Computer Lab Activity
for
Catwings
by Ursula K. Le Guin

A Friendly Letter to Mrs. Tabby

Objective:
- The students will be able to write a friendly letter using the correct format.

Essential Skills Focus:
- Proficiency 4.7: Identifies the 5 parts of a friendly letter
- Proficiency 5.2: Constructs a friendly letter

Special Preparation:
- This activity should be used after reading Catwings.
- You will need to teach the parts of a friendly letter if this has not been studied in class. If the skill has already been taught, it might be helpful to review the friendly letter format.
- You might need to review how to properly use the Microsoft Works program.

Materials:
The students will need:
- a computer with Microsoft Works
- a rough draft of the letter (to be prepared before entering the lab)

Introduction:
Suggested teacher dialogue:
"In the book, Thelma, James, Roger, and Harriet found a new home. Now you are going to pretend that you are one of the kittens and write a friendly letter home to Mrs. Tabby. You will tell her about an adventure that you had on the way to your new home."

Classroom Activity:
- Have the students write a rough draft of the friendly letter. Be sure they include all of the components: heading, greeting, body, closing, and signature.
- Edit and correct the letters before going into the computer lab.

Computer Lab Activity:
- Be sure the students take their rough drafts to the lab with them.
- Instruct the students to use Microsoft Works and open a new word processor document.
- Next, have the students begin to type their rough drafts into the computer.
• When the students finish, they should spell check the document and make sure they have copied the draft correctly. They should raise their hand and ask the teacher’s permission before printing.

**Evaluation:**
• The students will be evaluated on their correct use of the friendly letter format.
Computer Lab Activity
for
Desert Giant
by Barbara Bash

Cactus Facts Book

Objective:
• The students will be able to write a fact about the saguaro cactus gathered from research in the book Desert Giant.
• The students will be able to create an illustration to correspond with the fact.

Essential Skills Focus:
• Proficiency 6.2: Distinguishes fact/opinion
• Proficiency 7.1: Gives and follows directions
• Proficiency 8: Recognize the interrelatedness of language, literature, and culture

Special Preparation:
• This activity should be used after reading Desert Giant.
• You might need to review how to properly use the Kid Pix program.

Materials:
The students will need:
• a computer with Kid Pix
• a pencil (to be used during the classroom activity)
• a piece of paper (to be used during the classroom activity)
• Desert Giant
• rough draft of book page (to be used in the computer lab)
• crayons or colored pencils (to be used after the computer lab)

Introduction:
Suggested teacher dialogue:
"We just finished reading Desert Giant. Now we are going to create a class book similar to the one we just read. You are going to choose a fact from the book and create an illustration. Once everyone has finished coloring their illustrations, we will create a class book to share with future classes. Let’s dig in to some cactus facts!"

Classroom Activity:
• Allow the students to browse Desert Giant and choose a fact they would like to include in the class book.
• After students have chosen a fact, instruct them to copy the fact onto a piece of paper. This paper will be used in the computer lab.
• Have the students create a rough draft of the book page and corresponding illustration.
• Edit and correct the facts before going into the computer lab.

Computer Lab Activity:
• Be sure the students take their rough drafts to the lab with them.
• Instruct the students to use Kid Pix and open a new drawing.
• Next, have the students begin to type their facts into the computer using the text tool.
  *Note: In order for the students to type the text rather than using the letter stamps, they need to hold the Option and Open Apple keys while clicking on the letter button on the left side of the screen. This offers them a choice of the font they use and allows them to enter the text using the keyboard.*
• After typing their fact, the students should create a picture to illustrate the fact.
• When the students finish, they should spell check the document and make sure they have copied the fact correctly. They should raise their hand and ask the teacher's permission before printing.
• Upon returning to the classroom, the students may color their illustrations using crayons or colored pencils.

Evaluation:
• The students will be evaluated on their ability to research facts in the book and create corresponding illustrations.

Note to Teacher:
• After all the students have finished their facts and illustrations, you should collect them and compile them into a class book.
Computer Lab Activity
for
Disaster! theme
Eyewitness Reporter

Objective:
• The students will be able to write a news paragraph from the point of view of an eyewitness.

Essential Skills Focus:
• Proficiency 4.1: Spells grade level appropriate words
• Proficiency 4.2: Uses punctuation (., ?, !, )
• Proficiency 4.5: Recognizes complete subject and predicate
• Proficiency 5: Write for different purposes and audiences producing a variety of forms

Special Preparation:
• This activity should be used after completing the Disaster! basal theme.
• You will need to teach or review the important points covered in news articles: who, what, where, when, why, and how.
• You might need to review how to properly use the Microsoft Works program.

Materials:
The students will need:
• a computer with Microsoft Works
• a rough draft of the paragraph (to be prepared before entering the lab)
• a copy of Disaster! stories to refer to when writing their draft
• Optional: crayons or colored pencils (to be used after the computer lab activity)

Introduction:
Suggested teacher dialogue:
“Throughout this theme, we studied different types of disasters. We read about the sinking of the Titanic, the eruption of Mt. Vesuvius, and the great molasses explosion. Today we are going to pretend that you actually witnessed one of these events. You are going to write a news paragraph about the event and create a catchy headline. You can use your books to gather details, but your imagination is your most important tool!”

Classroom Activity:
• Have the students write a rough draft of the news paragraph. Be sure they include all of the components: topic sentence, supporting details, and a headline. Also remind them to include the who, what, when, where, why, and how of the event.
• Edit and correct the paragraphs before going into the computer lab.

