

# WORCESTER ART MUSEUM



## Nature Science *Weather and Climate*



We have our favorite types of weather, be it a rainy morning, a sunny day, a brisk afternoon, or a snowy evening. But what causes these days to be different from each other? Why rain one day and not the next?

**Weather** occurs in the **atmosphere**, which consists of the layers of air between the ground and outer space. Think of it like a bubble of air wrapped around the Earth. It's also important to distinguish between weather and climate. Weather is the state of the atmosphere on a given day in one spot. It is temporary, and can change drastically. You may experience a day with a sunny morning but a rainy afternoon! **Climate** is the average of the weather in a larger location, like a whole state or country, over a long time. The climate in Massachusetts is different from the climate in Texas, because Texas is hotter and drier all the time. This is caused by how strong the sun is in that area. The sun's rays are strongest across the widest part of the earth when looking at it from top to bottom. The center line of the earth is called the **equator**, which Texas is close to. The sun's rays are less strong toward Massachusetts, which is why it is cooler than Texas.

**Meteorologists** are scientists that study climate and daily weather. They use two main ideas to explain weather: energy and heat. Air is always moving around--getting hotter or colder--and changing how much energy it has. For example, a thunderstorm occurs when there is a lot of heat and energy moving around. A nice, sunny day will occur when there is less movement and change in the atmosphere.

There is water in the air, too, which adds another element to the heat and movement that create weather! A cloud is made of tiny water droplets hanging out in the atmosphere. Think of the steam you see coming from a pot of boiling water- that is essentially a small cloud. Rain occurs when those water droplets way up high become too heavy to stay aloft.



[Landscape, early 19th century, Georges Michel \(French, 1763–1843\), oil on canvas, 1952.32](#)

**Predicting** the weather is a hard job. Meteorologists have to collect a lot of **data** about the atmosphere, and pay close attention to the tiniest changes. They don't always get it right, but that doesn't mean they're bad at their job. The weather can change at the drop of a hat!



[Night Rain At The Yoshiwara And The Nippon Embankment Of The Sumida River, Date: Tiger Year, 4th month, 1854](#)  
Yoshitora, Utagawa  
[woodblock print, 1901.844](#)

## Vocabulary

**Atmosphere** - The layers of air around Earth between the ground and outer space where weather occurs.

**Weather** - The short-term state of the atmosphere in one area.

**Climate** - The long-term conditions of the atmosphere in a geographical area.

**Equator** - The center line of the earth between the top and bottom where the sun's rays are strongest.

**Meteorologist** - A scientist who studies the atmosphere, weather, and climate.

**Predict** - To attempt to tell what may happen in the future.

**Data** - Factual information gathered for reference or research.

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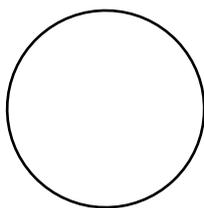
## Nature Science Weather in Art



Weather is another phenomenon that humans have used in stories or artwork for a long time. Have you ever noticed how in stories, a rainy day usually signals sadness, while the sun signals happiness? Or a thunderstorm can signal anger, while a foggy night feels spooky? Weather can have a big impact on how we feel, especially when we don't see the sun for a long time.

### How do the different types of weather in these artworks make you feel?

Check off your emotion and draw an emoji for it!



- Excited
- Happy
- Bored
- Sad
- Anxious
- Afraid
- Sleepy

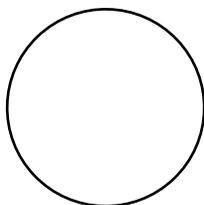


[Amanohashidate in Snow \(Yuki no hashidate\), February 1921, Kawase Hasui \(Japanese, 1883–1957\), multicolor woodblock 2000.82](#)

### What conditions did there need to be for this weather to occur?

Check off all the conditions needed.

