

What's the Sitch?

Using Multimedia to Communicate Weather Hazards

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Grade Level	10th – 12th Grade	**Duration**	3-5 class periods
Subject	English/Language Arts		

Essential Question

How are risks communicated? Why are some messages more persuasive than others?

Summary

In this lesson, students analyze and create multimedia messages to communicate the risks to life and property associated with severe weather and natural disasters. Students analyze informational graphics made by meteorologists to identify critical information and actions residents need to take in response to potentially hazardous weather. Students play the AWARE severe weather video game and create their own multimedia communications based on the gameplay. In the game, players can hire STEM professionals to unlock additional features like storm sirens, advanced radar, weather stations, etc. to help protect their communities. Given the strong focus on careers, this lesson also aligns with ICAP standards.

Snapshot

Engage

Students share how weather events have impacted their lives and discuss where they get weather information.

Explore

Students work in small groups to review and analyze information from multiple sources about real weather events.

Explain

Students discuss graphics and information about weather events to determine the threat, the author's intent, and which messages were more effective or persuasive and why.

Extend

Students play the AWARE video game over 2–3 class periods and gather information from their experience.

Evaluate

Students create a multimedia presentation to inform or persuade a specific audience to take specific actions (e.g., seek shelter, be prepared for hazardous weather, etc.)

Standards

Oklahoma Academic Standards: English Language Arts (Grade 10)

10.7.R: Analyze and evaluate the techniques used in a variety of multimodal content and how they contribute to meaning.
10.7.R: Select texts for specific purposes and read independently for extended periods of time.
10.7.W: Create engaging multimodal content that intentionally addresses an audience and accomplishes a purpose.
10.7.W: Write independently using print, cursive, and/or typing for various lengths of time, intentionally selecting and combining modes and genres to suit their audiences and purposes.

Attachments

- AWARE Graphic Organizer—What's the Sitch - Spanish.docx
- AWARE Graphic Organizer—What's the Sitch - Spanish.pdf
- AWARE Graphic Organizer—What's the Sitch.docx
- AWARE Graphic Organizer—What's the Sitch.pdf
- AWARE Walkthrough—What's the Sitch.docx
- AWARE Walkthrough—What's the Sitch.pdf
- AWARE_TeachersGuide 1.pdf
- Lesson Slides—What's the Sitch.pptx
- Magnetic Statements Signs—What's the Sitch.docx
- Magnetic Statements Signs—What's the Sitch.pdf

Materials

- Lesson Slides (attached)
- Magnetic Statements Signs (attached; one set)
- AWARE Graphic Organizer handout (attached; one per pair student or group)
- K20 Game Portal Account (access is free but must be requested beforehand at k20center.ou.edu/getgames)
- Desktop or laptop for each student (the AWARE game does not support mobile devices)
- Internet access
- Headphones for each student
- Video recording device (optional; most laptops have a video recording feature)
- Google folder with AWARE visual resources that students can use for their weather communications

20 minutes

Engage

Teacher's Note: Lesson Preparation

For your students to play AWARE, you'll need to set up a class in the K20 Center Game Portal ahead of time. Go to games.k20center.ou.edu and create an account. After you log in, you'll be able to create a class and invite students. For more information, refer to the Game Portal Guide in the Attachments section. If you experience any issues, go to games.k20center.ou.edu/support to contact user support. Further information can be found at the end of the AWARE Teacher's Guide in the Attachments section.

Navigate to k20center.ou.edu/getgames at least 48 hours before teaching the lesson. Fill out the form to create a teacher account. You will receive an email within 48 hours with information on how to access the game portal. Once you get into the game portal, you can create an invitation code for students to join the game. The portal also has a dashboard that allows you to track each student's progress in the game. Refer to the attached **AWARE Walkthrough** for more guidance.

To prepare for the Magnetic Statements activity at the start of the lesson, print the attached Magnetic Statements Signs before class and post them around the classroom. You may stick the signs on the wall of put them on desks around the room.

