

Weather Watchers by the Sea: teacher guide

Teacher guide. Keep separate from student materials.

Grade band	Grades K-2
Subjects	Science, History and Social Science, Mathematics
Towns	Manchester-by-the-Sea
Duration	Three 20-minute sessions plus a 2-minute weather check on 10 school days (about 80 minutes total over two weeks) (sequence totals 80 minutes)
Prerequisites	Students can make tally marks and count to 20.; Students know the words sunny, cloudy, rainy and windy.
Essential question	How does watching the weather help people stay safe and have fun at the beach and on the water?
Version	1.0, 2026-10-05
Review status	Draft: awaiting classroom teacher review
Lesson ID	CAC - LES - 004

Objectives

Students will be able to:

- observe the daily weather and record it with tally marks on a class chart for 10 school days.
- count the tallies and tell which kind of weather happened most and least.
- find Manchester-by-the-Sea on a Massachusetts map and name the ocean, a beach and the harbor on a class coast map.
- use a simple forecast to decide what a boater or a beachgoer should do and give a reason.

Massachusetts curriculum frameworks

Code	Standard (verbatim) and source	How this lesson addresses it
K-ESS2-1	Use and share quantitative observations of local weather conditions to describe patterns over time. Science and Technology/Engineering Curriculum Framework (2016), Kindergarten. Official framework , page PDF p. 35 (printed p. 32).	Students record 10 days of local weather with tallies and describe patterns from their counts.

Code	Standard (verbatim) and source	How this lesson addresses it
K-ESS3-2	Obtain and use information about weather forecasting to prepare for, and respond to, different types of local weather. Science and Technology/Engineering Curriculum Framework (2016), Kindergarten. Official framework , page PDF p. 35 (printed p. 32).	Students use forecast cards to decide what boaters and beachgoers should do to prepare for the weather.
2-ESS2-2	Map the shapes and types of landforms and bodies of water in an area. Science and Technology/Engineering Curriculum Framework (2016), Grade 2. Official framework , page PDF p. 39 (printed p. 36).	Students build a floor map of the Manchester coast showing the ocean, the harbor and Singing Beach and name each body of water and landform.
K.T2, standard 4	With support, on a state map, find the city or town where the student's school is located; on a street map of the city or town, find the location of the student's school. History and Social Science Curriculum Framework (2018), Kindergarten. Official framework , page PDF p. 34.	Students find Manchester-by-the-Sea on a state map and find their school on a town street map.

Standards checked against the official Massachusetts DESE framework documents on Oct. 5, 2026.

Materials

- Large class tally chart (see the data sheet) on chart paper, plus a printed copy for each student
- A thermometer outside a window, a wind streamer or pinwheel and a clear cup for rain
- A Massachusetts state map and a street map of Manchester-by-the-Sea (printed, or from the town website)
- Blue yarn or masking tape for the coastline, sand-colored paper labeled BEACH, small blocks for buildings
- Word labels: OCEAN, HARBOR, SINGING BEACH, TOWN DOCK, MASCONOMO PARK, OUR SCHOOL, LAND
- Forecast cards (teacher written, see Session 3)
- Clipboard with the observation checklist

Setup

Post the tally chart with weather words down the side: SUNNY, PARTLY CLOUDY, CLOUDY, RAINY, WINDY, FOGGY, SNOWY. Put the thermometer, streamer and rain cup where students can check them. Before Session 2, look at a real map of Manchester-by-the-Sea so you can place the harbor, the town dock, Masconomo Park and Singing Beach correctly on the floor map. Write six forecast cards on index cards (examples are in Session 3).

Teaching sequence

20 minutes Session 1. We are weather watchers

Teacher: Read passage R1. Say: "Weather watchers look, feel and count. Every day for two weeks, we will check the weather and make a tally mark." Show how a tally works: four lines, then a fifth line across makes a group of five. Take the class to the window. Ask: "What do you see in the sky? Is our streamer moving? Is there water in the

rain cup? What does the thermometer say?" Make the first tally. Then hold up the Massachusetts map and say: "Manchester-by-the-Sea is right here, on the ocean." Help students find it, then find the school on the street map. *Students:* Listen, check the weather tools, help make the first tally and find the town on the state map and the school on the street map.

