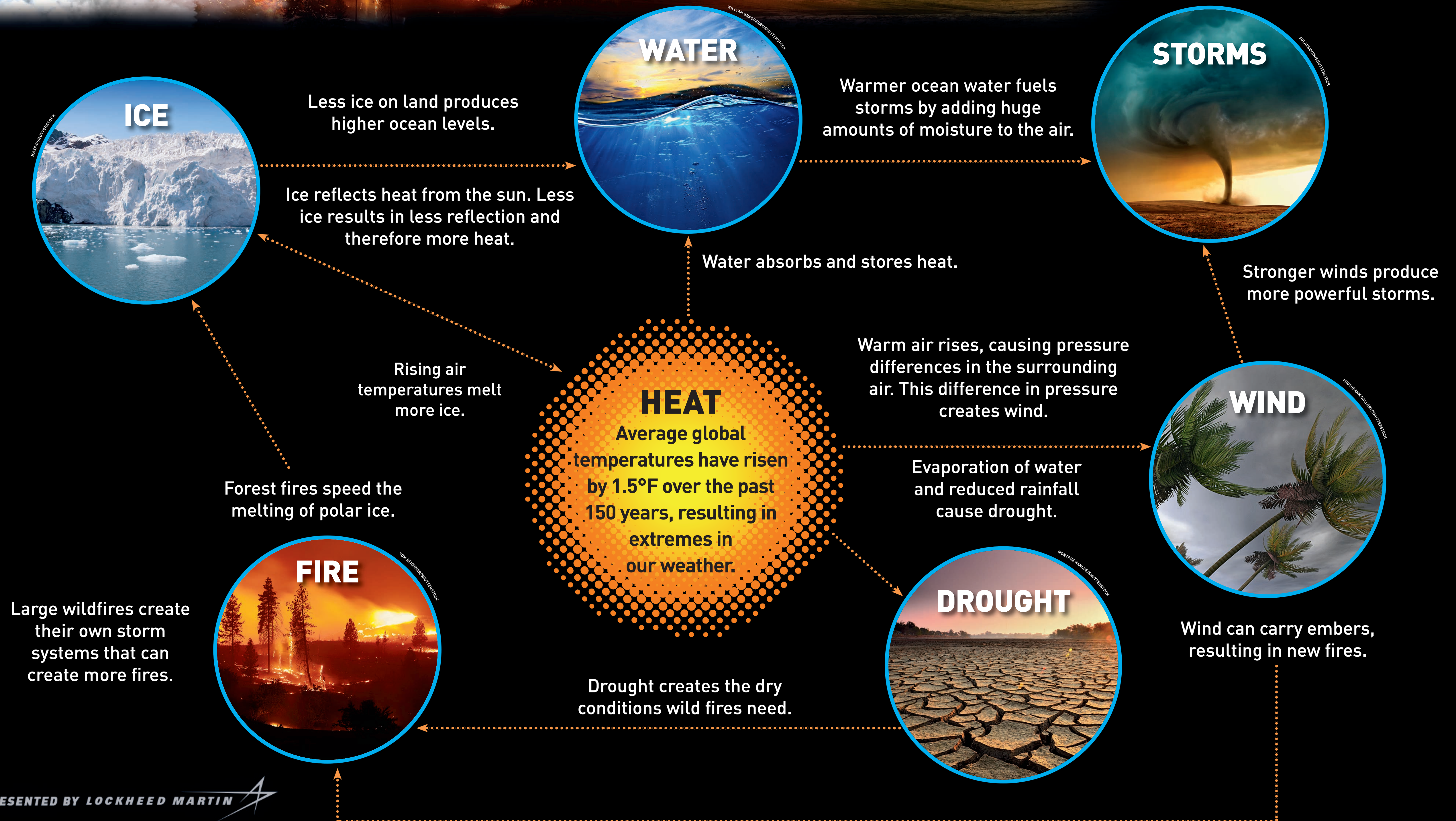


# EXTREME WEATHER

POWERFUL FORCES ARE COLLIDING

Weather is the state of the atmosphere at a certain place and time. Air and water in the atmosphere influence each other in complex interactions around the planet. It all starts with heat.



# EXTREME WEATHER

Lightning from powerful storms can ignite forest fires.



A warmer climate increases the risk of damaging floods.



Forest fires can occur naturally, but many are also caused by people.



## INVESTIGATING CLIMATE CHANGE

The climate has changed many times during Earth's history, but the changes have occurred slowly, over thousands of years. Only in the last hundred years or so have human activities begun to influence climate—and scientists are still struggling to understand what the consequences might be.

### THINK ABOUT

Climate changes happen for a variety of reasons. Some changes are a result of natural causes. These might include:

- El Niño and other atmospheric events
- The tilt of Earth's axis and the shape of its orbit
- Sunspots that change the amount of sunlight reaching Earth
- The result of large meteors hitting Earth's surface
- Plate tectonics
- Greenhouse gases released due to natural events, such as volcanic eruptions

Human activities also affect climate change, such as:

- Burning fossil fuels
- Deforestation
- Pollutants emitted into the atmosphere from industry
- Methane produced by agricultural development and materials consumption (landfills)
- Chemicals used in refrigeration and aerosol sprays

### TO DO

Although we can't do anything about the natural causes of climate change, we can learn more about the human causes and what we can do about them.

- Learn more about one of the human activities that impact climate.
- Develop a list of actions humans are taking to lessen the impact.
- Then highlight actions from the list that you think you, your class, or your family can do to make a difference.

### TO KNOW

- Learn the difference between weather and climate. Weather describes conditions in the atmosphere over a short period of time. Climate describes weather patterns of a particular region over a longer period, usually 30 years or more.

## PREPARING FOR EXTREME WEATHER EVENTS

An extreme weather event becomes a natural disaster when it happens where people live. People stay safe during extreme weather events by preparing ahead of time.

### Things to do in the classroom:

- 1 Talk about the types of extreme weather events that are most common in your area.
- 2 Talk about any extreme weather events students have experienced.

### Ask:

- What was it like?
- How did you and your family protect yourselves?

- 1 Have students research and prepare a list of tips for staying safe in extreme weather events, such as where to take shelter or what to do if separated from a group.

- Divide the class into small groups. Assign each group one of the safety tips you've listed and ask them to create signs to educate other students and adults about the importance of disaster preparation and their assigned safety tip. Post the signs in the classroom or hallway.

### Things to do at home:

- 1 Talk about your emergency plan for responding to extreme weather events. If you don't have a plan, work together to write one.
- 2 Make an extreme weather emergency kit. Talk about what should go into the kit; collect necessary kit materials; and put the kit in a safe place easily accessible to everyone. If you already have a family emergency kit, do an inventory of items in the kit to make sure everything is there and check any dated items for expiration dates.
- 3 **At school and at home:** Make a list of activities that may help after a natural disaster, such as: donating or collecting clothes, food, or other items; organizing a fundraiser or community event; or helping families clean up. Ask: Which of these would you do if a natural disaster happened?