Introduce the lesson using the attached Lesson Slides. Display **slides 2-4** to share the lesson's essential questions and objectives. Ask students to stand next to the sign that "attracts" them the most when thinking about the prompt. For example, a student's family may own a livestock business that had been drastically impacted by drought in the past (perhaps they had to sell off an entire herd). Another student may have lost a house during a tornado or a fire.

Inform students that they will move around the room toward statements signs that "attract" or "repel" them the most in response to prompts about the weather. Inform students that several signs have been distributed around the room each representing a weather event: "tornado," "flood," "fire," "hail," "lightning," "drought," and "wind."

Display **slide 5** and introduce the first prompt: "Which hazard has had the greatest impact on your life?" Oklahomans typically share intense weather experiences as a part of living in the state—students, too, will probably have stories about their experiences with the weather.

After students choose their signs, have students share their thoughts about their chosen weather hazard with others around them. Then, have them share their thoughts with the whole class.

Next, display **slide 6** and ask students to move to the hazard that "repels" them the most (as in which one has impacted their life the *least*). Have students share their thoughts with others around them and then the whole class.

Teacher's Note: Weather-Related Trauma

Experiences with weather events can be highly traumatic. Some students might have had their lives changed profoundly by negative experiences with weather hazards. A house fire or tornado might have destroyed their home or, in extreme cases, caused the loss of loved ones. If you notice any student is having trouble engaging in this weather-focused activity, please accommodate them appropriately.

Next, display **slide 7** and ask them where they and their families get information about weather hazards like the ones they just talked about. Answers will probably range from TV news, social media, to friends. Generally speaking, the National Weather Service (NWS) is the most credible source of weather information, but students will unlikely mention NWS.

Share with students that, in this information age, an abundance of weather information is available from multiple sources. Inform them that, in this lesson, they will analyze several weather communications before creating their own.

30 minutes

Explore

Students will now analyze up to four weather communication scenarios. The scenarios contain various communication techniques from real-life events. The goal of this activity is to get students to think about common methods and media used to convey hazardous weather. For each scenario, students will also identify the author's intent and purpose.

The presented weather communication scenarios range in complexity, from the first with the least amount of media resources, to the last with the most complex combination of media resources.

Depending on your class dynamic, you may have students complete this activity individually or in groups. You may also choose to either present all four scenarios to all students or use the Jigsaw Strategy to assign different scenarios to different groups. Either way, the class will debrief together later to help students process and reflect on their learning.

Teacher's Note: Weather Jargon

Scenarios 2 and 4 include forecast discussions by the National Weather Service. Those discussions were written for other meteorologists, trained emergency personnel, and weather enthusiasts who understand the science behind the storms. Hence, those discussions are filled with technical meteorological jargon that students may struggle to comprehend. Reassure students that they should not stress over the jargon. The goal is for them to identify the audience and for them to get a feel of variables that meteorologists have to consider when creating weather messages.

Display **slide 8** and have students access the links to the scenarios embedded in the slide using their electronic devices. For your reference, here are the scenarios:

- Scenario 1
- Scenario 2
- Scenario 3
- Scenario 4

Once students have navigated to the scenario links, display **slide 9** and ask them to consider the following questions as they comb through the information:

1. What weather hazards are the authors concerned about?
2. What information is being shared, and why?
3. What is the author's intent? Is it to persuade, inform, or entertain?
4. Who is the intended audience?
5. What types of media are being used? (E.g., graphics, text, videos, etc.)

At the end of the lesson, you may want to tell students that they will construct a hazardous weather communication of their own, so they may draw inspiration from these weather communication messages.

45 minutes

Explain

Once students finish reading the scenarios, use the five questions on slide 9 to guide a class discussion about each scenario.

After the class discussion, display **slides 10–16** and explain the details of each event.

Scenario 1: Large, damaging hail (from May 15, 2022)

Display **slide 10** and play the "Hail Storm Oklahoma City" video embedded in the slide. Note that the dramatic video is not from the hail storm on May 15, 2022, but from a similar one in 2010. The hail dramatically intensifies at about 90 seconds into the video.