**Computer Lab Activity:**
• Be sure the students take their rough drafts to the lab with them.
• Instruct the students to use Microsoft Works and open a new word processor document.
• Next, have the students begin to type their rough drafts into the computer.
• When the students finish, they should spell check the document and make sure they have copied the draft correctly. They should raise their hand and ask the teacher's permission before printing.

**Optional Classroom Activity:**
• The students can create illustrations to accompany their news paragraphs.

**Evaluation:**
• The students will be evaluated on their spelling, punctuation, and use of complete sentences.
Objective:
- The students will be able to write an imaginary recipe.
- The students will be able to create an illustration to correspond with the recipe.

Essential Skills Focus:
- **Proficiency 5:** Write for a variety of purposes and audiences producing a variety of forms
- **Proficiency 6.4:** Distinguishes between reality/fantasy

Special Preparation:
- This activity should be used after reading Freckle Juice.
- You might need to review how to properly use the Kid Pix program.
- If available, have simple recipes on hand for students to view.

Materials:
The students will need:
- a computer with Kid Pix
- crayons or colored pencils (to be used after the computer lab activity)
- a rough draft of their recipe (to be used in the computer lab)

Introduction:
Suggested teacher dialogue:
"Andrew wanted freckles like Nicky, so Sharon sold him her secret freckle juice recipe. You are going to think of something you would like to have and write a recipe for it. It can be a recipe for a different hair color or the new yo-yo you want. Who knows? If your recipe works, maybe you could sell it!"

Classroom Activity:
- Have the students write a rough draft of the recipe. They may use numbers for measurements if they choose.
- Edit and correct the recipes before going into the computer lab.

Computer Lab Activity:
- Be sure the students take their recipes to the computer lab.
- Instruct the students to use Kid Pix and open a new drawing.
• Using the text tool, the students will type their recipes on the computer. *Note: In order for the students to type the text rather than using the letter stamps, they need to hold the Option and Open Apple keys while clicking on the letter button on the left side of the screen. This offers them a choice of the font they use and allows them to enter the text using the keyboard.*
• After typing their recipes, the students should create a picture of the results of their recipe.
• When the students finish, they should raise their hand and ask the teacher’s permission before printing. Make sure that the students use a minimal number of stamps and colors so that printing time will be minimized.
• Upon returning to the classroom, the students have the option of coloring their pictures.

Evaluation:
• The students will be evaluated on their ability to create an imaginary recipe and a corresponding illustration.
Objective:
- The students will be able to write a friendly letter using the correct format as a response to literature.

Essential Skills Focus:
- Proficiency 4.7: Identifies the 5 parts of a friendly letter
- Proficiency 5.2: Constructs a friendly letter

Special Preparation:
- This activity should be used after reading Nettie's Trip South.
- You will need to teach the parts of a friendly letter if this has not been studied in class. If the skill has already been taught, it might be helpful to review the friendly letter format.
- You might need to review how to properly use the Microsoft Works program.

Materials:
The students will need:
- a computer with Microsoft Works
- a rough draft of the letter (to be prepared before entering the lab)
- a copy of Nettie's Trip South to refer to when writing their draft

Introduction:
Suggested teacher dialogue:
"In Nettie's Trip South, Nettie wrote a letter to Addie about what she saw on her trip. You are going to imagine that you went to a slave auction like Nettie did in the story. Then you are going to write about your experiences, thoughts, and feelings in a letter to a friend. You need to tell what you saw, felt and heard while on your trip. You may write from the point of view of the slave, a buyer, a seller, or an observer. Use details from the book to create your letter and use your imagination!"

Classroom Activity:
- Have the students write a rough draft of the friendly letter. Be sure they include all of the components: heading, greeting, body, closing, and signature.
- Edit and correct the letters before going into the computer lab.
Computer Lab Activity:

- Be sure the students take their rough drafts to the lab with them.
- Instruct the students to use Microsoft Works and open a new word processor document.
- Next, have the students begin to type their rough drafts into the computer.
- When the students finish, they should spell check the document and make sure they have copied the draft correctly. They should raise their hand and ask the teacher's permission before printing.

Evaluation:

- The students will be evaluated on their correct use of the friendly letter format.
Computer Lab Activity
for
Oink, Oink Oink theme

A ‘‘Tail’’ to Tell

Objective:
• The students will write a story using the steps of the writing process.
• The students will be able to create a final copy of the story using a word processing program.

Essential Skills Focus:
• Proficiency 4.8: Uses the writing process to write a paragraph using a topic sentence with supporting details.
• Proficiency 5.1: Produces a story or report on a given topic.

Special Preparation:
• This activity should be used after completing the Oink, Oink Oink basal theme.
• You will need to teach the proper steps of the writing process if this has not been studied in class. If the skill has already been taught, it might be helpful to review the process.
• You might need to review how to properly use the Microsoft Works program.