- Cold
- Cool
- Warm
- Hot
- Still Air
- Breezy
- Strong Wind
- Very Dry
- Dry
- Damp (a little wet)
- Wet
- Very Wet
- Other: \_\_\_\_\_

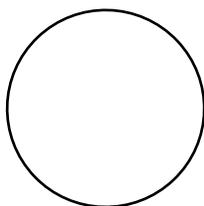


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[Oranges at Corfu, about 1909, John Singer Sargent \(American, 1856–1925\), oil on canvas, 1940.99](#)

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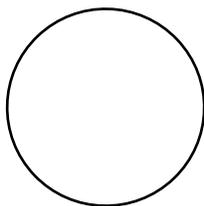


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[Clearing Storm, Sonoma County Hills, California, 1963, Ansel Adams \(American, 1902–1984\), gelatin silver print, 1969.87](#)

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[The Gale, 1883-1893, Winslow Homer \(American, 1836–1910\), oil on canvas, 1916.48](#)

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- Hot
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# WORCESTER ART MUSEUM

Art and the Environment

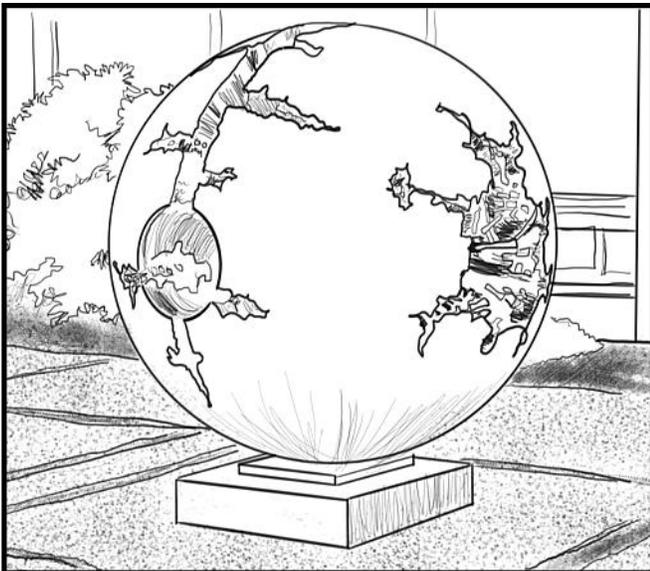


## Outdoor Sculptures Through the Year

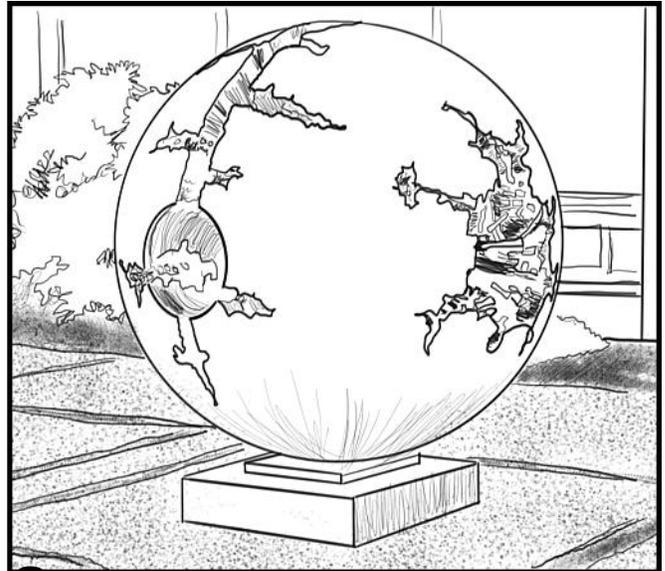


When sculptures are displayed outdoors they interact with their environment, including the weather! The sculpture *Rotante Dal Foro Centrale* by Arnaldo Pomodoro (pictures to the left) is a part of the Worcester Art Museum's collection and is on display outside in our Stoddard Garden Courtyard. During different parts of the year it gets rained on, covered in snow, has leaves swirl around it, and even sometimes hosts a beehive!