Embedded video
https://youtube.com/watch?v=OFv2W7Duqiw?t=75

Display **slide 11** and share that, during this event, multiple locations in central and eastern Oklahoma experienced large hail. The small town of Gore was hit the worst with hail damages estimated to be over $100,000.

Scenario 2: Flood (from May 5, 2022)

Display **slide 12** and play the "First Responders Help Bixby Families Find Shelter After Flooding" video embedded in the slide. A TV report of Bixby's flooding event was included in scenario 2 from the previous activity. However, this video specifically shows the human impact of the flooding event.

Embedded video
https://youtube.com/watch?v=M7Hb26KKz6E

Display **slide 13** and share that the flooding damages in Bixby were estimated to be around $2 million dollars.

Scenario 3: Fire (from March 7–8, 2020)

Display **slide 14** and play the "Beaver County Homes Destroyed in Fire" video embedded in the slide.

Embedded video
https://youtube.com/watch?v=UWF0dXhg5No

Then, display **slide 15** and share that the Oklahoma panhandle experienced a catastrophic wildfire as a result of high winds, low humidity, and drought.

Teacher's Note: Further Information about the Wildfire Event

For context, here are some details about the wildfire event from a NOAA report that you may share with students:

"The 412 wildfire began around 1000 CST about four miles east southeast of Balko Oklahoma in Beaver County. The wildfire was moving northeast at a rate of one hundred and three feet per minute. The towns of Beaver and Forgan were evacuated. There was a report of 550 structures that were threatened and 125 other minor structures threatened. There was also a report of five single residences which were damaged and another 10 residences along with several other larger buildings were destroyed. There were no reports of any fatalities. However, a few people suffered smoke inhalation. The wildfire consumed an estimated 29,030 acres and the wildfire was contained by 0800CST on March 8."

Scenario 4: Tornado (from May 4, 2022)

Display **slide 16** and play the news video "Tornado causes widespread damage in Seminole" embedded in the slide. The short video shows live coverage just after the tornado went through the town. The on-air meteorologist and helicopter pilot talk about how important weather coverage is in saving lives.

Embedded video
https://youtube.com/watch?v=Bl22lBT9Zhw

Display **slide 17** and share that on May 4, 2022, Oklahoma had a tornado outbreak with 13 confirmed tornadoes. The town of Seminole suffered the most damage. Luckily, no one was killed or even injured. This is thanks in large part to the accurate and understandable weather information residents received from many sources. The National Weather Service has provided a detailed analysis of the events that day.

100 minutes

Extend

Display **slide 18** and play the video embedded in the slide. In the video, Dr. Makenzie Krocak, a research scientist at the OU Institute for Public Policy Research and Analysis, discusses factors that influence the communication of potential weather-related hazards, how those messages are tailored to each audience, and how to build trust in the community.

Embedded video
https://youtube.com/watch?v=5_Lu3EM9iVk

Now it's time to play the AWARE game!

Students will take the role of emergency managers responsible for the safety of the communities in their area. This activity will take about two class periods to complete. Some students will complete the game in its entirety, while others may not—that is okay.

The game takes place in five different time eras, and each era consists of 10 turns. Each student is given a specific era and turn to focus on. They then record the weather information from their turns on a graphic organizer. They then create a weather communication based on their collected data. Their communication message will be in similar formats to the four weather communication scenarios presented earlier in the lesson.

Each era and turn has a unique weather threat, so students' communication messages will look different from one another. For their communication, students need to consider their audience, the threats, and the actions they want the audience to take, as well as the reasoning behind their forecasts.

Teacher's Note: The AWARE Walkthrough

The facilitator resources include the **AWARE Walkthrough**. **Do not share this walkthrough with students.** The walkthrough has all the information about each era and round in the game, including the best actions players should take to be the most successful in the game. It may be a beneficial document for you to have when teaching this lesson. You will notice that each weather event has a goofy name—these names were only for development purposes and do not appear in the game. That said, each storm in the game was based on a real storm that happened in Oklahoma.