Materials:
The teacher will need:
• any classic version of The Three Little Pigs
• fractured versions, such as The True Story of the Three Little Pigs or The Three Little Wolves and the Big Bad Pig (available in the basal)
• versions from different cultures, such as The Three Little Javelinas or The Three Little Hawaiian Pigs and the Magic Shark (both available in the basal)
• blank story map for each student

The students will need:
• a computer with Microsoft Works
• rough draft of the story (to be prepared before entering the lab)

Introduction:
Suggested teacher dialogue:
“We read many different versions of the story The Three Little Pigs. Today it is your job to write a sequel to the original story or a fractured version of it like The True Story of the Three Little Pigs. You are going to work on it in steps so that the job is easier. Finally, we will go to the computer lab and type the stories. Let’s get started. You have a ‘‘tail’’ to tell!”
**Classroom Activity:**
- Have the students read different versions of *The Three Little Pigs*. (Refer to the above list)
- Distribute copies of the blank story map. Work with the students, if necessary, to complete the story maps for their own original story. It can be a sequel or a fractured version.
- Have students use their story maps to write a draft of their stories.
- Next, have students read their drafts aloud to a writing partner. Encourage them to ask questions such as "Is my writing clear?" or "Is there anything I should add?"
- Finally, have students make any necessary revisions and corrections.

**Computer Lab Activity:**
- Be sure the students take their rough drafts to the computer lab.
- Instruct the students to use Microsoft Works and open a new word processor document.
- Next, have the students begin to type their rough drafts into the computer.
- When the students finish, they should spell check the document and make sure they have copied the draft correctly. They should raise their hand and ask the teacher’s permission before printing.

**Evaluation:**
- The students will be evaluated on their creativity, proper use of the writing process, correct spelling, and punctuation.

**Note to Teacher:**
- If desired, the final drafts of the stories can be compiled into a class book.
Computer Lab Activity
for
Sarah, Plain and Tall
by Patricia MacLachlan

Illustrating Seashell Facts

Objective:
- The students will be able to write two facts about seashells gathered from research packets
- The students will be able to create illustrations to correspond with the facts.

Essential Skills Focus:
- **Proficiency 6.2:** Distinguishes fact/opinion
- **Proficiency 7.1:** Gives and follows directions
- **Proficiency 8:** Recognize the interrelatedness of language, literature, and culture

Special Preparation:
- This activity should be used after reading Chapter 4 of Sarah, Plain and Tall or at the completion of the book.
- You might need to review how to properly use the Kid Pix program.
- If available, have seashells on hand for students to view.

Materials:
The students will need:
- a computer with Kid Pix
- **Optional:** crayons or colored pencils (to be used after the computer lab activity)
- a pencil (to be used during the classroom activity)
- a piece of paper (to be used during the classroom activity)
- Internet research packet

Introduction:
Suggested teacher dialogue:
"Sarah is from the coast of Maine, so she knows a lot about seashells. In this activity, you will have a chance to research different facts about seashells. You will write down two facts about seashells that you learn from doing research. Then you will create illustrations to go with each of the facts."

Classroom Activity:
- Using the classroom set of Internet packets, instruct the children to choose 2 facts.
- Have the children copy these facts onto a piece of paper. This paper will be used in the computer lab.
Computer Lab Activity:
- Be sure the students take their facts to the computer lab.
- Instruct the students to use Kid Pix and open a new drawing.
- Using the text tool, the students will type their facts on the computer. *Note: In order for the students to type the text rather than using the letter stamps, they need to hold the Option and Open Apple keys while clicking on the letter button on the left side of the screen. This offers them a choice of the font they use and allows them to enter the text using the keyboard.*
- After typing their facts, the students should create a picture of seashells to illustrate the facts.
- When they finish, they should raise their hand and ask the teacher’s permission before printing. Make sure that the students use a minimal number of stamps and colors so that printing time will be minimized.

Optional Classroom Activity:
- Upon returning to the classroom, the students have the option of coloring their pictures.

Evaluation:
- The students will be evaluated on their ability to research facts in the packets and create corresponding illustrations.
Internet Research Packet for Sarah, Plain and Tall
Things You Always Wanted to Know About Shells

FLOTSAM

There are between 50,000 and 200,000 mollusk species alive in the world today. Estimates vary depending on who's guessing the number of undiscovered species!

Mollusk evolution began more than 500 million years ago, during the Cambrian period.

Paleontologists use fossil shells to tell what the climate might have been like millions of years ago. Comparing fossil shells with their living relatives that only live in cold or warm climates can give some clues.

Some oysters may shed over one million eggs in a season! Only about one out of every million of these oyster eggs lives to adulthood.

Female cowries sit on top of their eggs to protect them from enemies!

Some oysters alternate their gender: Male one year, female the next!

A snail grows a bigger shell by getting calcium carbonate and
other ingredients from the water and food it eats, then uses its fleshy mantle to add the new materials to the shell.

When a hermit crab needs a bigger shell, it seeks a larger empty snail shell and moves in! Without a shell provided by a snail, it's naked!

A young abalone that eats red seaweed produces a red shell! Color pigments from food can affect the shell color of some mollusks.

*Nudibranch* is a mollusk family that doesn’t have a shell. Most are beautifully colored, too!

Ninety-nine percent of all snail species have shell whorls that coil in a clockwise direction.

Scallops have dozens of eyes. They help a scallop to see predators, so it will know when to swim away or clam-up!

*Carrier shells* attach other shells or stones to their own shell for protection and camouflage.

Shells have been used throughout history for art, jewelry, money, scientific study, buttons, ink, road gravel and chicken feed (for stronger egg shells!).

Some cone shells obtain food by harpooning, paralyzing and eating fish!

We hear the sound of the seashore inside large shells because the shell echoes surrounding sounds, jumbling and amplifying them.
Many land snails can lift ten times their own weight up a vertical surface.