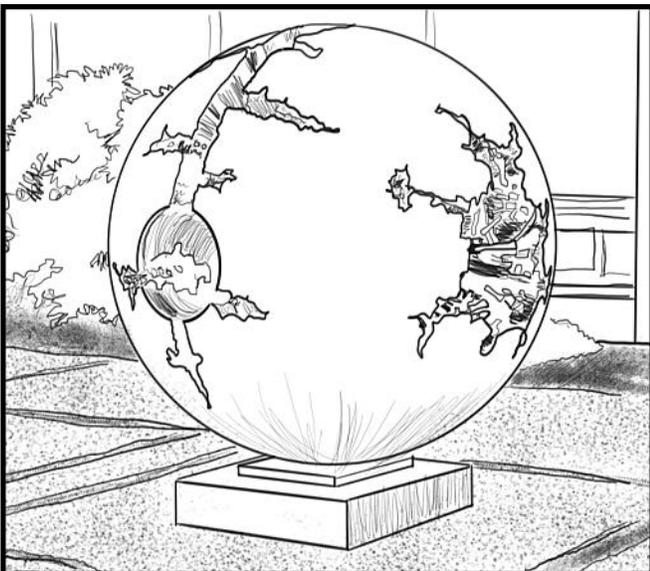
You have four drawings of this sculpture below - color them in according to each season!



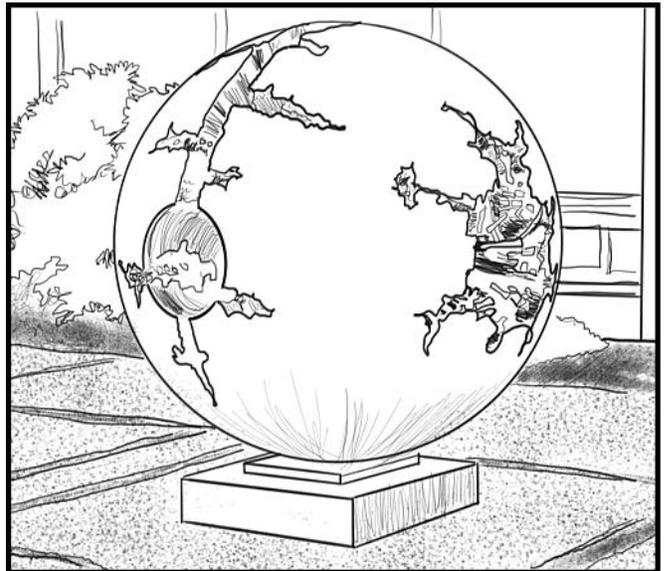
**Spring**



**Summer**



**Fall**



**Winter**



# WORCESTER ART MUSEUM

## Hands On Activity: Cloud Studies



Storm at Sea, about 1675, Willem van de Velde II, oil on panel, 1951.3

Cloud studies, or drawings and paintings of clouds are an important aspect of creating successful landscapes. You can see in the painting, *Storm at Sea* by Willem van de Velde II, to the left, that clouds make up most of the image. There are many different types of clouds and they are not all white on a blue background!

For a few days this week, do a drawing or painting of what the clouds look like from one place in your home or yard. It can be out of a window, from a porch, etc.

Notice how the shapes and colors change and how difficult it might be to quickly capture how they look! If

you can you may want to take a photo to work from! Photography is a wonderful art form, and it can also be used as a tool to help artists who work in other media!

### Supplies

- Paper or sketchbook for Drawing or Painting
- Your choice of drawing or painting media
  - Drawing Media examples: Pencil and Eraser, Pen, colored pencils, etc
  - Painting Media examples: Watercolors, Acrylics, Tempera, brush, water or oil, palette

### Directions

1. Pick your view of the sky - you should use the same view each time so you can compare the views later.
2. Each time you start, make sure to keep looking at the sky as you draw or paint. You don't want to draw what you think the clouds look like, you want to draw what they do look like - one of the challenges of observational drawing - or drawing from what you see!
3. When you have finished each piece, put it safely away so that you can compare all of them at the end of the week!
4. If you do many cloud studies you could even collage together your works into a cloud quilt!



Summer Clouds, about 1918, Margaret Jordan Patterson, Color woodcut on cream laid paper, 2011.503



Landscape with Looming Cloud by 1927, Joseph H. Greenwood, graphite on thin, smooth cream wove paper, 1965.492.164



Clouds (cirrus pattern), 1983, Ralph Steiner, gelatin silver print, 1991.163