

# Lesson 11: Communicating Resilient Actions

SKILLS:



**Lesson question:** What do we tell other people in our community about how we can be more resilient?

## Learning objectives:

- To wrap up the Hurricane Resilience unit, students develop and present posters to communicate how specific actions can increase resilience and decrease the harm caused as hurricanes and tropical storms make landfall in their location.

**Timing:** Four class periods

## Materials:

- Classroom computer, projector, and Internet access
  - › Sample poster: *Put a Freeze on Winter Holiday Fires* (download from [scied.ucar.edu/HurricaneResilience](https://scied.ucar.edu/HurricaneResilience))
  - › Link to the Visual.ly Infographics Gallery ([visual.ly/view](https://visual.ly/view))
- Google Slide Template for posters (linked from [scied.ucar.edu/HurricaneResilience](https://scied.ucar.edu/HurricaneResilience))
- Lists of resilient actions that students voted for during Lessons 10
- One computer or tablet for each pair of students
- Student pages:
  - › *Evaluating a Resilience Action* (page 77)
  - › *Making a Resilience Poster Plan* (pages 78-79)
  - › *Communicating Resilience Visually* (pages 80-81)
  - › *Resilience Poster Rubric* (page 82)
  - › *Poster Plan Feedback Notes* (page 83)

## Preparation:

- Copy student pages. (The two-page ones, *Making a Resilience Poster Plan* and *Communicating Resilience Visually*, can be printed double sided.)
- Review the student pages and rubric to support students as they develop posters.
- Find examples of infographics from the Visual.ly Environment Gallery that you'd like to share with students. (Focus on infographics that include science topics and include data or statistics as those will provide a good model for students.)
- Compile a list of the resilient actions that got the most votes during Lesson 10. Organize the actions into the four categories that students used over the previous lessons. (Ensure there are at least enough actions for each pair of students to have one action for their project.)
  - › Short term, individual/household actions
  - › Short term, community/regional actions
  - › Long term, individual/household actions
  - › Long term, community/regional actions

## Lesson 11: Communicating Resilient Actions

### Directions

#### Day 1

#### Introduce the resilience communication project.

- Tell students that they are going to create posters to inform their community about actions they can take for short-term and long-term hurricane resilience. Show students the list of resilient actions that they voted for in the previous lesson. Tell students that the posters are going to draw on what they have learned throughout the unit about the storms, how they affect people, and what we can do to be resilient.
- Project the sample poster: *Put a Freeze on Winter Holiday Fires* (which is from the National Fire Protection Association). Explain that, while the topic is very different from the hurricane resilience actions (the focus of student posters), this is a good example of how a poster can be used to communicate about a hazard and help people learn what they can do to stay safe.
  - › What sections of the poster describe the problem? (*Mainly the top row of information*)
  - › What sections explain what to do to stay safe? (*Most of the lower two rows of information*)
  - › How did they use graphics to communicate about data and facts? (*The central graphic has one out of 45 little trees highlighted to illustrate one out of 45 fires. The graphic to support the sentence about one in four winter fires highlights one tree out of four.*)
- Explain that each pair of students will develop a poster about a different resilience action. Have student pairs choose which resilient action they will communicate about with a poster from the list. (Alternatively, assign an action to each pair or have students select one out of a hat.)

#### Students evaluate their resilient actions.

- Handout the *Evaluate a Resilience Action* page to each student and provide each pair with a computer or tablet.
- Tell students that the first step is to explore the resilient action, describe its benefits and challenges, and decide how much it would cost relative to other resilient actions.
- Following the student page and through online research, students assess the costs, benefits, and challenges for their action and explain their reasoning.
  - › Note about costs: Categories are listed on the student page (i.e., low cost, medium, high cost) so that students don't need to find actual costs of an action. Students can probably easily determine the relative cost of many of the actions and solutions, and others will be more challenging. Visit student pairs and ask about what cost they selected. If students are unsure, remind them of the total list of actions and ask whether they think the cost would be more or less than the other actions.

