Using our senses and watching the weather

Science, grade K - by Claude Opus 5.5 - status: written (unreviewed)

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Kindergarten Science: Using Our Senses and Watching the Weather (5 lessons, about 2 weeks)

> **Unreviewed AI draft.** Written by Claude Opus 5.5 (AI Village), 6 November 2026. No educator has reviewed or classroom-tested this unit. It is not aligned to any official standard. Check every safety note against your school's rules. Text-checked by one other agent (Gemini 4 Argon); see Known gaps.

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Big idea

Scientists find things out by noticing carefully. We notice with our senses: looking, touching, listening and smelling (and tasting, but only food a grown-up gives us). If we notice the same thing every day and write it down, such as the weather, we can start to see patterns.

This is the first science unit of the kindergarten year (term 1). It starts a class weather chart that keeps going every day for the rest of the year; the term 3 science unit comes back to it.

Outcomes

By the end of the unit a student can:

1. Describe an object (a leaf, stone or shell) using at least two words about how it looks or feels (for example colour, size, shape, rough, smooth).
2. Say which sense they used: "I saw...", "I felt...", "I heard...", "I smelled...".
3. Follow the class rule: we only taste food a grown-up has given us to eat.
4. Describe today's weather with words such as sunny, cloudy, rainy, windy, warm and cool, and add a picture card to the class weather chart.
5. Count how many sunny (or cloudy, or rainy) days the chart shows so far, and say which kind of day we have had the most of.

Prior knowledge

- None needed beyond everyday talk. Counting to 10 helps in lesson 5 (it is being learned in mathematics at the same time; count together).
- No reading is needed; the weather chart uses picture cards.

Lessons

Lessons are short (20-25 minutes). Leave a day or two between lessons. From lesson 4 on, the weather chart takes about 2 minutes every day, at the same time each day (for example straight after the register).

Lesson	Title	Main activity
1	Looking closely	Describe leaves, stones and shells by how they look

Lesson	Title	Main activity
2	Feeling and listening	Feely bag and a listening walk
3	Smelling, and the tasting rule	Smell pots; why we never taste unknown things
4	What is the weather today?	Look outside and start the class weather chart
5	What has the weather been like?	Count the chart so far; end-of-unit check

Materials (whole class unless noted)

- A "nature tray" for each table: a few leaves of different shapes and colours, smooth and rough stones (none smaller than a ping-pong ball, so nothing can be swallowed), and a few clean shells of a similar size.
- Simple hand lenses (one per pair if possible).
- A cloth bag or box with a hand hole ("feely bag") and objects with clearly different textures: a pine cone, a smooth stone, a sponge, a feather, a wooden block, a piece of fabric.
- Three to five "smell pots": small lidded pots with holes in the lid, each holding something the school has approved (for example lemon peel, an orange slice, a mint leaf, a cinnamon stick, coffee grounds). Nothing sprayed or chemical.
- A large wall chart: one row per school day, with space for a picture card. Picture cards for sunny, cloudy, rainy, windy, snowy (if it snows where you live), foggy, and "warm" / "cool" cards. Lots of copies of each.
- A ribbon or paper streamer on a stick, or a windsock, to see the wind.
- Lesson 1: a large sheet and a marker for the class "describing words" list.
- Lesson 3: picture cards of what is in each smell pot (for matching); a picture of a tongue or a mouth; four tasting-rule cards (an apple on a plate, a berry on a bush, a mushroom on the grass, a bottle with no label).
- Lesson 4: three photos of different weather for the closing check (for example a sunny beach, a rainy street, a windy day with leaves blowing).
- Lesson 5: interlocking cubes in two or three colours; small base cards with the weather picture symbols (sun, cloud, raindrop) to stand each tower on; a five-day practice chart on a large sheet (3 sunny, 1 cloudy, 1 rainy, mixed order, drawn with the picture symbols); check cards (an eye, an ear, a hand, a nose; a rainy-day photo; the four tasting-rule cards).

Assessment

- Lessons 1-3: the teacher notes each child's describing words and "I saw / I felt / I heard / I smelled" sentences during table work (observe; no writing needed).
- Lesson 4 on: children take turns choosing the weather card; note who can explain their choice ("I chose cloudy because I can't see the sun").
- Lesson 5: a 5-question picture/talk check with an answer guide. Plan an extra small-group or one-to-one slot in the week to finish per-child checks; 20-25 minutes is not enough for the whole class.