Mr. Thomas Green of La Plata, Maryland, consumed 350 edible snails in eight and a half minutes.

Mike Racz in Invercargill, New Zealand, opened 100 oysters in 2 minutes and 20 seconds.

The ocean quahog *Arctica islandica* can live to be 220 years old!

The deepsea bivalve *Tindaria callistiformis* grows only one-third of an inch (8.4mm) in 100 years!

Boring clams can sink a ship! One of them, the misnamed *Teredo Shipworm*, earned its name by ruining wooden boats. It’s actually a clam, and can bore through a six-inch thick plank of wood in less than one year!

Many species of snails and clams breathe through a snorkel, or siphon, when they bury themselves in the mud or sand.

Most mollusks are capable of making pearls when foreign substances enter their shells! They coat the foreign substance with shelly material.

It takes about two years to grow a pearl. Some clams can grow pearls as big as golf balls in ten years!
A SNAIL’S PACE

*Helix aspersa*, a common garden snail, can travel about two feet in three minutes. At that rate, it would travel one mile in 5 1/2 days!

Deep sea scallops can migrate in large numbers to find richer feeding grounds.

A scallop swims without fins or a tail by squirting jet streams of water out of its shell!

About 140 species of marine snails live their entire lives without touching bottom or shore. They are called *pelagic* gastropods.

A violet snail may travel hundreds of miles in its lifetime. They are pelagic, floating with the ocean currents.

An oyster doesn't travel at all in its adult lifetime, unless we include the distance to a dinner table! An oyster attaches itself to a rock or other shells when young, and lives the rest of its life there.

Some freshwater mussels can travel many miles upstream by attaching themselves to fish (when they are larvae), and riding wherever the fish may take them! They are parasites on the fish until they're mature enough to seek a new life where ever they may be.

THE EXTREMES
The largest known clam is a tridacna clam that weighed 734 pounds and was nearly four feet in length! *That could make a lot of clam chowder!*

The largest Giant African Land Snail weighs about 2 pounds (900g) and is 15.5 inches (39 cm) from head to tail.

The largest known snail shell is two and a half feet long with a girth of nearly forty inches. This trumpet conch (*Syrinx aruanus*) weighed nearly forty pounds when alive!

The smallest known adult snail shell is from *Ammonicera rota*, 0.02 inches in diameter. Fifty of them layed end-to-end would measure one inch!

Some snails live in the top branches of trees!

About 1,100 species of ocean mollusks live deeper than one mile below the surface!

Ewing’s Gastroverm lives at an ocean depth of about 20,000 feet! *That's nearly four miles!*

Facts compiled by John Caldeira. Some facts are generalizations, and there may be exceptions.
Objective:
- The students will be able to write two facts about seashells gathered from Internet research using a specific web site.
- The students will be able to create illustrations to correspond with the facts.

Essential Skills Focus:
- Proficiency 6.2: Distinguishes fact/opinion
- Proficiency 7.1: Gives and follows directions
- Proficiency 8: Recognize the interrelatedness of language, literature, and culture

Special Preparation:
- This activity should be used after reading Chapter 4 of *Sarah, Plain and Tall* or at the completion of the book.
- You might need to review how to properly use the Kid Pix program.
- If available, have seashells on hand for students to view.
- You might need to make sure the given URL is still available.
  
  http://coa.acnatsci.org/conchnet/facts.html
- Review the school’s acceptable use policy for work on the Internet. Since sites often change, the students should notify you if they find a poor link.

Materials:
The students will need:
- a computer with Kid Pix
- a computer with Internet access
- a pencil (to be used in the computer lab)
- a piece of paper (to be used in the computer lab)
- Optional: crayons or colored pencils (to be used after the computer lab activity)

Introduction:
Suggested teacher dialogue:

“Sarah is from the coast of Maine, so she knows a lot about seashells. In this activity, you will have a chance to research different facts about seashells. You will write down two facts about seashells that you learn from doing research on the Internet. Then you will create illustrations to go with each of the facts.”
Computer Lab Activity:
- Be sure the students bring a pencil and a piece of paper to the lab.
- Instruct the students to access the Internet and go to this address:
  http://coa.acnatsci.org/conchnet/facts.html
- Remind them how important it is to type the address correctly.
- Once at this site, tell them they need to pick two facts and copy them onto a piece of paper. After they have two facts, they may quit the Internet application.
- Instruct the students to use Kid Pix and open a new drawing.
- Using the text tool, the students will type their facts on the computer. *Note: In order for the students to type the text rather than using the letter stamps, they need to hold the Option and Open Apple keys while clicking on the letter button on the left side of the screen. This offers them a choice of the font they use and allows them to enter the text using the keyboard.*
- After typing their facts, the students should create a picture of seashells to illustrate the facts.
- When the students finish, they should raise their hand and ask the teacher’s permission before printing. Make sure that the students use a minimal number of stamps and colors so that printing time will be minimized.

Optional Classroom Activity:
- Upon returning to the classroom, the students have the option of coloring their pictures.

Evaluation:
- The students will be evaluated on their ability to research facts on the Internet and create corresponding illustrations.

Special Note to the Teacher:
- Another interesting site you may wish to share with your students:
  http://www.calpoly.edu/~cschroed/index.html
- The Seashell Museum on this site is interesting!
Objective:
- The students will be able to draw a picture postcard using Kid Pix.
- The students will be able to write a message about a trip they have taken or would like to take.