20 minutes Daily weather check (2 minutes on 10 school days)

Teacher: Each morning, choose a Weather Watcher. Say: "Weather Watcher, what is the weather today? How do you know?" Add a tally next to each weather word that fits (a day can be both sunny and windy). Write the temperature in the last column. On day five, ask: "Which row has the most tallies so far?"

Students: Take turns as Weather Watcher, give a reason using a tool or the sky and add tallies.

20 minutes Session 2. Map our coast

Teacher: Say: "Our town is by the sea. Let's build a map on the floor." Lay down the yarn or tape as the coastline. Ask students to place labels as you read passage R2: OCEAN, LAND, HARBOR, TOWN DOCK, MASCONOMO PARK, SINGING BEACH and OUR SCHOOL. Ask: "Where is the water? Where is the land? Which is bigger, the ocean or the harbor? Where would a boat tie up? Where would a family go to swim?" Have students walk from the school label to the beach label and tell the way they went.

Students: Place labels on the floor map, name each place as water or land and walk a route on the map.

20 minutes Session 3. Count, forecast and decide

Teacher: Count each row of the tally chart together by fives and ones. Ask: "Which weather did we have the most? The least? How many more sunny days than rainy days?" Then read passage R3. Say: "A forecast tells what the weather will probably be. People who make forecasts study the weather with special tools." Read one forecast card at a time, such as: "Tomorrow: sunny and warm, light wind." "Tomorrow: thick fog in the morning." "Tomorrow: strong wind and big waves." "Tomorrow: thunderstorms in the afternoon." "Tomorrow: cold and snowy."

"Tomorrow: cloudy and cool, calm wind." For each card, ask two children to stand on the map: one at the harbor as a boater and one at Singing Beach as a beachgoer. Ask: "What should you do? What should you bring? Why?"

Students: Count the tallies, compare rows, then act as boaters and beachgoers deciding what to do for each forecast and giving a reason.

Background for the teacher

The National Weather Service Forecast Office in Norton, Massachusetts (NWS Boston/Norton) issues forecasts for eastern Massachusetts, including marine forecasts for coastal waters and beach and surf forecasts. The Town of Manchester-by-the-Sea's visitor page describes a scenic harbor, a 250-foot-long public dock in the town center, two waterfront parks including Masconomo Park and Singing Beach "with it's famous singing sands" (spelling as on the town page). Before Session 2, check a real map so that the floor map places these features correctly relative to the school. Kindergarten students can focus on tallies, the state map and forecast decisions; grade 2 students should name the ocean and harbor as bodies of water and the beach as a landform. Assessment points: one each for naming the most frequent weather with evidence from the counts, a correct forecast decision, a reason and correct placement on the map.

Handling sensitive topics

This lesson treats weather as something we watch and plan for. It does not describe storms causing harm. If students raise storm worries, say: "That is why people check forecasts. Boats stay in the harbor and people go inside when the weather is not safe." If a student shares a frightening experience, listen, reassure and follow up privately.

Discussion prompts

- What weather do you like best at the beach? Why?
- How is the weather at the beach different in summer and in winter?
- Why might the weather by the ocean change quickly?
- Who in your family checks the weather? What do they use?
- What would happen if a boater did not check the forecast?

Formative checks

- Can the Weather Watcher give a reason for the weather choice, such as the streamer is moving?
- Does the student make tallies correctly, crossing the fifth line?
- Can the student point to water and land on the floor map and name one place?
- Does the student's forecast decision match the forecast card and include a reason?

Assessment

Tell your teacher which weather happened most on our chart and how you know. Then listen to one forecast card and tell what a boater or beachgoer should do and why. Point to the place on our coast map where they would be.

Points: 4

Answer guidance

A1

- Answers depend on local weather. Check that tallies match the daily record and that counts are correct.
- Look for the student using the counts as evidence: Sunny has the most tallies, 6.
- Accept answers that note a day can have more than one tally, such as sunny and windy.