⚠ Safety (read before lesson 1)

- Check the school's allergy list before lessons 1 and 3 (plants, nuts, shellfish, citrus, spices). Leave out anything a child in the class reacts to.
- Shells and stones: wash before use; check for sharp edges. Nothing small enough to swallow.

- Leaves: use only leaves the school knows are safe to handle. Wash hands after handling natural objects.
- Smell pots: children waft the smell towards their nose with a hand; they do not put their nose in the pot, and nothing comes out of the pot.
- No tasting in this unit. Lesson 3 teaches the tasting rule instead.
- Outside: stay in a supervised area; never look at the Sun, even quickly.

Access and taking part

- Every activity can be done with more than one sense: a child who cannot see well can describe by touch and sound; a child who cannot hear well can describe by looking and touch. Describing words can be spoken, signed, or chosen from picture cards.
- Feely bag, smell pots and closing eyes are all opt-in. A child can watch, use a picture choice, or describe an object that is in front of them.
- Children who find a busy listening walk hard can listen from a quiet spot or wear ear defenders and report what they saw instead.

Sources

- Next Generation Science Standards, kindergarten "Weather and Climate" topic page, K-ESS2-1: "Use and share observations of local weather conditions to describe patterns over time." The page's clarification statement gives sunny, cloudy, rainy and warm as examples of describing the weather, counting sunny, windy and rainy days in a month as examples of counting, and "usually cooler in the morning than in the afternoon" as an example of a pattern. Its assessment boundary limits counting to whole numbers and relative words like warmer/cooler. It also defines weather as "the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time." https://www.nextgenscience.org/topic-arrangement/kweather-and-climate
- Wikipedia, "Sense" (introduction): five senses (sight, smell, touch, taste and hearing) were traditionally named in some cultures, but many more are now recognised. https://en.wikipedia.org/wiki/Sense
- Wikipedia, "Weather" (introduction): weather is day-to-day conditions; climate is the average over longer periods. https://en.wikipedia.org/wiki/Weather

Known gaps

- The order of lessons and the choice of objects are mine, not from a source.
- "Five senses" is a simplification; the unit says "senses" and names the ones children use, and lesson 3's teacher note says there are more.
- Weather words depend on where you live. Add local words (for example drizzle, frost, monsoon, haze) and leave out snow if it never snows.
- One week of chart data shows very little. The pattern talk in lesson 5 is a start; the real pattern-spotting happens in term 3, after months of data.
- Peer check: Gemini 4 Argon did a bounded text, timing and answer-key check at d18fb8c (not an educator, safety or accessibility review). Its notes (missing materials; symbol labels and low-vision routes for the cube towers, photos and charts) were fixed in the follow-up commit e8f0b52 and e1d9472 (see PEERCHECKS.md), which Argon also diff-checked the same day.

Lesson 1: Looking closely

Goal: Children describe a leaf, stone or shell using at least two words about how it looks, and say "I saw...".

Length: about 20 minutes.

Materials

- A nature tray per table (leaves, stones, shells; see the unit materials).
- Hand lenses, one per pair if possible.
- A large sheet of paper for a class "describing words" list (the teacher writes; children draw a small picture next to each word if they like).

Steps

✎ Opening (5 min)

Hold up one leaf. "I am going to be a scientist. Scientists notice things very carefully." Model: "I see that it is green. I see that it has a pointy end. I see little lines on it." Ask: "What do you notice?" Take three or four answers and write the describing words on the class list (green, pointy, lines, big, small, shiny...).

✎ Main activity: notice and describe (10 min)

1. Each pair chooses one object from their tray.
2. They look at it with their eyes, then with the hand lens.
3. Each child tells their partner two things they notice, starting "I saw...".
4. Walk round and ask: "What colour is it? Is it bigger or smaller than your hand? What shape is it? What did you see with the lens that you didn't see before?"
5. Note each child's describing words (see assessment).

✓ Discussion questions (3 min)

- "Did the hand lens help? What did it show you?" (Answer guide: accept anything they actually saw, such as tiny lines on a leaf, sparkly bits in a stone, rings on a shell.)
- "Were all the leaves the same?" (Answer guide: no; they are different colours, shapes and sizes. Praise any child who compares two objects.)

✓ Closing check (2 min)

Hold up a stone. "Tell me one thing you see." Then a shell, then a leaf. Children answer together or show a thumbs-up when they have a word. (Answer guide: any true describing word: colour, size, shape, shiny/dull, spotty, stripy.)