Essential Skills Focus:
- Proficiency 5: Write for different purposes and audiences producing a variety of forms.

Special Preparation:
- This activity should be used after reading Stringbean’s Trip to the Shining Sea.
- You might need to review how to properly use the Kid Pix program.
- If available, have real postcards on hand for students to view.
- You might need to review how to properly write an address when sending mail.

Materials:
The students will need:
- a computer with Kid Pix
- crayons or colored pencils (to be used after the computer lab activity)
- a pencil (to be used after the computer lab activity)

Introduction:
Suggested teacher dialogue:
“Stringbean sent many postcards home to his family during his trip across the country. Think of a trip that you have taken or that you would like to take. You are going to draw a picture postcard of the place using Kid Pix. When you return to the classroom, you will add color to your picture. Finally, you will write a message telling a family member about your trip.”

Computer Lab Activity:
- Instruct the students to use Kid Pix and open a new drawing.
- Next, have the students draw a picture of a place they have visited or would like to visit
- When the students finish, they should raise their hand and ask the teacher’s permission before printing. Make sure that the students use a minimal number of stamps and colors so that printing time will be minimized.
Classroom Activity:
- After the students have printed their postcards and returned to the classroom, instruct them to use crayons or colored pencils to add color to the picture.
- After the students have colored the picture, they should carefully cut around the edge of the picture.
- Next, they should turn the picture over and write a short message to a family member about their trip. They should use the correct address format.

Evaluation:
- The students will be evaluated on their creative picture, related message, and correct use of the address format.

Note to Teacher:
- The postcards may be glued onto tagboard to make them sturdier. A good size to use is 9 in. x 5\(\frac{3}{4}\) in.
- The students may also design stamps for their postcards.
Computer Lab Activity
for
Weather Watch theme

Weather Recorder

Objective:
- The students will be able to create a simple spreadsheet based on data recorded over a five day period of time.

Essential Skills Focus:
- Proficiency 7.1: Gives and follows directions

Special Preparation:
- This activity should be used after reading the Weather Watch basal theme.
- This activity uses spreadsheets, so the teacher should review the step by step instructions with the students. If you are not familiar with spreadsheets, you may want to practice before trying this activity. See the attached instruction page.
- This activity utilizes the teacher’s Internet access on a daily basis for five consecutive days. The web site by the Weather Channel gives the current temperature and conditions at the Michigan city weather station.
- The URL is:
- It is important that you check the temperature at approximately the same time every day.

Materials:
The students will need:
- a computer with Microsoft Works
- a data sheet (to be used before and during the lab activity)
- a pencil (to be used during the classroom activity)

Introduction:
Suggested teacher dialogue:
"We read stories about the different types of weather in the Weather Watch theme. You are going to become a certain kind of weather watcher by watching the temperature. Every morning for five days, you will record the temperature on your data sheet. The next week during computer lab, you are going to enter your data into the computer and create a graph. So let’s get started!"

Classroom Activity:
- Every day for five consecutive days you should have the students record the temperature on their data sheet.
• You may want to incorporate this activity as part of the morning routine.
• You may also enter the weather conditions for the day, but this will not be used in the chart.

**Computer Lab Activity:**
• Be sure the students take their data sheets to the lab with them.
• Instruct the students to use Microsoft Works and open a new spreadsheet.
• **Follow the step-by-steps instructions on the attached instruction page to create a spreadsheet.**
• When the students finish, they should raise their hand and ask the teacher’s permission before printing.

**Evaluation:**
• The students will be evaluated on the accurateness of their chart.
Spreadsheet Instruction Page

1. After opening a new spreadsheet, you will see a screen with many rows and columns. There are letters across the top of the screen, which are your columns, and numbers down the left side, which are your rows.

2. Have the students click their mouse in square B1. The square should have a special border around it now. They may type the word Temperature and hit the Return key.

3. Now they should click their mouse in square A2. They should type Mon. and hit the Return key.

4. Continue this sequence:
   - A3 Tues. Return key
   - A4 Wed. Return key
   - A5 Thurs. Return key
   - A6 Fri. Return key

5. Next, they should click their mouse in square B2. They should enter the temperature for Mon. in this square and hit the Return key. (2 digit numbers, i.e., 58)

6. Continue this sequence:
   - B3 temperature for Tues. Return key
   - B4 temperature for Wed. Return key
   - B5 temperature for Thurs. Return key
   - B6 temperature for Fri. Return key

7. Now, they should click in square A1 and hold their mouse button down so that they highlight A1-B6.

8. Click on the Tools menu and choose Create a new chart.

9. A graph of the temperatures will be created for you.

10. The chart is now ready to print. The graph and data entries will print on the same page.
<table>
<thead>
<tr>
<th>Day</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon.</td>
<td></td>
</tr>
<tr>
<td>Tues.</td>
<td></td>
</tr>
<tr>
<td>Wed.</td>
<td></td>
</tr>
<tr>
<td>Thurs.</td>
<td></td>
</tr>
<tr>
<td>Fri.</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Temperature</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>Mon</td>
<td>58</td>
</tr>
<tr>
<td>Tues</td>
<td>63</td>
</tr>
<tr>
<td>Wed</td>
<td>55</td>
</tr>
<tr>
<td>Thurs</td>
<td>48</td>
</tr>
<tr>
<td>Fri</td>
<td>62</td>
</tr>
</tbody>
</table>

**Chart 1**

<table>
<thead>
<tr>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>63.0</td>
</tr>
<tr>
<td>56.7</td>
</tr>
<tr>
<td>50.4</td>
</tr>
<tr>
<td>44.1</td>
</tr>
<tr>
<td>38.1</td>
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<tr>
<td>31.5</td>
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<tr>
<td>25.2</td>
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<tr>
<td>18.9</td>
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<tr>
<td>12.6</td>
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<tr>
<td>6.3</td>
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<td>0.0</td>
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</tbody>
</table>

Category

Temperature
Computer Lab Activity
for
Weather Words and What They Mean
by Gail Gibbons

Classroom Weather Words Book

Objective:
- The students will be able to write their own definition of one of the weather words from the book.

