



AT-HOME SCIENCE LEARNING



#5 WEATHER

PARENTS

At-Home Science Learning is all about you and your children exploring science in a fun, hands-on way using simple supplies found around your home. Use the “Parent Guide” to help support your children through the activities plus see a list of required materials needed. Print out the “At-Home Science Journal” for your child to follow along with each activity. The activities are designed to take 15 – 30 minutes. Get your whole family exploring science together!



This project is funded by the California Collaborative for Educational Excellence in collaboration with the Office of the Fresno County Superintendent of Schools.




FOR THE PARENT:

#5 WEATHER

Overview: Observing and predicting the weather is a great activity to do at home as all you have to do is go outside! Explore different types of weather and the tools used by meteorologists to predict the weather. Children use this knowledge to make a hat to protect themselves from different types of weather.

Materials/Supplies:

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- An electronic device connected to the internet to watch and record videos plus access additional resources.
 - Toilet paper tube, plastic bag, tape or glue, string or yarn, empty water bottle or 2-L bottle, scissors, marker, ruler (or a ruler phone app).
 - Copy of the “Student Science Journal” and a pencil.
 - Optional supplies: colored pencils or crayons.

Each of the activities is designed to take 15–30 Minutes.

Activity 1: Weather

1. Go outside with your child. Ask your child to describe what the weather is like right now. Encourage your child to describe what they see and feel. If your child is not sure, ask them these questions: Is it warm, cold, or hot? Do you feel a wind? Is it a strong wind or just a light wind (a breeze)? Is it raining? Is it sunny? Are there clouds in the sky?
As your child shares, encourage them to use complete sentences and give them some ideas to begin.
For example,
 - a. I notice...
 - b. I feel...
2. Help your child go to their Science Journal – Activity 1 section and have them record all the different types of weather they have experienced where they live, including weather that may not be happening right now but has happened in the past.
As your child fills in the circle map in their journal, help them express their observations in the past tense.
For example,
 - a. Where I live I have experienced...
 - b. In the past, I have seen...
 - c. Something else I have noticed is...
3. Tell your child that they are going to record the weather over the next 7 days in their Science Journal – Activity 1. Help your child record what the weather is like right now. In the first column of the chart, your child will write down today’s date and time. Then, in the second column, your child will describe the weather using pictures or words. Point out the weather images below the chart to help your child.
4. For the current temperature (third column), you can use the Weather Channel website: weather.com (be sure to put your city in the search bar) or use a phone app such as “The Weather Channel” or “Swackett.”
5. For the next 7 days, go outside with your child to observe and record the weather. If possible, try to collect weather observations close to the same time each day.

Activity 2: Patterns in the Weather

1. After collecting your weather observations for several days, ask your child what they noticed about the weather. What changes did they observe in the weather during the week? Have your child record their noticings in their Science Journal – Activity 2 section.
As your child shares, continue encouraging them to use complete sentences. Provide them with some ideas to begin. For example,
 - a. Some changes I observed were...
 - b. I noticed during the week that...
2. Have your child count how many days it was sunny, how many days had clouds, how many days they felt wind or a light breeze, and how many days it rained. Help your child color in the number of days in the graph in their Science Journal – Activity 2.
3. Ask your child if they noticed a pattern in the temperature each day. Did it get warmer, colder, or did the temperature stay about the same during the week?
4. Help your child graph the temperature data collected during the week. Does the graph help you see if the temperature got warmer, colder, or stayed the same?

Activity 3: Forecasting the Weather

1. Ask your child: “Why is it important to know what the weather will be like for the day? How does knowing the weather help us prepare for the day?” Have your child record their thoughts in their Science Journal – Activity 3 section.

