

# **Weather Stations**



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# Overview

## Topic

- The topic for these stations is weather which includes clouds, types of storms, weather instruments, weather terminology and weather forecasting. The stations do not go too in-depth on revealing information to the students but instead allows students to show what they have learned in a variety of activities. The stations are designed to be used towards the end of the unit as a way for students to showcase their knowledge.

## Assessment

- Prior to completing any stations, each student will have their own folder that they will decorate based on the theme for the stations. For this station project, they will write “Stations: Weather” on the folder and decorate it however they would like. This folder will be used to keep their completed activities in, which is necessary for them to receive a grade for each station!
- For Station 1, they will place their completed sheet in the folder. They will be assessed on the effort they put into creating a list of descriptive words (includes adjectives AND nouns) and whether they appropriately incorporated them into the picture.
- For Station 2, students will place only their “master list” into the folder as the index cards would be too bulky. They will be assessed on the whether they identified the 8 different types of clouds and wrote accurate and appropriate possible weather conditions.
- For Station 3, students will place their instructions and explanation inside the folder to be graded. Regarding the instructions, students will be assessed on how detailed their instructions are, whether they are written in a manner that allows another person to build the same instrument and if a materials list is included. Regarding the explanation, students will be assessed on whether or not they can accurately describe the use of an anemometer. Their explanation must discuss that it measures wind speed and they must describe how they would specifically use the instrument they created to measure wind speed outside.
- For Station 4, students will place the word sort sheet they completed into their stations folder. They will be assessed on the effort they put into categorizing the words as well as their explanation and reasoning for their categories. This is an open word sort so the students are in charge of creating their own categories.
- For Station 5, students will print out their weather forecasts and place them into their stations folder. They will be assessed on whether they included information for the 3 major areas including: high and low temperature and possible conditions. Depending on the amount of effort put into extra information, they will be given up to 5 bonus points. They will also be assessed on whether the map is organized and easy to look at and whether they included graphics or not.

## **Modifications**

- For each station, there are different modifications that can be made to assist a variety of students. Each station and the handouts included are easily manipulated depending on the modification that is needed. The modifications listed below are for lower level reading and writing students who may find some of the activities difficult to complete.
- For the first station where the students are describing a storm and illustrating it, it can be modified for a lower level student where there are already a few terms listed on the sheet in order to give them an idea of the types of words you want them to list. Also, they could be allowed to use their text book or a dictionary in order to assist them with making the list of words.
- For the second station, in which students are creating a master list of cloud types with a description of weather conditions and then making these into cloud flashcards, modifications can be made for lower level students. This activity is already at a lower level of understanding but you could modify it so that the possible weather conditions are listed and students have to fill in the cloud type. Since there is a poster of the cloud types with a picture of it, this station is not at a very high difficulty level to begin with. However, different students have different learning disabilities or struggle with different areas so this station is able to be modified easily.
- For the third station, students are creating their own anemometer and writing out instructions for how to make it. They also provide an explanation of what it measures and how they would use it to collect data. This station can be modified in multiple ways. For instance, students could be given instructions for how to make the anemometer and then have to write just the explanation. Or, they could be given an explanation of how an anemometer works and have to figure out how to make an instrument that would measure wind speed in such a manner. Another way to assist students with this station is to have an example already made so that they have something to refer to while they are creating their own.
- For the fourth station, students are completing a word sort. There is already a modified version included in this packet. Word sort A is the regular sheet and has 4 more words on it than the modified version, Word sort B. Also, the modified version does not include as many weather instruments (A includes anemometer and barometer whereas B does not) and does not include the terms “high pressure” or “heat index”. Those two terms were included on the regular version because they are more difficult to associate with the other terms included in the list.
- For the fifth station, students are creating their own weather forecast for 3 major US cities in three different regions. They are using computers and the internet to complete their maps. The entire forecast is generated by the student themselves; they are not given a blank map or any other graphics or information to create their weather forecast. A modification of this station is included in the packet; the modification is a slightly different activity but it is a little more guided than the regular assignment. The modified version has the students making a weather forecast for an already specified city and has blanks for the students to fill in the information.