Essential Skills Focus:
- Proficiency 5: Writes for different purposes and audiences producing a variety of forms
- Proficiency 7.1: Gives and follows directions

Special Preparation:
- This activity should be used after reading Weather Words and What They Mean.
- You might need to review how to properly use the Kid Pix program.

Materials:
The students will need:
- a computer with Kid Pix
- rough draft of book page (to be used in the computer lab)
- Weather Words and What They Mean
- Internet research packet
- crayons or colored pencils (to be used after the computer lab)

Introduction:
Suggested teacher dialogue:
"We just finished reading Weather Words and What They Mean. Now we are going to create a class book similar to the one we just read. You are going to write a definition of one of the weather words from the book and create an illustration. You are going to use your book and Internet research packets to help develop your definition."

Classroom Activity:
- Allow the students to choose the weather word they would like to define OR assign one to each student. They may use their books and the Internet research packets to research their definition.
- Have the students create a rough draft of the definition and corresponding illustration. Be sure they include the word they are defining.
- Edit and correct the definitions before going into the computer lab.
Computer Lab Activity:

- Be sure the students take their rough drafts to the lab with them.
- Instruct the students to use Kid Pix and open a new drawing.
- Next, have the students begin to type their definitions into the computer using the text tool. *Note: In order for the students to type the text rather than using the letter stamps, they need to hold the Option and Open Apple keys while clicking on the letter button on the left side of the screen. This offers them a choice of the font they use and allows them to enter the text using the keyboard.*
- After typing their definition, the students should create a picture to illustrate the weather word.
- When the students finish, they should spell check the document and make sure they have copied the definition correctly. They should raise their hand and ask the teacher’s permission before printing.
- Upon returning to the classroom, the students may color their illustrations using crayons or colored pencils.

Evaluation:

- The students will be evaluated on their ability to create an original definition of their weather word.

Note to Teacher:

- After all the students have finished their definitions and illustrations, you should collect them and compile them into a class book.
- The information found in the Internet research packets is located at: http://www.whnt19.com/kidwx/index.html
- If you choose to have the students directly access this web site in the future, be sure you check the URL before going to the lab and review the school’s acceptable use policy with the students.
Internet Research Packet for Weather Words and What They Mean
What are clouds?

Clouds are water. Either small liquid water drops or tiny pieces of ice. Meteorologists rank clouds according to their height and whether or not they are flat or puffy. The graph below is Dan's easy way to remember clouds.

<table>
<thead>
<tr>
<th>Flat</th>
<th>Puffy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Stratus Cumulus</td>
</tr>
<tr>
<td>Medium</td>
<td>Alto stratus Alto cumulus</td>
</tr>
<tr>
<td>High</td>
<td>Cirrostratus Cirrocumulus</td>
</tr>
<tr>
<td>Tall</td>
<td>Cumulonimbus</td>
</tr>
<tr>
<td></td>
<td>(or Thunderstorm)</td>
</tr>
</tbody>
</table>

Nimbus means rain cloud.

There are some other specific types of clouds, some of which are very rare. Visit the Cloud links at the top of this page for some beautiful examples of many different varieties of clouds.

How are clouds formed?

Clouds form when the air rises. As a blob of air rises it expands and gets colder, the colder air cannot hold as much water as warmer air. As the temperature and air pressure continue to drop, tiny water droplets group together into clumps called cloud droplets. At this point, the blob of air becomes a visible cloud. If the cloud keeps going up, the cloud droplets will clump together and form water droplets. These water droplets are too heavy to float in the air and they fall from the sky as either rain or snow.
Air blows from high to low pressure but because the earth is turning it appears to us that moving air is turning to the right. This is true of any object that is in motion: birds, people, rockets, or air!

This effect is called the Coriolis Force after the French scientist who discovered it. The Coriolis Force appears to turn moving objects to the right north of the equator and to the left south of the equator.

To understand the Coriolis Force, think of a cannonball sitting near the equator. Even though the cannonball does not appear to be moving... it already is... the Earth and the air AND that cannonball are spinning with the earth... they are all actually going about 1,000 miles per hour to the East! To the North the air and earth are moving East also... but not as fast... and at the North pole there is no movement to the East at all!

Let's pretend that we can watch that cannonball as it is shot from a cannon at the equator. If we are in Huntsville, Alabama... we are moving East at about 600 mph. As the cannonball is shot northward it will be moving eastward at 1000 miles per hour so it will seem to us that it curves away from us to the northeast.

Another way to illustrate the Coriolis force is to draw a straight line on a spinning record. When you stop the record and look at your straight line you will see that it is a big spiral! This is the Coriolis Effect!

More on the Coriolis Force.
HUMIDITY: Humidity refers to the amount of moisture in the air. You might be surprised to know that the air in our atmosphere has water in it. Lots of water!

