts of the Earth receive direct rays from the sun all year and are always warm. Other places receive indirect rays, so the climate is colder. Warm air, which weighs less than cold air, rises. Then cool air moves in and replaces the rising warm air. This movement of air is what makes the wind blow.

## **Water Vapor**

Of the 326 million cubic miles of water on our planet, 3,100 cubic miles are found in the atmosphere. As water evaporates from the oceans, it enters the atmosphere and collects on small particles in the air as droplets or ice (a process called condensation) and forms clouds. When enough water or ice collects in a cloud, it rains. If the temperature is low enough, it snows.

## **The Atmosphere**

In the darkest regions of deep space, the temperature is a chilly  $-450^{\circ}$  Fahrenheit. Closer to our Sun, temperatures reach thousands of degrees Fahrenheit. What makes Earth's climate so moderate? Separating Earth from the extreme and inhospitable climate of space is a 500-mile-thick cocoon of gases called the atmosphere.

All planets have an atmosphere, a layer of gases that surrounds them. The Sun's atmosphere is made up of hydrogen, while Earth's is made up primarily of nitrogen and oxygen. Carbon dioxide, ozone, and other gases are also present. These gases keep our planet warm and protect us from the direct effects of the Sun's radiation. The weather occurs in the layer of the atmosphere called the troposphere which is from 0-8 miles above the earth's surface.