# Weather Stations Explanation

## Station 1

- At this station, the students will be given a sheet of paper with the name of a type of storm at the top. They are to make a list of adjectives that describe this storm or nouns that are associated with it. Once they finish their list, they are to draw a picture that illustrates 4-5 of the terms they produced on the sheet of paper. This sheet will be put into their “Stations Folder”. This station allows students to be creative by drawing pictures of the storms but also makes them think about the differences between the different types of storms by writing descriptive words.
- In order to complete this station, you will need:
  - Worksheet with storm heading (1 per student)
  - Blank paper (1 per student)
  - Markers, crayons or colored pencils

## Station 2

- At this station, students will create flashcards of the different cloud types as a resource for studying. A list of the cloud types will be given with a picture next to the name as a reference. Students will first make a “master” list of the cloud types and write a description of possible weather conditions associated with each cloud type. Students will then use index cards to make flashcards. On one side, they will glue on cotton balls to show what the cloud looks like and write the name of the type of cloud on the same side. On the other side of the index card, students will write a description of the possible weather conditions associated with that specific type of cloud. This station allows students to create their own study tool that they can take home.
- In order to complete this station, you will need:
  - Index cards (8 per student)
  - “Clouds Master List” sheet (1 per student)
  - Stations instruction sheet
  - Cotton balls (*at least* 8 per student)
  - Poster of cloud names and pictures
  - Glue

### **Station 3**

- At this station, students will be creating their own weather instrument, the anemometer. In the center of the table will be a bucket of various supplies that students can use to build their own weather instrument. After creating their instrument, they will write instructions for how to build it and an explanation of what it measures and how they would collect data using it. This station allows students to think deeper and makes them write in a different format than they are most likely used to. They must write instructions that allow someone to replicate the exact same instrument simply by reading the instructions.
- In order to complete this station, you will need:
  - “Create Your Own Anemometer” sheet
  - Paper cups
  - Plastic straws
  - Scissors
  - Tape
  - Stapler
  - Straight pin or brads
  - Popsicle sticks

### **Station 4**

- At this station, students will do a word sort. They will be given a list of weather related words and they must sort them into categories that they create. There are two different sheets: one is the regular sheet and the other is a modified version.
- In order to complete this station, you will need:
  - Word sort sheet
    - Sheet A – regular sheet
    - Sheet B – modified sheet

### **Station 5**

- At this station, students will be making a weather forecast for the next day that they can present to the class. Using Microsoft Publisher, the students will make a map of the United States and use the internet to create a forecast for the 3 major regions of the US: the West coast, the Midwest and the East coast. For each region, students will include the high and low temperature for the day, what the conditions will be like (ex: rainy, cloudy, etc.) and any other information they deem valuable for a weather forecast. Graphics must be included. Students will have to use inferences and predictions in order to complete this assignment. A list of suggested websites is given on the worksheet to assist students.
- In order to complete this station, you will need:
  - Computers with internet access
  - Microsoft Publisher (or a similar program)
  - Printer
  - Weather Forecasting sheet
  - Make Your Own Weather Forecast sheet (modified version)

Name:

Hour:

# TORNADO

Make a list of adjectives that describe a tornado or nouns associated with a tornado. Write them on the blanks provided below.

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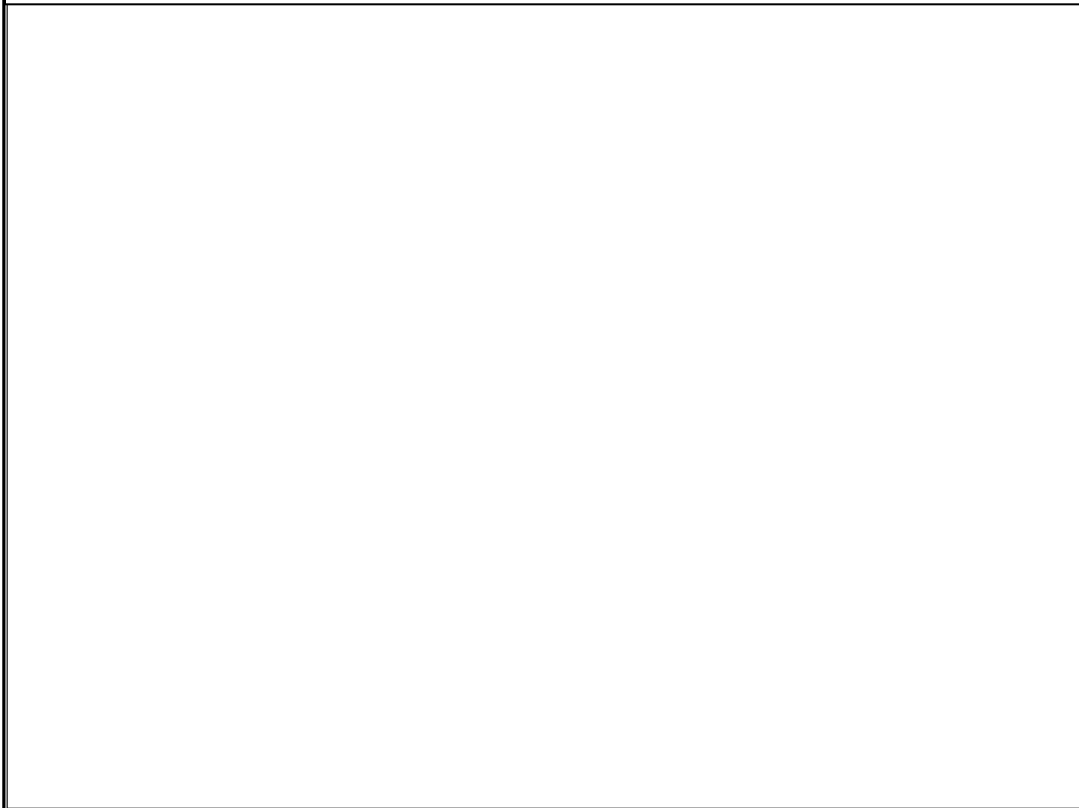
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Draw a picture of a tornado that illustrates 4-5 of the terms above