A2

- Ocean and harbor are water. Singing Beach, the park, the dock area and the school are on land (the dock reaches over the water).

- The ocean is much larger than the harbor.
- The route should go from the school label to the beach label without crossing the water.

A3

- Sunny, warm, light wind: boats can go out; beachgoers bring water, sunscreen and a hat.
- Thick fog: boaters wait until they can see; beachgoers may wait or bring a jacket.
- Strong wind and big waves: boats stay in the harbor; beachgoers stay out of the big waves or choose another day.
- Thunderstorms: boats stay in; beachgoers stay away from the beach and go inside.
- Cold and snowy: boats stay in; beachgoers bundle up for a short walk or stay home.
- Cloudy, cool, calm: boats can go out; beachgoers bring a sweatshirt.
- The key is a reason that connects the decision to the forecast.

Rubric

Criterion	4	3	2	1
Records and describes weather patterns	Records tallies correctly and uses counts to compare two kinds of weather (for example, 3 more sunny days than rainy days).	Records tallies correctly and names the weather that happened most.	Records tallies with help and names the most frequent weather with prompting.	Observes the weather but does not yet record or count.
Uses a forecast to prepare	Makes correct decisions for two forecasts and gives a clear reason for each.	Makes a correct decision for one forecast and gives a reason.	Makes a decision without a reason, or a reason that does not match the forecast.	Does not yet connect the forecast to a decision.
Maps the coast	Places three or more labels correctly and names each as water or land.	Places two labels correctly and tells which is water.	Places one label correctly with help.	Does not yet place labels.
Locates our town and school	Finds the town on the state map and the school on the street map without help.	Finds one with no help and the other with a hint.	Finds both with help.	Does not yet find either.

Differentiation

Multilingual learners

- Post each weather word with a gesture and practice them every morning.
- Use sentence frames: Today it is _____. I know because _____. The boat should _____ because _____.

- Pair a newcomer with a buddy for the Weather Watcher job; the newcomer may point to the word while the buddy says it.

Students with disabilities

- Provide a tally chart with larger boxes and fewer rows; a student may place counters or stickers instead of writing tallies.
- Read every word on the chart, map labels and forecast cards aloud. Do not rely on color to show water and land; use the printed words WATER and LAND.
- Students who use wheelchairs or prefer to sit can act as boater or beachgoer by placing a token on the map instead of standing on it.
- Use a tactile coastline (yarn glued on cardboard) for students with low vision.

Advanced learners

- Ask students to find the difference between the most and least common weather.
- Have students write and read their own forecast card for tomorrow, then check it the next day.
- Ask grade 2 students to add a compass rose with the word NORTH to the floor map using a real map.

Print, low-bandwidth and extension options

Print: Print the three read-aloud passages, the tally chart data sheet, the map labels and the forecast cards.

Low bandwidth: No screen needed. Printed maps and the chart are enough. The National Weather Service website is optional for the teacher.

Extensions:

- Keep the tally chart going for a month and compare the first two weeks with the last two weeks.
- Repeat the weather watch in a different season and compare the two charts.
- Families can check a forecast together before a trip to the beach and report back.
- Write a class weather report and read it aloud each morning like a forecaster.

Google Classroom: ready to paste

Assignment title: Weather Watchers by the Sea

Student instructions:

Use your weather tally chart. Each school day, make a tally mark next to each weather word that fits. After 10 days, count each row and write the total. Grown-ups at home can help by checking a forecast with you and asking: Should a boat go out tomorrow? Should we go to the beach? Why?

Suggested points: 4

Attach:

- **student-handout.docx:** Make a copy for each student
- **slides.pptx:** Students can view file
- **data-sheet.xlsx:** Make a copy for each student

Never attach the teacher guide to student work. See [how to use this lesson in Google Classroom](#).

Citations and rights

- Town of Manchester-by-the-Sea, Visitors. <https://www.manchester.ma.us/507/Visitors>. Facts only, in our words; Town of Manchester-by-the-Sea page
- National Weather Service Forecast Office, Boston/Norton, Mass.. <https://www.weather.gov/box/>. Public domain (U.S. federal government work)

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