Some possible sentence starters for your child to begin their responses are,

- a. It’s important to know what the weather will be because...
 - b. Knowing the weather can help us prepare for the day by...
 - c. Another way it helps us prepare is...
2. Listen to a story about a young girl who learns how to forecast (predict) the weather. The book is called “Mira Forecasts the Future.” Use your electronic device and go to this link: tingurl.com/book-Mira
 3. After the story, have your child go to their Science Journal – Activity 3 and record the different tools Mira used to predict the weather. Go back and rewatch the section of the story where Mira researches the different tools (4:55 – 6:15) or direct your child to this website for more information:

tingurl.com/tools-weather

Here are the 6 weather tools Mira mentions in the book:

1. Thermometer
2. Barometer
3. Rain gauge
4. Windsack
5. Anemometer
6. Her eyes – to observe the clouds



Activity 4: Create a Windsock

1. In this activity, you will help your child create a windsock which is one of the tools that can be used to collect weather information. Gather the following supplies:

1. Something to make a tube-shaped body – toilet paper tube or empty tin can with both ends removed
2. Plastic bag cut into long strips or old ribbon
3. String, yarn, or ribbon
4. Glue or tape
5. Optional: crayons, markers, paint to decorate windsock



2. Help your child glue or tape the plastic bag strips to one end of the toilet paper tube or tin can.
3. Tape or glue two or three pieces of string or yarn to the other end of the toilet paper tube along the edge. These pieces of string will be used to hang the windsock.
4. Find a location outside to hang your windsock. Use a nail or pushpin to secure the strings from the top of your windsock to a pole, stick, or another spot. Try to find a spot that is not blocked from the wind.
5. Your child can observe the windsock to determine if there is a light breeze (windsock is not moving or moving a little bit) or if there is a stronger wind (windsock is moving a lot).
6. After creating their windsock, have your child go to their Science Journal – Activity 4 section and draw their final product.

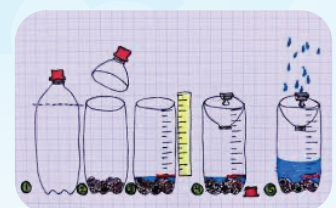
Activity 5: Create a Rain Gauge

1. In this activity, you will help your child create a rain gauge which is one of the tools that can be used to collect weather information. Gather the following supplies:

1. Empty water bottle or 2-L soda bottle
2. Scissors and a permanent marker
3. Ruler or a ruler phone app (a good app is “Ruler, Measuring Tape – No Ads”)
4. Optional: A few rocks



2. Parent, please do this step for your child for safety! Cut the top third of the water bottle or 2-liter plastic bottle and put this top part to the side.
3. Place a few rocks at the bottom of the bottle. Pour water in the bottom of the bottle until just above the stone level. The rocks are in the bottom to keep your rain gauge from falling over. If you don't have rocks, another option is to find a spot in your yard where you can dig an inch or two into the dirt and place the bottle in that shallow hole.
4. Use a ruler (or ruler phone app) to measure and draw a scale in inches on the side of the bottle. If you have added the rocks and water to the bottom of your bottle, the zero-inch measurement should start at the waterline. If you aren't using the rocks and water, then zero should be at the bottom of the bottle, and then mark the inches and half-inches as you move up the bottle.
5. Invert the top part of the bottle you cut off and place it upside down on the bottom half to act as a funnel for the rainwater. You can tape this top piece to the bottom piece to secure it if needed.
6. Leave the bottle rain gauge outside to capture rain. Be sure it's in a location where the rain will not be blocked.
7. After creating their rain gauge, have your child go to their Science Journal – Activity 5 section and draw their final product.



Activity 6: Clouds

1. On a day with clouds in the sky, go outside with your child and encourage them to make observations of the clouds. Your child can draw the clouds they see in their Science Journal – Activity 6 section. Ask your child: “Are there always clouds in the sky? Do clouds always look the same?”
2. Use your electronic device to listen to this story titled “Clouds”: tinyurl.com/book-clouds
3. Show your child the different cloud pictures in their Science Journal – Activity 6. How are the clouds different from each other?
4. If you have older children, they might like to learn about the more specific types of clouds. Have your older child go to this website: tinyurl.com/pictures-clouds
5. Have your child observe clouds for a few days and record their observations in their Science Journal – Activity 6. Help your child identify the types of clouds they observe. (Older children can use the website from above to identify more specific clouds.)
6. After completing a few days of cloud observations, have your child count how many days had clouds in the sky and how many days did not have clouds in the sky and record in their science journal.