Name:

Hour:

# HURRICANE

Make a list of adjectives that describe a hurricane or nouns associated with a hurricane. Write them on the blanks provided below.

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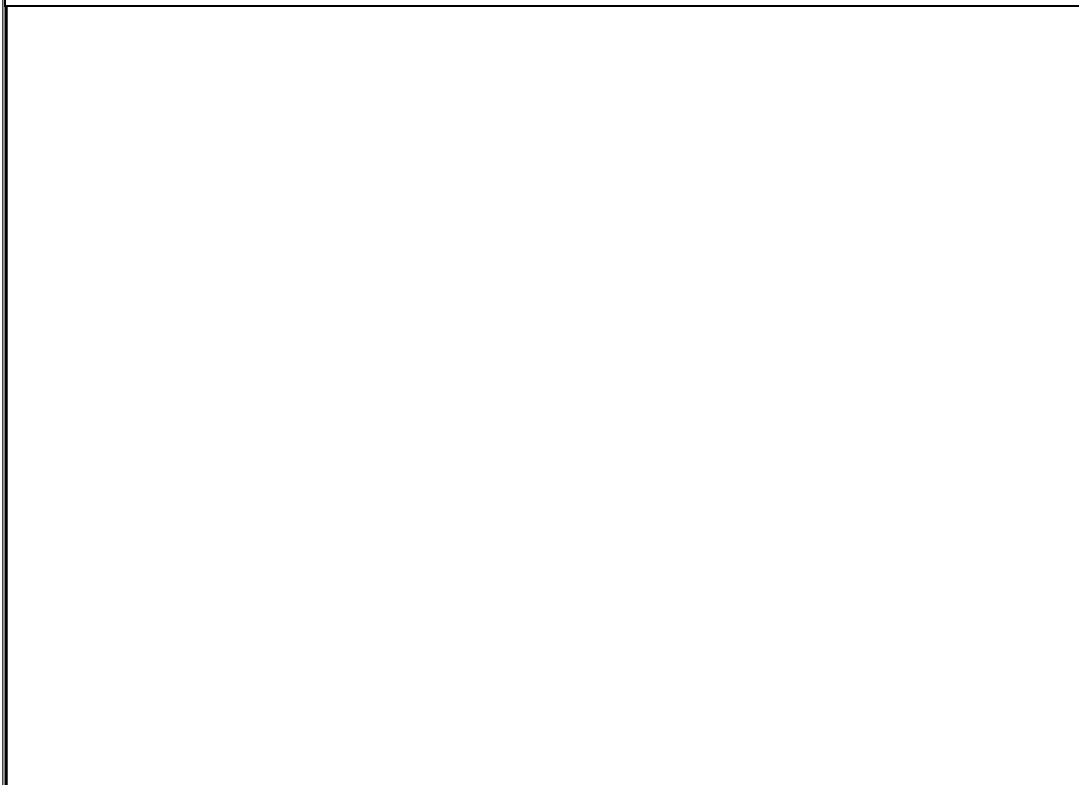
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Draw a picture of a hurricane that illustrates 4-5 of the terms above



Name:

Hour:

# THUNDERSTORM

Make a list of adjectives that describe a thunderstorm or nouns associated with a thunderstorm. Write them on the blanks provided below.