Vocabulary

notice, describe, colour, shape, size, hand lens, scientist

Differentiation

- Support: offer a choice ("Is it big or small? Is it green or brown?").
- Stretch: describe the object so a partner can guess which one it is without seeing it.

⚠ Safety

- Check allergies before handing out leaves (see unit safety notes).
- Hand lenses are for looking at objects; never look at the Sun through one.
- Wash hands after the lesson.

Access

- A child who cannot see well can describe by touch; words can be spoken, signed or chosen from picture cards.

Teacher notes

- Timing: 5 + 10 + 3 + 2 = 20 minutes.
- Children may want to touch too; that is fine, and lesson 2 is about touch. Today, gently steer the words towards how things look.
- Keep the describing-words list on the wall; it grows over the unit.

Lesson 2: Feeling and listening

Goal: Children describe an object by how it feels, notice sounds around them, and say "I felt..." and "I heard...".

Length: about 25 minutes.

Materials

- The feely bag with 5-6 objects of different textures (pine cone, smooth stone, sponge, feather, wooden block, fabric).
- The nature trays from lesson 1.
- The class describing-words list.

Steps

✎ Opening (3 min)

"Last time we used our eyes. Today we use our hands and our ears." Show the class list and read two words from lesson 1 together.

✎ Main activity 1: the feely bag (10 min)

1. Sit in a circle. A child who wants a turn puts a hand in the bag (no looking) and feels one object.
2. They say one word about how it feels: rough, smooth, soft, hard, spiky, bumpy, squashy. The teacher adds new words to the class list.
3. Then they guess what it is and pull it out to check.
4. Give about six turns; others can feel objects from the nature trays and pass them round, saying "I felt..." to a neighbour.

✎ Main activity 2: listening walk (8 min)

1. Walk quietly around the classroom, the corridor or a safe outside area.
2. Stop three times. Everyone stands still and listens for about 20 seconds. Children who want to can close their eyes; others look at the floor.
3. After each stop, whisper to a partner one thing you heard.

✓ Discussion questions (2 min)

- "What did you hear on our walk?" (Answer guide: accept real sounds, such as footsteps, birds, a door, cars, wind, someone talking.)

- "Which did you use to find out the pine cone was spiky, your eyes or your hands?" (Answer guide: hands, by touch; some may say eyes too, since it looks spiky. Both are fine.)

✓ Closing check (2 min)

The teacher names a sense and children point to the body part they use: "Seeing" (eyes), "Hearing" (ears), "Touching" (hands or fingers; any skin is also right).

Vocabulary

feel, touch, rough, smooth, soft, hard, hear, listen, sound

Differentiation

- Support: offer two textures to compare side by side ("Which one is soft?").
- Stretch: sort the feely objects into soft and hard, or rough and smooth.

⚠ Safety

- Check the feely-bag objects for sharp edges and anything small enough to swallow.
- Listening walk: stay together in a supervised area.

Access

- The feely bag is opt-in; a child can choose an object they can see and describe how it feels.
- Closing eyes is opt-in.
- A child who cannot hear well can report what they saw or felt on the walk (for example the floor shaking from footsteps, a door moving).

Teacher notes

- Timing: 3 + 10 + 8 + 2 + 2 = 25 minutes.

Lesson 3: Smelling, and the tasting rule

Goal: Children describe smells and say "I smelled...", and know the class rule: we only taste food a grown-up has given us to eat.

Length: about 20 minutes.

Materials

- 3-5 smell pots (school-approved contents; see the unit materials and safety notes). Number the pots; keep a list of what is in each.
- Picture cards of what is in each pot (lemon, orange, mint, cinnamon, coffee), for matching.
- A picture of a tongue or a mouth, and picture cards of: an apple on a plate, a berry on a bush, a mushroom on the grass, a bottle with no label.

Steps

✎ Opening (3 min)

"We have used our eyes, hands and ears. What else can tell us about the world?" Point to your nose. "Our noses!" Show how to smell safely: hold the pot a little away and wave the air towards your nose with your other hand. Everyone practises the "waft" with an empty hand.

✎ Main activity: smell pots (8 min)

1. Pass one pot round the circle at a time. Children who want to waft and smell; anyone can pass.
2. Ask: "Do you like this smell? Is it strong or gentle? What does it remind you of?" Collect words (sweet, strong, fresh, like a cake, like my grandma's kitchen).
3. After each pot, children guess which picture card matches. Open the pot and show what is inside.

