



## Visible Thinking to Guide Discussion About Climate Change & Water

Color, Symbol, Image Strategy with an Inner/Outer Circle Discussion

### OBJECTIVES

- Students will read an article about climate change and water, and use visible thinking strategies to illustrate their feelings, insights, and knowledge about the reading.
- Students will engage in a discussion with their classmates in order to investigate and articulate their feelings, insights, and knowledge about climate change impacts on water resources.

### LESSON TIMESPAN

Lesson designed for a 45-minute class period.

### SUPPLIES

- [Color, Symbol, Image Worksheet](#) for each student (for individual brainstorm)
- Art supplies (paint, markers, crayons, colored pencils, etc.)
- Index card or other paper for “exit card”
- Reading or prompt to inspire activity. **Visit Bow Seat’s online [Resource Studio](#)** for journalistic media, primary scientific literature, and other articles on water’s connection to climate change, health, justice, and culture
  - Suggested resource: [Water and Climate Explainer](#)
  - This activity works well with readings that evoke an emotional response

### PREPARATION

- Decide how you will divide students into two groups. You can have groups preassigned on their Color, Symbol, Image Worksheet with a symbol or number, or you can have them count off, etc.
- Note: This lesson gets students thinking about water and climate change through a creative lens. This lesson can introduce Bow Seat’s [Ocean Awareness Contest](#) as an opportunity to learn more about our changing planet, to practice artistic and writing skills, to develop meaningful 21<sup>st</sup> Century skills, and to join the youth movement leading the charge for environmental action. Check out the details of our 2023 Contest, *Climate Heroes in Action*: [bowseat.org/contest](http://bowseat.org/contest)

## LESSON HANDOUTS

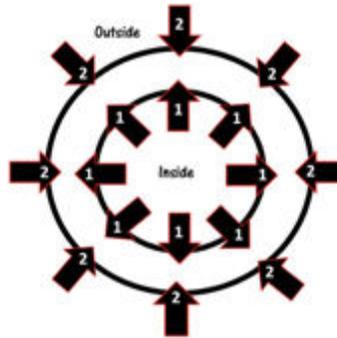
1. [Color, Symbol, Image Worksheet](#)
2. [Suggested reading](#)

## COLOR, SYMBOL, IMAGE ACTIVITY

1. Begin by giving students a reading and explaining the Color, Symbol, Image Worksheet (directions in step 2). You can either have the students read individually or as a full group.
2. After reading, students will individually fill in the Color, Symbol, Image Worksheet to help them process and articulate their feelings and knowledge about the topic.
  - **Choose a color that most represents your feelings.**
  - **Choose a symbol that most represents your insights about this topic.**
  - **Choose an image that best communicates your knowledge about this topic.**
3. Once everyone has had time to fill in the chart, move to the Inner/Outer Circle Discussion.

## INNER/OUTER CIRCLE DISCUSSION (or other discussion setup of your choosing)

1. Move students into two equal groups:
  - All of the 1s will form the inner circle—this circle will face outwards (standing back to back with one another).
  - All of the 2s will form the outer circle—this circle will face the inner circle.
  - Each student's first partner will be the person standing directly across from them (each 1 will pair with a 2—if you have an odd number, there will be one group of three).



*Image from History Makers USA*

2. Still standing in the circle, ask students to **discuss the color they chose and why** with their first partner.
3. Ask students in the outer circle to move one step to their left. The person across from them will be their new partner, with whom they will **discuss the symbol they chose and why**.
4. Ask students in the outer circle to move one more step to their left. With this new partner, **discuss the image they chose and why**.

5. You can continue this rotation so that students have multiple conversations about each of the prompts.
6. If time permits, end with a full group discussion, asking students if they noticed common colors, symbols, images, and themes amongst their peers.

### LESSON ASSESSMENT

Students will complete an “exit card” before leaving the class, explaining:

- One thing learned or realized from the Color, Symbol, Image activity.
- One thing learned from discussion with peers.
- One (or more) questions they have.

### SUGGESTED CULMINATING PROJECT: 2023 OCEAN AWARENESS CONTEST

Bow Seat’s [Ocean Awareness Contest](#) is a call for young artists, conservationists, makers, thinkers, and activists who are concerned about the future of our blue planet. Your students are invited to join the thousands of youth around the world in our annual program that raises awareness about planetary health, uplifts youth voices for environmental conservation, and inspires hope and action through art, creative media, and storytelling.

The 2023 Ocean Awareness Contest – *Climate Heroes in Action* – encourages students to learn about both climate change and solutions to the climate crisis. We want to celebrate the work of countless everyday heroes fighting to make the world more habitable and just in the face of human-induced climate change. These heroes are leading with determination, resolve, and even joy to create a better world for us all.

#### ***Climate Heroes in Action Prompt***

This prompt is meant to inspire and guide you. Please feel free to expand on them—do not feel limited by them. Explore our [Resource Studio](#) for inspiration then start creating!