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Draw a picture of a thunderstorm that illustrates 4-5 of the terms above



# Cloud Flashcards

**At this station, you will be creating your own “cloud flashcards”!**



- 1.** Grab a “Clouds Master List” worksheet and make a list of the 8 cloud types.
- 2.** Write the possible weather conditions that are associated with each cloud type.
- 3.** Once you have filled out the master list, grab 8 index cards and 8 cotton balls.
- 4.** For each cloud type, make an index card that has the cloud type name and a cotton ball that resembles the type of cloud on the same side.
- 5.** On the back of each index card, write the possible weather conditions associated with that specific cloud type.
- 6.** Once you have finished your index cards, place the completed master list into your stations folder. The index cards are for you to keep as a study tool!

Name:

Hour:

# **CLOUDS**

## **Master List**

### **Types of Clouds**

### **Possible Weather Conditions**

**1.** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**2.** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**3.** \_\_\_\_\_

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**4.** \_\_\_\_\_

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**5.** \_\_\_\_\_

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**6.** \_\_\_\_\_

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**7.** \_\_\_\_\_

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**8.** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_



Name:

Hour:

## Word Sort: A

Using the list of words below, sort the words into categories that you determine yourself.

Be sure to label your categories with a title (the theme of the category)!

Anemometer	Rain gauge
Atmosphere	Temperature
Cirrus	Wind speed
Blizzard	Humidity
Barometer	Dew point
Cold front	Wind
Cumulonimbus	Stratus
Flood	Precipitation
Heat index	Snow
Cumulus	Tornado
Thermometer	High pressure

Sort into categories here:

Explain your reasoning for the categories you chose:

Name:

Hour:

## Word Sort: B

Using the list of words below, sort the words into categories that you determine yourself.

Be sure to label your categories with a title (the theme of the category)!

Thermometer

Hail

Cirrus

Blizzard

Cold front

Cumulonimbus

Humidity

Rain

Cumulus

Rain gauge

Temperature

Wind speed

Flood

Wind

Stratus

Precipitation

Snow

Tornado

Sort into categories here:

Explain your reasoning for the categories you chose:

Name:

Hour:

# Weather Forecasting

At this station, you will be creating a weather forecast map for tomorrow's weather! Using Microsoft Publisher, create a map of the United States that has a weather forecast for a major city in the East coast, the Midwest and the West coast (that means you will have a forecast for 3 different cities!).

Be sure to include the high and low temperature for the day and what possible conditions will be like (such as precipitation, winds, etc.). This map **must** include graphics! You will also be given an opportunity to receive **5 bonus points** for any extra, relevant information you include that you think enhances the forecast! Remember, you are making forecasts for tomorrow so be sure to look at what the weather is like today to make inferences about tomorrow's weather!

## Check list for weather forecast:

### • 3 Major Regions

East coast city: \_\_\_\_\_

Midwest city: \_\_\_\_\_

West coast city: \_\_\_\_\_

### • Weather Information

\_\_\_\_\_ High temperature

\_\_\_\_\_ Low temperature

\_\_\_\_\_ Possible conditions

## Suggested Resources:

<http://www.accuweather.com><http://www.weather.com><http://www.usatoday.com/weather/wfront.htm>

# Make Your Own Weather Forecast

At this station, you will be creating a weather forecast map for tomorrow's weather! In the chart below, fill in the necessary information about **today's** weather! This information will help you construct a forecast for tomorrow. Using the provided map, design a weather forecast for tomorrow's weather in Kansas City, Missouri. Be sure to include the high and low temperature for the day and what possible conditions will be like (such as precipitation, winds, etc.). You will also be given an opportunity to receive **5 bonus points** for any extra, relevant information you include that you think enhances the forecast!

	<b>High temperature</b>	<b>Low temperature</b>	<b>Precipitation type</b>	<b>Precipitation amount</b>	<b>Barometric pressure</b>
<b>Kansas City, Missouri</b>					



# **Bibliography**

- Cloud flashcards
  - [http://www.ilovethatteachingidea.com/ideas/010530\\_cloud\\_flashcards.htm](http://www.ilovethatteachingidea.com/ideas/010530_cloud_flashcards.htm)
- Cloud type poster
  - <http://eo.ucar.edu/webweather/cloud3.html>
- Create your own Anemometer
  - <http://www.energyquest.ca.gov/projects/anemometer.html>
- Open Word Sort strategy
  - <http://www.thecenterlibrary.org/cwis/cwisdocs/pdfs/open-word-sort.pdf>
- Create your own Weather Forecast
  - <http://www.uwm.edu/~kahl/Forecast/>