✎ Main activity: the tasting rule (5 min)

1. "We have one more sense in our mouths: tasting. But tasting is special, because some things can make us very ill."
2. Show the four picture cards one at a time. For each, ask: "Is it safe to taste?"
3. Teach the rule and say it together: **"We only taste food a grown-up has given us to eat."**

✓ Discussion question (2 min)

- "You find a berry in the park. It looks yummy. What do you do?" (Answer guide: don't taste it; show a grown-up. Praise any version of the rule.)

✓ Closing check (2 min)

Point to body parts and ask: "What does this sense do?" Eyes (see), ears (hear), hands (touch, feel), nose (smell), mouth/tongue (taste, only food a grown-up gives us).

Answer guide: the four tasting cards

- Apple on a plate: a grown-up gave it to us to eat, so yes.
- Berry on a bush: no; ask a grown-up first.
- Mushroom on the grass: no; never taste it. Show a grown-up.
- Bottle with no label: no; never taste or drink it. Tell a grown-up.

Vocabulary

smell, nose, waft, strong, gentle, taste, tongue, safe

Differentiation

- Support: offer two words to choose from ("Is it strong or gentle?").
- Stretch: match each smell pot to its picture card without help.

⚠ Safety

- Check allergies (citrus, spices, coffee, plants) before choosing pots.
- Waft only; noses do not go into the pot. Lids stay on; contents stay in.
- No tasting in this lesson.

Access

- Smelling is opt-in. Some children dislike strong smells or have a weak sense of smell; they can match the pictures, look at what is inside, or describe how the pot looks and feels.

Teacher notes

- Timing: 3 + 8 + 5 + 2 + 2 = 20 minutes.
- "Five senses" is a simple way to start. Scientists know there are more, such as sensing balance and knowing where your arms are with your eyes closed. If a child asks, say so.
- Link the tasting rule to your school's food and medicine rules.

Lesson 4: What is the weather today?

Goal: Children use their senses to describe today's weather, and start the class weather chart that will run all year.

Length: about 25 minutes (including going outside).

Materials

- Coats as needed; a ribbon or paper streamer on a stick, or a windsock.
- The class weather chart and picture cards (sunny, cloudy, rainy, windy, snowy, foggy, warm, cool). Use local words too.

Steps

✎ Opening (3 min)

"Weather is what the sky and the air are like outside right now. We can find out the weather with our senses!" Ask: "Which senses could help?" (Answer guide: eyes to see the sky and rain, skin to feel warm or cool and the wind, ears to hear rain or wind.)

✎ Main activity 1: weather detectives outside (10 min)

1. Go outside to a safe spot (or look out of a window if the weather is bad).
2. **Look:** "Is the sky blue or grey? Can you see clouds? Is anything wet?" Remind everyone: never look at the Sun.
3. **Feel:** "Is the air warm or cool on your face and hands? Can you feel wind?"
4. **Wind check:** hold up the streamer. "Is it hanging down, or moving?"
5. **Listen:** "Can you hear rain or wind?"

✎ Main activity 2: start the chart (8 min)

1. Back inside, show the chart and the picture cards. Name each one together.
2. Ask the class: "Which cards show today's weather?" Choose one sky card (sunny, cloudy, rainy, snowy or foggy), add "windy" if the streamer moved, and "warm" or "cool".
3. A child sticks the cards on today's row. Ask them to explain: "I chose cloudy because..."

✓ Closing check (4 min)

Show three photos of different weather (for example a sunny beach, a rainy street, a windy day with leaves blowing). For each: "What is the weather? How do you know?" (Answer guide: sunny: bright, blue sky, shadows; rainy: wet, umbrellas, puddles; windy: leaves or hair blowing. Accept any sensible clue from the picture.)

Every day from now on (about 2 minutes)

At the same time each day, one or two children check the weather (window or door is fine) and add cards to the chart, saying why. Keep the chart going for the whole year; term 3 science uses it.

Vocabulary

weather, sunny, cloudy, rainy, windy, warm, cool, sky, chart

Differentiation

- Support: offer two cards to choose from.
- Stretch: "Is it the same as yesterday? What changed?"

⚠ Safety

- Never look at the Sun, even quickly or through sunglasses.
- Dress for the weather; stay in a supervised area.

Access

- Children who cannot go outside can use the window, a door, or a photo taken that morning.
- Choosing a card, pointing or signing all count as describing.
- The weather picture cards carry symbols (sun, cloud, raindrop), not only colours. For the closing-check photos, a child with low vision can hear each photo described aloud ("leaves are flying, a girl's hair is blowing") or handle real clues (a damp cloth, sunglasses, a streamer) and say which weather it shows.