Activity 7: Create a Weather Forecast

1. Help your child become a “TV Meteorologist” by creating a weather forecast to share with family and friends. To help your child understand what a TV Meteorologist does, have them watch the weather portion on their local news channel. You can also search for the current weather forecasts by looking up your local news channel on the Internet.
2. Using their Science Journal – Activity 7 section, have your child record the current weather conditions they would like to include in their weather forecast.
3. Using your electronic device, film your child’s weather forecast and have your family watch it together. As your child creates their weather forecast, continue encouraging them to use complete sentences as they talk. Provide them with some ideas to begin. For example,
 1. Welcome ladies and gentlemen to tonight’s weather forecast for our week!
 2. This week you can expect to see...
 3. We can expect the clouds to...
 4. Our temperatures should be...
 5. There is a (high or low) chance of rain this week so expect...
 6. You can be prepared for the weather this week by...



Activity 8: Engineering Challenge

1. Create a hat for the weather!

On sunny days, it can get warm standing in the sun and the bright sun can bother your eyes. Help your child gather various supplies from around the house to create a hat. Some supplies could include: cardboard (empty cereal or cracker boxes work great), paper, paper plate, foil, tape, etc.

2. Have your child design and create a hat that will protect them from the sun. After creating their hat, have them test it by going outside on a sunny day. Your child can draw their “Sunny Day Hat” in their Science Journal – Activity 8 section.

3. Ask your child: “Would your Sunny Day Hat work to keep you dry on a rainy day? Why or why not?” Give your child the opportunity to create a new “Rainy Day Hat” using the same supplies. Feel free to add any new supplies from around the house to help your child create this new hat.

Continue encouraging your child to respond to you using complete sentences. Some ways they can begin their answers to you are,

- a. I believe my sunny day hat (will or will not) keep me dry on a rainy day because...
- b. Another reason is...

4. Have your child test out the Rainy Day Hat. If it isn't raining, sprinkle or spray some water on the hat. Have your child record what happened in their Science Journal – Activity 8. If their hat doesn't survive the rain test, have your child redesign the hat and try again.