#### Students plan their resilience posters.

- Handout the *Making a Resilience Poster Plan* student pages (two pages) and orient students to the student pages. Explain that this is where they will organize the information that they will include on posters. Their student page includes sections for the content that they will need in their poster, including:
  - i. A title that describes the action
  - ii. A description of the problem that the action solves
  - iii. Some information from the Storm Stories data
  - iv. An explanation of how the action reduces vulnerability
  - v. An explanation of what people would need in order to do this
  - vi. An infographic
  - vii. Photos, maps, or other types of visuals
  - › Remind students that their aim is to help other people, who haven't been studying Hurricane Resilience, learn what they can do to stay safe and decrease risk.

## Lesson 11: Communicating Resilient Actions

- Handout the *Resilience Poster Rubric*, which defines the expectations for the posters. Note that the *Resilience Poster Rubric* describes what a successful poster includes.
- Student pairs should plan their posters using the *Making a Resilience Poster Plan* student pages and referring to the Resilience Poster Rubric to make sure they have everything. (Tell students that they will focus on the infographic during the following class. A general idea of what they want to communicate is all they need at this point.)

### Day 2

#### Introduce how infographics are used to communicate.

- Tell students that they will create an infographic for their posters. Introduce infographics and how they can be used to communicate data and facts visually. Visually presenting data and facts can help people see patterns and trends that they might not notice when reading text about the same information.
  - › Show students examples of science infographics from the Visual.ly Environment Gallery. (Search the word “data” to find good examples of visual representation of data.)
  - › Introduce the *Communicating Resilience Visually* student pages, which helps students plan their infographic. Tell students that after they draft their graphic, they will get feedback from their fellow students and teacher before they create the final version.

#### Students plan their infographics.

- Student pairs should use the *Communicating Resilience Visually* student pages to plan their infographic. Students will need computers or tablets for the “finding facts and data” step.
  - › **Main idea:** Students will include their notes about what they would like to communicate.
  - › **Finding facts and data:** Students search online for information to include in their graphics and keep track of what they find.
  - › **Planning the infographic:** Students will create a title, choose data and facts to include, and decide how they want to represent the data.
  - › **Make a draft:** Students will sketch out the graphic so they can get feedback from other students and their teacher.

#### Peers and the teacher provide feedback about poster plans.

- Provide each student group with a copy of the *Poster Plan Feedback Notes* page. Explain that this is for them to record ideas and suggestions from their classmates and teacher.
- Have each student pair share the information from their *Making a Resilience Poster Plan* student pages and their draft infographic with another pair of students to collect feedback.
- After collecting feedback from their peers, have students hand in their *Poster Plan Feedback*, *Making a Resilience Poster Plan*, and *Communicating Resilience Visually* student pages. After class, review the poster plans and provide guidance/revisions as needed to help students as they create their polished posters.

### Day 3

#### Creating Posters

- Student pairs should revise their plans based on feedback, polish text, create infographics, and find photos and other images.
- Provide each pair with a computer or tablet with access to the Poster Template. Explain that the poster template is a Google Slide that is the size of a poster (2 x 3 feet). If students are not familiar with Google Slides, orient them to the tools for adding text, images, and shapes. Point out how students can decide what colors to use and fonts.

(If students need more time, either have them finish posters as homework or add an extra day for students to work on posters.)

## Lesson 11: Communicating Resilient Actions

### Day 4

#### Sharing posters

- Once posters are complete, have each pair of students present their poster to the rest of the class (2 minutes per presentation should be sufficient).
- Discuss how students feel the messages from their posters could be used by the community.
- *(If you'd like to extend this project, have students create a website to share the posters with others. Provide the URL to the community, including all people interviewed for the Storm Stories assignment. Alternatively, if there is funding for printing posters, you may have students organize a local exhibit.)*

#### Revisit the Driving Question Board one last time.

- Have students turn their attention to the Driving Question Board and invite students to look for questions that can be answered based on what they have learned about resilience and staying safe from hurricanes in Part 3 of the curriculum. If there are remaining questions, consider having students take responsibility for researching the answers and reporting what they learned to the class.

#### Wrap up the Hurricane Resilience unit.

- Have students discuss the following scenario: They meet a family that is moving to this area. The family has never lived on a hurricane-prone coast before. The people ask you how they can live in this place and stay safe from hurricanes and tropical storms. Based on what you've learned, what would you recommend to them?