Water in the atmosphere exists in 3 main states.
1. WATER VAPOR
2. CLOUD DROPLETS (SOMETIMES FROZEN ICE CRYSTALS)
3. LIQUID RAIN DROPS (SOMETIMES FROZEN!)

IMPORTANT!!!: warm air can hold more water vapor than colder air!

Air near the ground or ocean usually has more water in it than the colder air up high.

MEASURING THE AMOUNT OF WATER VAPOR IN THE AIR:
There are several different ways to measure and to express the amount of water in the air.

Let's imagine we have a blob of air with moisture in it. The temperature of our blob of air is 80 degrees. So, how do we tell how much moisture is in it ????

RELATIVE HUMIDITY:
The relative humidity tells how much water the air is holding compared to how much it could hold at a certain temperature. If our blob of air has a relative humidity of 50% then that means it is holding half of the amount of water a blob of air 80 degrees could hold. The relative humidity can change if the moisture changes or if the temperature changes.

DEW POINT:
The dew point is a much better indicator of moisture in the air and is preferred by most meteorologists.

WHAT IS THE DEW POINT?
The dew point is the temperature at which the air will be
holding all the moisture it can if cooled. Or...another way of putting it. The dew point is the temperature at which the relative humidity reaches 100%.

CONFUSED?
Let's talk about our blob of 80 degree air. It has water vapor in it, and remember that warm air can hold more water than cold air. If we start cooling our blob of 80 degree air...it will eventually reach a temperature at which it can no longer hold the water vapor in it. Let's say that in this case our blob of air forms a cloud when we cool it to 50 degrees. Then 50 degrees is the dew point of our blob of air! Note that the dewpoint does not depend on the temperature like Relative Humidity!

HOW YOU CAN MEASURE THE DEW POINT!

What you will need:
1. a thin metal cup
   (plastic will do in a pinch... DON'T USE STYROFOAM)
2. a good thermometer
3. ice water
4. a large dropper

Do the following:
Outside on a warm day in the spring or summer. If the dewpoint is below 32 degrees you will have to use antifreeze or another liquid that has been chilled to near zero in a freezer. Be careful! Antifreeze is poisonous...only use it with an adult nearby.

Put a couple of inches of warm (80 f) water in a cup. Measure the temperature of the water, now add a few droppers of cold water and stir while measuring the temperature of the water. Keep adding a small amount of cold water to the metal cup until you see a thin film of water (water vapor) form on the outside of the cup. Make a note of the temperature of the water as soon as you see the water vapor form on the outside of the cup. The temperature you measured is the DEW POINT!

WHAT HAPPENED?
As you added colder water to the warm water in the cup, the temperature of the water in the cup kept dropping. The sides of the cup got colder as the water inside got colder. The cup also chilled the air right next to it! When the temperature of the metal cup reached the dew point... The air just next to the cup was cooled by the dew point as well and water began to fall
out of the air and stick to the cup!

*Special Note:* If you live in the western USA or at a high elevation the dew point may be less than 32 degrees F and see no condensation unless you put a very cold liquid, like salt water or antifreeze that is chilled to near zero in the cup.
Wind

If there wasn't any wind, there would be little or no day-to-day change in our weather. Wind is air moving horizontally. It is created by large scale differences in the air's density. This forces the air to move toward regions of lower pressure. If you stand with your back to the wind, an area of low pressure would be off to your left and the high pressure off to your right. The greater the differences in pressure, the stronger the wind.

In the course of a year, the average wind speed and wind direction in our area is 8 MPH from the southeast. The windiest months in the WHNT viewing area are March and February.

When NewsChannel 19 reports the wind direction on television, we are reporting the direction the wind is blowing from. A North wind is a wind that is blowing from the north. The old weather expression "Nor' Easter" applies to very intense storms, that blow up the Atlantic coastline and because of their counter-clockwise rotation, cause the wind to blow hard and steady from the northeast.

The Jet Stream

The strongest and most persistent wind is found in the Jet Stream, a river of eastbound air a few hundred miles wide curving like a snake 6 miles above the ground. Meteorologists track weather balloons to determine how fast the wind is blowing in the jet stream. These are winds that steer the huge masses of warm and cold air generally from west to east across the country. During the summer months, a typical wind speed in the Jet Stream would be
around 50 MPH. But, in the winter, the speed is more like 150 MPH.

The Anemometer

The instrument used to measure wind speed is called the anemometer. This has three cups which catch the wind and causes the anemometer to rotate. For official wind measurements, anemometers should be located around 30 feet above the ground.

Many times, a downtown area can be just as windy as on a mountaintop in the Smokies. This is so because tall buildings on either side of a street can channel the wind, forcing it to blow much faster. The highest wind speeds on record in the NewChannel 19 viewing area have occurred during severe thunderstorms. The world record, highest wind speed is 231 MPH! This was measured at the summit of Mt. Washington in New Hampshire. The windiest month in the Tennessee Valley is March, with the average speed of 10.1 MPH. August has the calmest winds, with an average speed of 6 MPH.
The Shocking Statistics

Lightning is an under rated killer. In an average year, lightning kills and injures more people than hurricanes or tornadoes. From 1990 - 1992, lightning killed 4 and injured 127 in Alabama. On the average, 80 deaths occur from lightning each year in the United States. Cars and homes are relatively safe from lightning. Holding a 9 iron on the 10th fairway isn't!