Display **slide 19** and pass out a copy of the **AWARE Graphic Organizer** handout to each student or group (depending on how you want to facilitate the activity).

Display **slide 20** and go over the assignment. Each student or group only needs to play through their assigned era and turn, but they should continue to play the game as long as time allows or until they finish the game.

Display **slide 21** and go over the graphic organizer with the class.

Then, display **slide 22** and assign each student or group one of these listed turns from either Era 1 or Era 2:

- Era **2,** Turn **1**
- Era **2,** Turn **3**
- Era **2,** Turn **5**
- Era **2,** Turn **10**
- Era **3** Turn **2**
- Era **3,** Turn **5**
- Era **3,** Turn **7**
- Era **3,** Turn **8**

Note that each student or group should only be assigned one of the turns. Once they receive their assigned turns, have them fill in the "Era ___, Turn ___" blank spaces with the numbers of their assigned era and turn on the first page of their AWARE Graphic Organizer handout.

Teacher's Note: Assigning Eras and Turns

These turns have been specifically selected from the game to highlight important weather events. **Take some time to ensure that students have been assigned the correct era and turn number before proceeding to gameplay.** Do not assign students with turns that are not included on the list.

For your information, below are the maximum amounts of damages and injuries that can occur with each turn. Students' choices in the game can mitigate the damages and injuries. For example, Era 2, Turn 10 has a significant tornado with the potential of injuring 155 people. However, if students put storm sirens in the correct places and activate them at the right time, fewer people will be injured.

- Era **2,** Turn **1**: Hailstorm; maximum potential damage $387,000; maximum of 6 potential injuries.
- Era **2,** Turn **3**: Fire; $357,000 in damages; 4 injuries.
- Era **2,** Turn **5**: Flood; $960,000 in damages; 4 injuries.
- Era **2,** Turn **10**: Tornado; $2,341,000 in damages; 155 potential injuries.
- Era **3,** Turn **2**: Hailstorm; $78,000 in damages; 4 injuries
- Era **3,** Turn **5**: Fire; $700,000 in damages; 12 injuries
- Era **3,** Turn **7**: Tornado potential high, but didn't actually happen; no damage nor injuries.
- Era **3,** Turn **8:** Flood; $1.8 million dollars in damages; 8 injuries.

Display **slide 23** and have students play the game. Remind students to record data from their turns in their graphic organizer as they play their turns. The teacher dashboard on the game will tell you how far each student has progressed.

Once students complete the game, have students use the information they recorded on their graphic organizers to construct a weather communication. The goal of their weather communication is to protect their residents.

100 minutes

Evaluate

Teacher's Note: AWARE Images/Maps

The lesson's Google folder provides images and maps that students can use to create their weather communications.

To wrap this lesson up, display **slide 24** and ask each student to create a communication message for the hazardous weather in their assigned era. Remind students to draw inspiration from the weather communication scenarios they reviewed earlier in the lesson.

For their communication messages, have students use various forms of media to deliver their data. Ask students to also include any other pertinent information they think the audience needs to know in order to protect themselves.

This activity can be somewhat open-ended. However, if students need more direction, you may use the Bento Box strategy to guide their work. Students who are interested in making videos using iPads or Chromebooks may use tech tools like these listed below:

- CapCut
- WeVideo
- Screencastify

Some graphic design tools include the following:

- Piktochart
- Canva
- Google Drawings
- AutoDraw

It is completely possible to complete this activity without using any technology. If students wish to create their communication without technology, have them prepare a poster and a verbal presentation.

Collect students' work once they are done with their communication messages. If time permits, have students share their communication messages with the class.

Resources

- Beatlesfanxxl. (2010, May 16). *Hailstorm Oklahoma City* [Video]. YouTube. https://youtu.be/OFv2W7Duqiw
- Google Creative Lab. (2017, May). Autodraw. https://www.autodraw.com/
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- KFOR. (2020, March 9). *Beaver County homes destroyed in fire* [Video]. YouTube. https://www.youtube.com/watch?v=UWF0dXhg5No
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