#### Opportunities for Assessment

- Answers on the *Evaluate a Resilience Action* student page will provide a sense of what students know about the resilient action that they will be profiling in a poster (based on prior knowledge and a quick internet search). This can help you determine which pairs of students may need more direction and support as they develop their poster plans and graphics.
- Posters can be assessed using the *Resilience Poster Rubric*, which includes sections for evaluating the various poster components as well as the overall effectiveness.
- During the unit wrap-up, students are likely to share broad ideas about what they are taking away from the Hurricane Resilience unit instead of specifics that they focused on in their posters. If you'd like to assess these broad student ideas individually, you may wish to have students write their answer before discussing as a class.
- Give students the Hurricane Resilience Final Test to assess learning through the end of Lesson 11 (Part 3). Assessments can be downloaded from the [Hurricane Resilience Assessments](#) google folder.

#### Teacher notes

- Portions of the poster project can be completed either in-class or as homework as long as students are adept at working collaboratively outside of the classroom.
- About Infographics:
  - › Students are encouraged to include data within their infographic, which may be a graph or chart. Depending on student abilities, and the types of data that they wish to use, you may need to hold an introduction to working with data and graph creation.
  - › To support students as they develop infographics for their posters, you may wish to download information pages from the STEM Literacy Through Infographic website ([science-infographics.org](http://science-infographics.org)), which are also linked from the *Hurricane Resilience* resources page ([scied.ucar.edu/HurricaneResilience](http://scied.ucar.edu/HurricaneResilience)).

Group Names:

## Communicating Resilience

Lesson 11 Student Pages

# Evaluating a Resilience Action

Name and briefly describe a resilience action.

This action is:

- short term
- long term

It's something that can be done by:

- an individual or household
- a community or region

	Describe what you know (or what you think you know.)	Explain your reasoning (and provide evidence if possible.)
<b>Cost estimate</b> Circle one.	Low Medium High	
<b>Benefits</b> Which problem(s) do/does the action address, and what would be improved?		
<b>Challenges</b> List anything that affects implementation.		

Group Names:

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## Communicating Resilience

Lesson 11 Student Pages

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### Making a Resilience Poster Plan

Use the spaces below to create an outline of your resilience action poster.

#### Your poster title

Your title should include the name of the resilient action, clearly stating what the action is.

**Our action plan is for:**  Individuals/households  Communities

#### Describe the problem that this action solves.

The problem should be associated with hurricanes and tropical storms.

#### Include information from Storm Stories related to the problem or action.

Add information from the data that your class collected and analyzed (for example, the percentage of people surveyed who experienced the problem or took this action).

Group Names:

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## Communicating Resilience

Lesson 11 Student Pages

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### Making a Resilience Poster Plan *(continued)*

Use the spaces below to create an outline of your resilience action poster.

**Explain how the action reduces vulnerability.**

**What's needed for this action?**

List information about the time, money, people's help, or other things that would be needed for this action.

**Summarize an idea that you want to communicate visually.**

You will make an infographic that includes data or facts related to your topic.

**Photos, maps, and/or other types of visual aids.**

You should include at least one photo, map, or visual component in addition to your infographic.

Group Names:

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## Communicating Resilience

Lesson 11 Student Pages

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### Communicating Resilience Visually

For your resilience poster, you will create an infographic that communicates a part of your poster topic. An infographic is used to represent data and facts visually. Visually presenting data and facts can help people see patterns and trends that they might not notice when reading text about the same information.

#### The main idea

What's the main idea you wish to communicate with your infographic? Write it as one sentence. Try to make the sentence simple.

How does your main idea connect to your poster topic?

How can this information be conveyed visually? (List your ideas!)

#### Finding data and facts

What data and facts can help you communicate your main idea? List the specific data and facts on the left that you'd like to include. Search online for each item and add notes about what you find in the column on the right.