**Research and choose an inspirational scientist, activist, artist, educator, or other hero who is working to solve climate change issues. Create a piece of art, writing, or media that highlights their efforts, organizations, and/or positive impacts. We are familiar with the amazing work of environmental giants like Greta Thunberg and David Attenborough. We challenge you to introduce the Bow Seat community to a Climate Hero whose work we may not know about yet – but should.**

Students ages 11-18 from around the world are invited to participate. Submissions accepted in: Visual Art (any medium), Creative Writing, Film, Performing Arts: Music & Dance, Interactive & Multimedia, and Poetry & Spoken Word. Students may earn cash awards of up to \$1,500, and student work becomes part of a global art collection that is helping to raise awareness and inspire protection of our oceans.

**Deadline to enter: June 12, 2023**

Visit [bowseat.org/resources](https://bowseat.org/resources) for additional classroom resources, inspiration, and media!

## COMMON CORE STANDARDS

**Standards for English Language Arts 6-12 and Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6-12**

### **College and Career Readiness Anchor Standards for Reading (CCRA.R/CCRA.RH/RST)**

#### **-Informational Text-**

##### Key Ideas and Details

**CCRA.R.2/ CCRA.RH/RST.2:** Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

##### Integration of Knowledge and Ideas

**CCRA.R.7/CCRA.RH/RST.7:** Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.

### **College and Career Readiness Anchor Standards for Speaking and Listening (CCRA.SL)**

##### Comprehension and Collaboration

**CCRA.SL.1:** Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

**CCRA.SL.2:** Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

##### Presentation of Knowledge and Ideas

**CCRA.SL.4:** Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

**CCRA.SL.5:** Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.



## **Color, Symbol, Image Activity**

**Choose a color that most represents your feelings.**

**Choose a symbol that most represents your insights about this topic.**

**Draw an image that best communicates your knowledge about this topic.**

## **Water and Climate Change**

<https://www.ucsusa.org/resources/water-and-climate-change>

Water in its various forms is always on the move, in a complex process known as the water cycle. Global warming is already having a measurable effect on this cycle, altering the amount, distribution, timing, and quality of available water. Water users – from communities, to industries, to ecosystems – are in turn affected: their activities and functions depend, either directly or indirectly, on water.

### ***Change is underway***

With climate change, the water cycle is expected to undergo significant change. For example, a warmer climate causes more water to evaporate from both land and oceans; in turn, a warmer atmosphere can hold more water – roughly four percent more water for every 1°F rise in temperature. Changes like this are expected to lead to specific, and in many cases negative, consequences. Some parts of the U.S. – in particular, the Northeast and Midwest – can expect increased precipitation and runoff, especially in winter and spring, leading to increased flooding. Other areas – notably the Southwest – can expect less precipitation, especially in the warm months, and longer, more severe droughts as storm tracks shift northward leaving arid areas increasingly dry.

### ***Rain versus snow can make a critical difference***

The form that precipitation takes is also subject to change in response to warming: climate projections for many regions of North America suggest less snow, overall, and more rain. In areas dependent on the gradual melting of snowpack to supply surface water through the warm months, this means lower flows and greater water stress in summer – a trend already in evidence in parts of the western U.S. While the effects of climate change on groundwater are not fully understood, rising water competition and stress at the surface are likely to drive greater use – and overuse – of this resource.

Overall, wet areas are expected to become wetter and dry areas drier, placing additional stress on the nation's over-taxed water systems as well as water-dependent sectors.

### ***Water quality affects people and ecosystems***

Declining water quality is another consequence of climate change. Water temperature, for example, will generally rise in streams, lakes, and reservoirs as air temperature rises. This tends to lead to lower levels of dissolved oxygen in water, hence more stress on the fish, insects, crustaceans and other aquatic animals that rely on oxygen. As more – and more intense – precipitation leads to increased runoff in certain regions, we can also expect more pollution to be washed into our waterways: sediments, nitrogen from agriculture, disease pathogens, pesticides, and herbicides. Naturally, the pollution load in streams and rivers will tend to be carried to larger bodies of water downstream – lakes, estuaries, and the coastal ocean – where one of the more dramatic consequences of heavy runoff can be blooms of harmful algae and bacteria.

### ***The tide is rising***

One of the starkest effects of climate change is the anticipated rise in sea level worldwide. This occurs for two main reasons – the expansion of the ocean as it warms, and the increased melt from ice sheets, ice caps and glaciers. Along with alarming threats to coastal communities, infrastructure, economies and ecosystems, this rise has implications for available freshwater, as rising sea levels drive saltwater into freshwater aquifers. To be useful for drinking or irrigating, more water from our aquifers, then, would need to be treated, usually by energy-intensive processes. Given the wide range of human activities that depend – directly or indirectly – on water, future climate-driven changes in water resources will affect many aspects of our lives.