Lightning and the associated thunder can be frightening. But it doesn't need to be dangerous if you follow some simple rules. Stay inside buildings during a thunderstorm. Virtually all deaths from lightning occur outdoors.

If there are not any buildings nearby, cars and trucks (but not golf carts or tractors) can offer excellent protection. It is the outside metal surface, not the rubber tires that offers the protection. Tires contain many other materials (e.g. steel belts, etc...) that make them effective conductors, especially on wet roads. Golf carts and tractors do not have a metal surface surrounding the passengers and therefore can be very dangerous. If you are caught in an open field, avoid isolated trees, hilltops and metal objects (e.g. golf clubs). Also, stay out of water and get off small boats.

If your hair stands on end, your skin starts to tingle, or you hear clicking sounds, lightning maybe about to strike. Get down on your hands and knees and keep your head tucked in. DO NOT lay flat on the ground. That can give lightning a better chance of striking you.

KIDS' LIGHTNING INFORMATION AND SAFETY - A website built by a young girl who was struck by lightning while on a hike, she shares her story along with the stories of other
children who have been struck by lightning.

\[ \textbf{THUNDER} \text{ is the result of lightning strike and cannot hurt you. Thunder is created when lightning heats up the air around it and causes it to expand rapidly. Because light travels very fast, you see lightning as it happens. Sound on the other hand travels much slower than light and therefore takes much longer to get to you. So, you hear the thunder after you see the lightning.} \]

\[ \text{It takes thunder 5 seconds to travel one mile. You can use this to tell how far away a lightning strike was. After you see a flash of lightning, start counting seconds until you hear the thunder. Divide the number of seconds by 5. This is the number of miles away the lightning stroke was.} \]

\[ \text{For example: If you counted 15 seconds between the lightning and the thunder, the lightning was 3 miles away.} \]

\[ \text{Lightning can travel from the ground up, from the cloud to ground, or cloud-to-cloud. There is no such thing as \textit{Heat Lightning}. If you see distant lightning on a hot summer night, you can be sure that there is a distant thunderstorm out there somewhere.} \]

\[ \textbf{Lightning Facts and Safety Tips from Weather Labs} \]

\[ \text{For more information on Lightning, I recommend the book "All About Lightning," by Martin Uman. Published by Dover Inc., New York.} \]
Tornado Weather

Why do some thunderstorms produce violent tornadoes while most do not? The answer is related to the wind. If the wind changes direction and gets stronger with height, it can cause a column of air to rotate. Think of a rotating column of air about 2 miles high and half a mile wide. Suddenly a thunderstorm updraft pulls this column upward. Now it's 3 miles high and a few hundred yards wide.

When this happens the air spins up. Sit in a swivel chair and hold your arms out. Now have someone spin you around. As you spin bring your hands to your lap. Be careful doing this!

The scientific term for this spinning up is conservation of angular momentum. It is this process that can take 50 mph winds and turn them into a tornado with 200 mph winds! Everything has to come together just right for a tornado to occur.

More tornadoes occur in the United States than any other place in the world. Alabama ranks 4th in the nation for the number of killer tornadoes, and the risk of tornadoes is higher in the Tennessee Valley.

Texas and Oklahoma have many more tornadoes than we do, here in the Tennessee Valley, ours tend to be more deadly. The worst tornado disaster occurred on March 21, 1932. Over 300 people were killed in the state during 2 waves of tornadoes that day.

Is That A Tornado?
You have probably asked yourself that question at least once while watching an approaching storm. There are several important clues that will help you tell the difference between a scary looking cloud and a developing tornado.

Tornadoes form in the updraft region of a thunderstorm. The rain and hail fall out of the downdraft. If a tornadic thunderstorm is moving Northeast, then the tornado would most likely form on the Southwest end of the storm with the rain out ahead of it. If you are in the path of the storm, then you would most likely not see the tornado approaching until it was very close.

Meteorologists who photograph tornadoes know that the safest way is to follow the storm. If a tornado develops, it will be easy to see as it moves away.

Since the tornado is forming in the updraft, there may be a low cloud slowly rotating in the Rain Free Base of the storm. This low cloud is called a Wall Cloud and is the parent cloud to a tornado. Not all Wall Clouds produce tornadoes, but if you see a low rotating cloud at the back edge of a storm, take no chances. Many times blue sky or sunshine will be behind the wall cloud or tornado. Hail and lightning accompany many wall clouds along with high wind. Tornadoes are wind not clouds. Until they pick-up dust or moisture, may not be visible. Many times all you can see is a large swirl of dust or debris near the ground.

National Severe Storms Laboratory N.S.S.L.

NSSL Storm Spotters Guide
Glossary of Terms for Storm Spotters
Deadly Tornado Statistics

Doppler 19 Survival Guide
WHAT CAUSES PRECIPITATION

When clouds develop or precipitation occurs, something is making the air rise. When air rises it expands and gets colder and since colder air cannot hold as much moisture as warm air, the water condenses to form clouds and sometimes rain or ice or snow!

Several things can make the air rise...Mountains for one! Most blobs of air do not carry shovels with them so they have to go over mountains instead of through them! Cold fronts can cause air to rise as well. Even the jetstream can cause air to rise.

Most precipitation is caused by a combination of different processes causing the air to rise.

A GREAT PAGE FROM THE CENTER FOR ANALYSIS AND PREDICATION OF STORMS