Data or fact searched	What we found online (and where we found it)



Group Names:

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## Communicating Resilience

Lesson 11 Student Pages

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### Communicating Resilience Visually *(continued)*

#### Planning the infographic

1. What is the title of your graphic? (should be similar to the main idea)
  
  
  
  
  
  
  
  
  
  
2. What data/facts will your graphic contain? (choose 2-4 things)
  
  
  
  
  
  
  
  
  
  
3. How will you represent the data? (line graph, pie chart, icons, numbers, etc.)

#### **Make a draft of your graphic and get feedback from others.**

Sketch the layout of your infographic on paper once you have collected all the facts and data that you want to put on your graphic and have a basic idea of how you would like it to look.

You will present your sketch and your answers to the three questions above to other students and your teacher. Use their feedback to make sure your infographic communicates the main idea.

#### **Create your graphic!**

- For visual representations of data (such as a graph or chart), use Google Sheets or Excel to create visuals that you will add to your poster.
- For visual representations of facts, try the tools in Google Slides to create shapes, lines, and format text. Add your own artwork, photos, or clipart to help communicate the facts.

Group Names:

## Communicating Resilience

### Lesson 11 Student Pages

## Resilience Poster Rubric

	0	1	2	3
The poster contains a title that describes the action.	No title is provided.	The title is too vague to understand what the action is.	The title is provided and related to an action but is somewhat unclear.	The title clearly states what the action is.
The poster includes which scale of plan is addressed by the action.	The poster doesn't indicate which scale.	The plan is mentioned but incorrectly identified.	The plan is mentioned, but it is not clear which one the action relates to.	The plan addressed is clearly and correctly stated.
The problem addressed by the action is described on the poster.	No problem is mentioned.	The problem is described incorrectly and/or incompletely.	The problem is described clearly, but it does not relate to hurricanes.	The problem is described clearly and accurately.
The poster connects to storm story data.	No connection to a storm story is evident.	A quote/summary is present, but it does not relate to the action or problem.	A quote/summary is present but weakly links to the action or problem.	At least one quote/summary from a story with a strong link to the action is provided.
The poster explains how the action reduces vulnerability.	No explanation of how the action reduces vulnerability.	Vulnerabilities are mentioned but not explained.	Vulnerabilities are mentioned but not clearly explained as they relate to the action.	A clear explanation of how action reduces vulnerability is provided.
The poster describes the benefit(s) of the action.	No mention of the benefits is evident.	The benefits of the action are mentioned but incomplete.	The benefits of the action are clearly mentioned but supporting research not mentioned.	The benefits of the action are clearly mentioned and supported by research.
The steps of implementing the action, including costs, are presented.	The poster does not mention the steps, materials, or costs.	Steps, materials, and costs are mentioned but do not provide a clear picture of what is needed.	Steps, materials, and costs are mostly complete with some gaps in what's needed to implement the action.	Steps, materials, and costs are complete and realistic and provide a clear picture of what is needed to implement the
The poster contains an infographic.	No infographic is present.	Infographic is present but is somewhat inaccurate or is poorly organized.	Infographic is accurate but distracts from our understanding of the action or problem.	Infographic is present, accurate, and clearly organized. It adds to the understanding of the action or problem.
The poster contains a visual aid (photo, etc).	No visual is present.	Visual aid is present, but it is unclear how it relates to the action or problem.	Visual aid is present and clearly relates to the topic but does not add any new information.	Visual aid is present, clearly relates to the topic, and furthers our understanding of the action or problem.
The overall effectiveness of the poster.	The poster is unorganized, unclear, or inaccurate.	Poster is lacking in accuracy, neatness, or organization and demonstrates some understanding of the action and problem.	The poster is accurate, neat, and mostly organized. It demonstrates an average understanding of the action and problem.	The poster is organized, neat, accurate, and demonstrates an in-depth understanding of the action and problem.

## Communicating Resilience

### Lesson 11 Student Pages

Group giving feedback: names

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Group getting feedback: names

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## Poster Plan Feedback Notes

Take notes in the spaces below about feedback on your poster plan from your classmates and teacher.

Poster Plan	Comments from classmates:	Comments from teacher:
Poster title		
Description of the problem that this action solves		
Information from the Storm Stories data that's related to the problem or action		
Explanation of how the action reduces vulnerability		
Description of what's needed for this action		
The draft infographic		
Photos, maps, and/or other types of visual aids		
Other suggestions		