5. Be sure to take pictures of your child wearing their different hats!



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#5 WEATHER

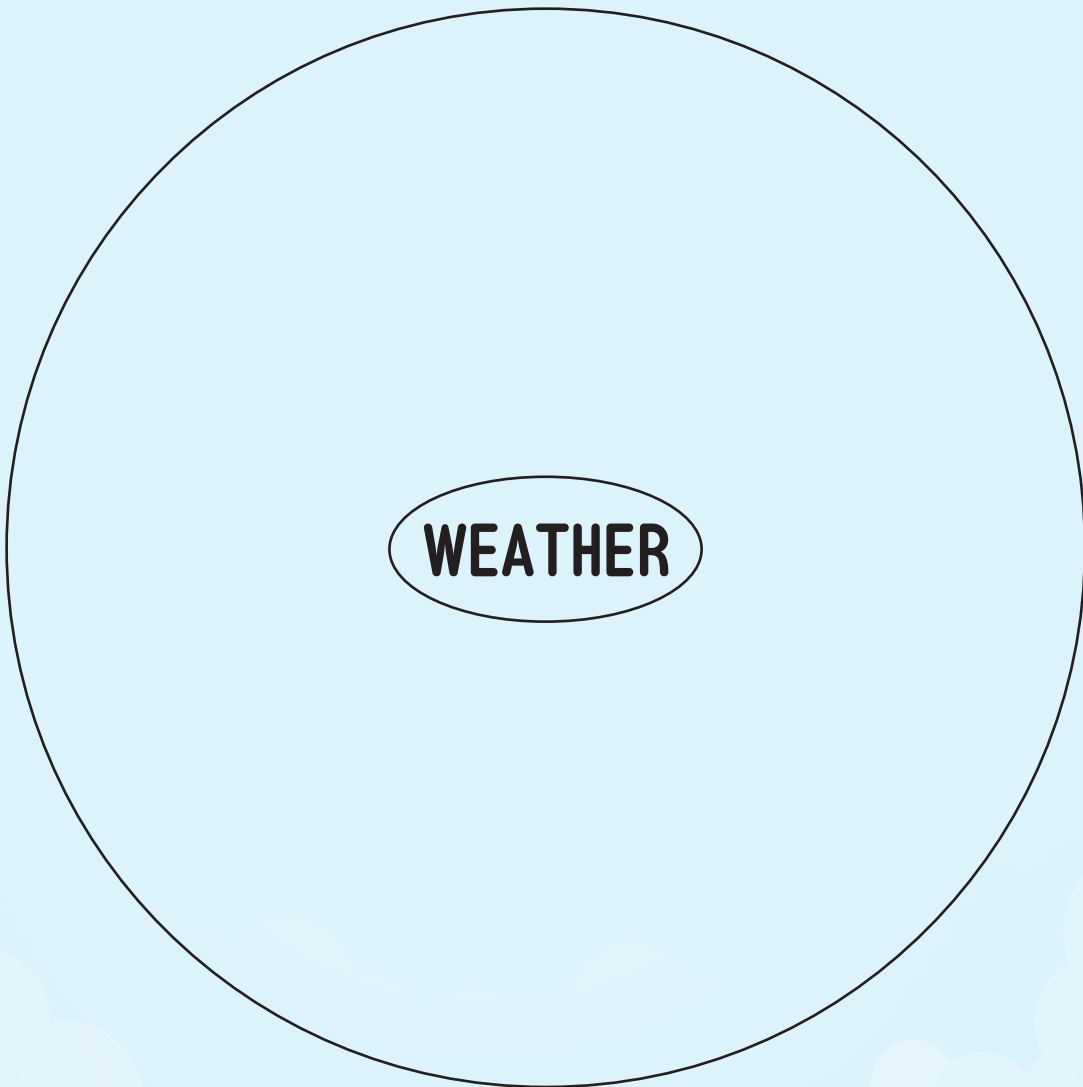


NAME: _____



Activity 1:

In the circle map, draw  or write  the different types of weather you have where you live.

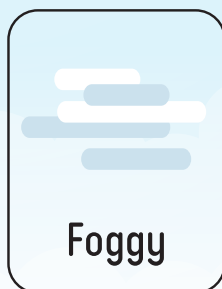
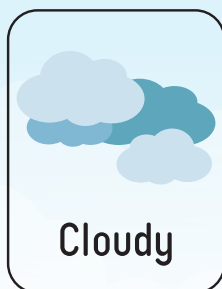
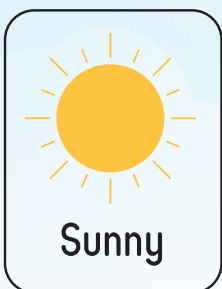


Right now, the weather is _____

Record the weather for the next 7 days:

DATE AND TIME	DESCRIBE THE WEATHER TODAY:	TEMPERATURE (°F)
DAY 1		
DAY 2		
DAY 3		
DAY 4		
DAY 5		
DAY 6		
DAY 7		

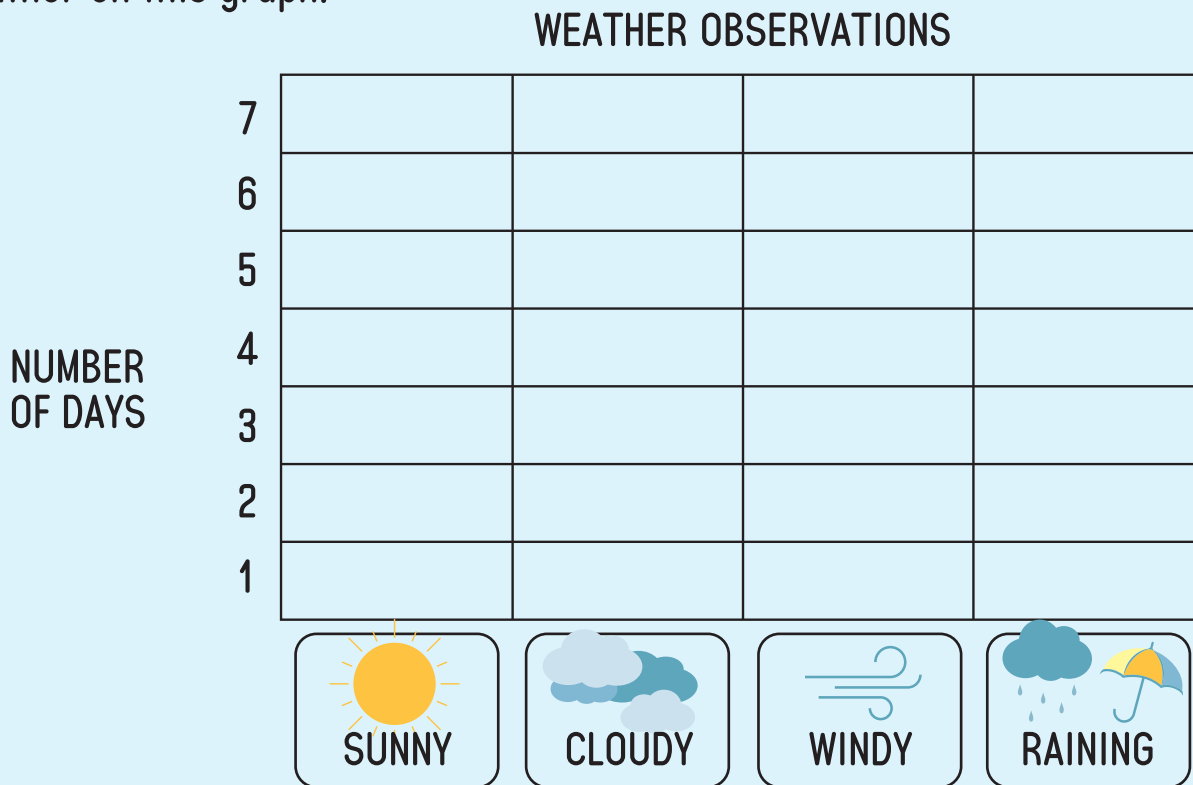
Here are some examples of how to describe or draw different types of weather:



Activity 2: Patterns in the Weather

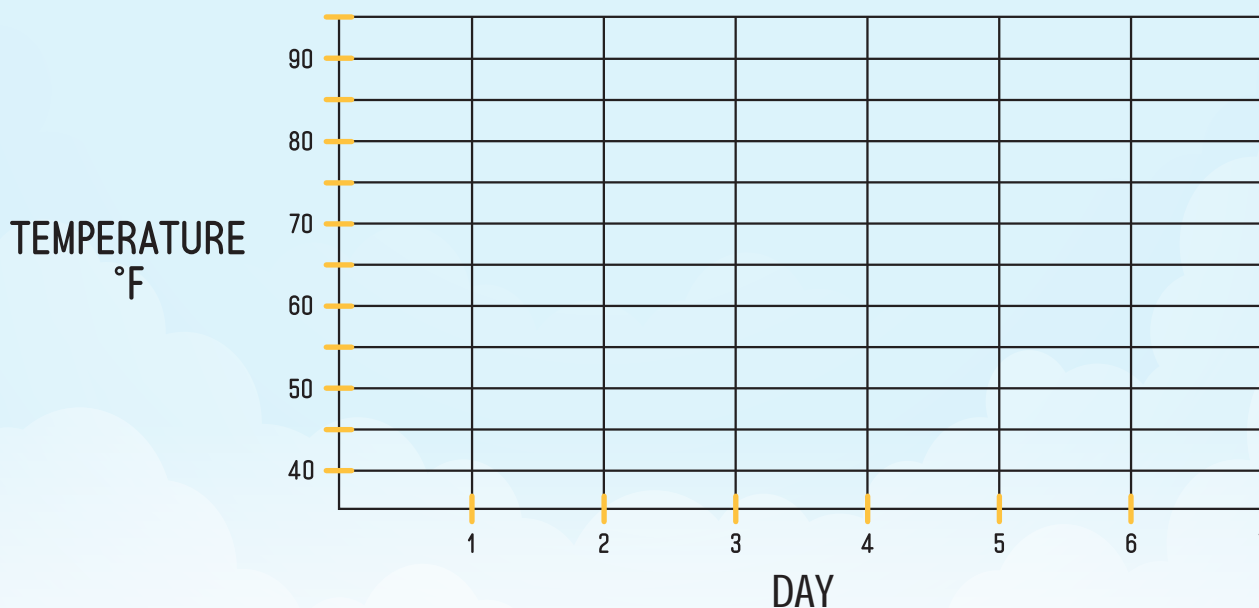
After observing the weather this week, I noticed...

Count and color in how many days you observed these different types of weather on this graph.



Temperature graph:



THE TEMPERATURE THIS WEEK



This graph helped me see that the temperature _____ during the week.

Activity 3: Forecasting the Weather

It is important to know what the weather will be like for the day because...

Draw  and write  the names and descriptions of the tools that Mira used to forecast the weather in the story.

WEATHER TOOLS

TOOL: _____

TOOL: _____


TOOL: _____

TOOL: _____

TOOL: _____

TOOL: _____


Activity 4: Create a Windsock

Draw  a picture of the windsock you created.

Right now, my windsock is showing me...



Activity 5: Create a Rain Gauge

Draw  a picture of the rain gauge you created.

The hardest part of building a rain gauge was...

Activity 6: Clouds



These are the clouds I see in the sky today:

Types of Clouds:



STRATUS



CIRRUS



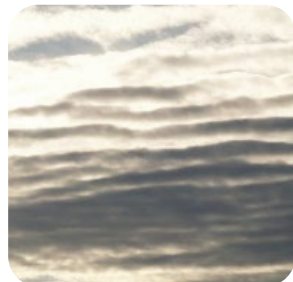
CUMULUS



ALTOCUMULUS



CIRROSTRATUS



ALTOSTRATUS

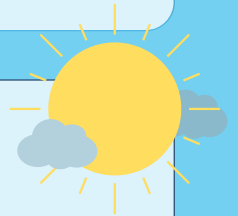
My cloud observations:

DAY 1	
DAY 2	
DAY 3	
DAY 4	
DAY 5	

I counted _____ days with clouds.

I counted _____ days without clouds.

So there were more days _____ than _____.



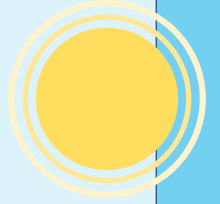
Activity 7: Create a Weather Forecast

It is YOUR turn to be a Meteorologist!

To get ready, write or draw information about today's weather you want to report to family and friends:

I liked being a Meteorologist because...

Activity 8: Engineering Challenge

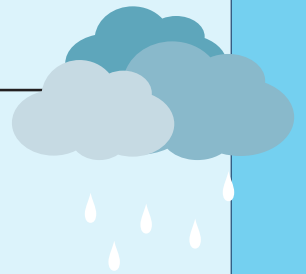


Here is a drawing  of my “Sunny Day Hat”

This hat protects me from the bright sun because...



Here is a drawing  of my “Rainy Day Hat”



This hat protects me from the rain because...