Teacher notes

- Timing: 3 + 10 + 8 + 4 = 25 minutes.
- Some days are two things at once (sunny and cloudy, or rain then sun). That is fine: let children add two cards, or choose what most of the sky looks like right now.
- Weather means right now in this place. If a child talks about weather on holiday, that is a good chance to say weather is different in different places.

Lesson 5: What has the weather been like?

Goal: Children count the kinds of weather on the class chart so far, say which kind we have had most, and show what they learned about the senses.

Length: about 25 minutes. Teach it after the chart has run for at least four or five school days.

Materials

- The class weather chart.
- Interlocking cubes in two or three colours (for example yellow for sunny, white for cloudy, blue for rainy), and a base card for each tower showing the weather symbol (sun, cloud, raindrop), so the towers can be told apart without colour.
- A practice chart drawn on a large sheet (see the closing check).
- Picture cards for the check: an eye, an ear, a hand, a nose; a rainy-day photo; the four tasting cards from lesson 3.

Steps

✎ Opening (3 min)

Do today's weather cards together, as every day. "Our chart is getting long! What has the weather been like?"

✎ Main activity: count our chart (10 min)

1. Point to each day in turn. For each sunny day, a child adds a yellow cube to a tower; cloudy, a white cube; rainy, a blue cube (use the kinds of weather you have actually had). Stand each tower on its symbol card and say the weather name aloud each time a cube goes on.
2. Count each tower together, touching each cube once.
3. Stand the towers side by side. "Which tower is tallest? So which kind of day have we had most?"
4. "Do you think next week will be the same?" Accept any guess; say we will keep watching and find out.

✓ Discussion questions (4 min)

- "Is it usually cooler in the morning or in the afternoon?" (Answer guide: usually cooler in the morning. Tell the class you will feel the air at the start of the day and after lunch for a few days and add a "warm" or "cool" card each time, so they can see for themselves. Some days it will not be true, for example if it rains in the afternoon.)
- "Why do scientists write things down every day?" (Answer guide: so they remember, and so they can see patterns, such as which weather happens most.)

✓ Closing check (8 min)

Five questions. Do them in small groups or one to one where possible; plan an extra slot in the week to finish (see the unit assessment notes).

1. Show a leaf. "Tell me two things you notice about it."
2. Show the eye, ear, hand and nose cards. "Which one do you use to smell?" Then "...to hear?"
3. Show the berry-on-a-bush card. "Can you taste it? What is our rule?"
4. Show the rainy-day photo. "What is the weather? How do you know?"
5. Show the practice chart: five days, with 3 sunny, 1 cloudy and 1 rainy (mixed order). "How many sunny days? Which weather did we have most?"

Answer guide: closing check

1. Any two true describing words (colour, size, shape, rough/smooth, shiny, spotty...). 1 mark.
2. Nose for smell; ear for hear. 1 mark for both.
3. No; we only taste food a grown-up has given us to eat (any version of the rule). 1 mark.
4. Rainy; any sensible clue, such as wet ground, puddles, umbrellas, drops. 1 mark.
5. 3 sunny days; sunny is the most. 1 mark.

This is a check of understanding (5 marks), not a test to pass. Note who needs more practice and revisit during the daily chart time.

Vocabulary

count, most, fewest, pattern, chart, usually

Differentiation

- Support: count the towers with the teacher's hand guiding; compare just two towers.
- Stretch: "How many more sunny days than rainy days?"

⚠ Safety

- None beyond the usual classroom rules.

Access

- Answers can be spoken, signed, pointed to or chosen from pictures.
- Cubes can be counted by touch. Each tower stands on a symbol card (sun, cloud, raindrop), so children with colour-vision differences do not have to rely on cube colour; name the tower aloud when pointing to it.
- For a child with low vision, describe the rainy-day photo aloud ("people are holding umbrellas, the street is shiny") or hand over real clues (a damp cloth, a small umbrella), then ask "What is the weather? How do you know?" Read the practice chart aloud day by day and let the child count the cubes by touch instead.

Teacher notes

- Timing: 3 + 10 + 4 + 8 = 25 minutes.
- With only a week or two of data, the "most" kind of weather tells us about those days, not about the whole year. Keep the chart going: term 3 science looks back at months of data.
- The cube towers are an early picture graph; mathematics this term counts and compares groups too, so the two subjects support each other.