

Unit 4 - Wild Weather, Changing Climates

Pacing Guide using Mystery Science

*Informational writing standards are now being covered in science. Please use [these resources](#) to address the informational writing standards. These lessons can be incorporated at any point during the unit.

Unit & Lesson #	Focus	Standards Addressed	Day (20-30 minutes)	Overview	Writing & Additional Activities
Weather & Climate Anchor Phenomenon Summer Ice Storm	Weather System Modeling	3-ESS2-1 3-ESS2-2 3-ESS3-1	1	The anchor phenomenon for this unit is an icy hailstorm that happens during warm summer weather. In the hands-on activity, Summer Ice Storm, students generate observations and questions about the phenomenon and create an initial explanation of how it happened.	Writing: See-Think-Wonder Chart Writing: Summer Ice Storm Writing: Summer Ice Storm Hail Protection
Weather & Climate Lesson 1 Where do clouds come from?	Water Cycle & Phases of Matter	3-ESS2-1	2	In this session, students examine clues about how clouds look and feel to discover what they're made of and how they form.	Review of Lesson (Google Form)
			3	In the hands-on activity, Gas Trap, students add hot water to clear cups to observe evaporation firsthand. They observe the condensation of the water vapor on the sides of the cup. They use this model to	BrainPop Jr. Video & Activities (Water Cycle)

				understand how clouds are formed. Wrap-up slides & teacher-led discussion.			
			4	Anchor Connection Students wonder: How can we use clouds to predict short-term weather? Students learn: High temperatures at ground level cause water to evaporate. Less water on the ground means more water in the air which can form clouds.	Writing: <u>Science Journal Entry</u> to answer anchor connection question.		
			5	<u>Lesson 1 Assessment</u> Extensions include: Readings, activities, and videos.			
			6	In this session, students learn how to make predictions about the weather by observing clouds and their changes.	Review of Lesson (<u>Google Form</u>)		
			7	In the hands-on activity, Storm Spotter's Guide, students create a small book to record their notes, identify different types of clouds, and think about wind direction to figure out if			
			3-ESS2-1				
			Local Weather Patterns & Weather Prediction				
Weather & Climate Lesson 2 How can we predict when it's going to storm?							

			a storm is heading their way. Wrap-up slides & teacher-led discussion	
		8	Anchor Connection Students wonder: Do we know what the weather will be like in the future? Students learn: The tallest clouds produce hail. The tops of these clouds are extremely cold even when it is hot on the ground.	Writing: <u>Science Journal</u> Entry to answer anchor connection question.
		9	<u>Lesson 2 Assessment</u> Extensions include: Readings, activities, an ELA extension, and an at-home connection.	
		10	In this session, students explore seasonal weather conditions across different regions. They investigate how weather patterns can be used to make predictions about future weather.	
		11	In the hands-on activity, Snow Fort Weather, students organize daily	
Weather & Climate Lesson 3 Where's the best place to build a snow fort?	Seasonal Weather Patterns	3-ESS2-1		

			temperature data from three snowy towns into a table so that they can compare weather conditions and predict which town is most likely to have the best weather for a snow fort festival next year. Wrap-up slides & teacher-led discussion.	
		12	Anchor Connection Students wonder: Why do some places always have the same weather? Students learn: The tallest clouds produce hail. The tops of these clouds are extremely cold even when it is hot on the ground.	Writing: <u>Science Journal Entry</u> to answer anchor connection question.
		13	<u>Lesson 3 Assessment</u> Extensions include: Readings, writing, and activities	
		14	In this session, students are introduced to the concept of “climate” and explore the world’s five major climates.	
		15	In the hands-on activity, Climate Decoder,	
Weather & Climate Lesson 4 Why are some places always hot?	Climate & Global Weather Patterns	3-ESS2-2 3-ESS2-1		

Weather & Climate Lesson 5 How can you keep a house from blowing away in a windstorm?	Natural Hazards & Engineering	3-ESS3-1 3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	18	In this session, students explore the effects of natural hazards, such as tornadoes, hurricanes, and dust storms.	Review of Lesson (Google Form)
				Lesson 4 Assessment Extensions include: Readings and activities.	
				17	
				16	
				Anchor Connection Students wonder: How can we reduce the impact of weather hazards, such as strong winds? Students learn: The long term climate high in the air is very different than the climate on the ground. On the ground it can be hot or cold; but high in the air, it is always freezing cold.	Writing: Science Journal Entry to answer anchor connection question.
				students color one part of a world map to figure out the different climates of that region. Students then combine maps and search for global climate patterns. Wrap-up slides & teacher-led discussion.	

			19-20	In the hands-on activity, Design a Windproof House, students build paper house models. Then, using limited materials, students design multiple solutions that will make their houses sturdy enough to survive a wind storm, and compare the merits of their solutions. *We recommend two sessions for students to have enough time to design, build, and compare their engineering solutions. Wrap-up slides & teacher-led discussion.	Writing: <u>Design a Wind Proof House</u> Book: <u>How a House is Built</u> Book: <u>Wind</u>
			21	Anchor Connection Students learn: Winds have a huge impact on weather around the world. They can be hazardous to buildings that people use.	Writing: <u>Science Journal Entry</u> to answer anchor connection question.
			22	<u>Lesson 5 Assessment</u> Extensions include: Readings and activities.	
Weather and Climate Unit Assessment			23	<u>Weather and Climate Unit Assessment</u>	

Weather & Climate Performance Task Can we predict when it's going to hail?	Weather and Climate	3-ESS2-1 3-ESS2-2 3-ESS3-1	24	In the Performance Task, students analyze and represent real weather data in tables and bar graphs in order to forecast hail storms during different seasons and in different regions of the United States.	Writing: Future Hailstorm Prediction
Benchmark #4			25	LPS Benchmark #4 (Given via LinkIt!)	