Teacher Notes: Winds Around the World

Addendum to Heat Moves · ~20 min · prints in black and white

Big idea

The Equator gets the most sun. Warm air rises there and cooler air moves in to replace it, the same convection loop as heat moving in water. Earth spinning bends that moving air, so we get steady wind belts: **Trade Winds** blowing toward the west near the Equator, **Westerlies** blowing toward the east across the U.S. and Europe, and **Polar Easterlies** near the poles. Those winds drag the ocean surface along, and that is what turns the currents from yesterday.

Lab tie-in (optional, 2 min)

Put a few pepper flakes on a shallow tray of water and blow across it through a straw. The flakes move the way the "wind" blows, the same way the Trade Winds push the water near the Equator toward the west.

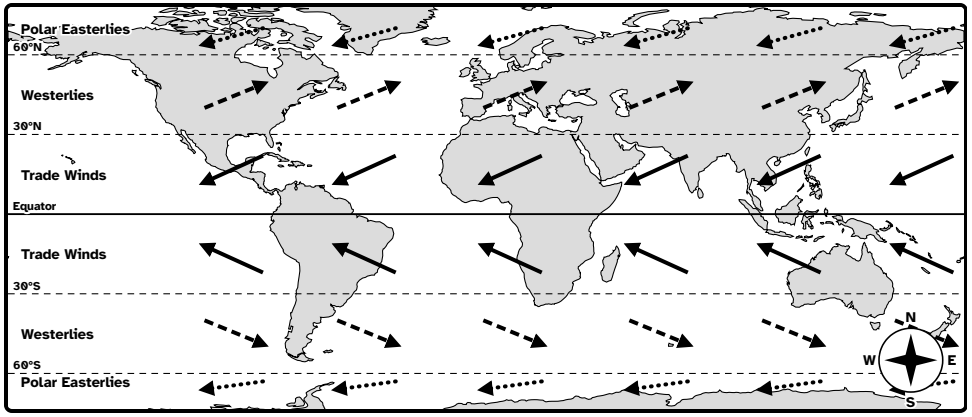
Which version

- **A:** dashed arrows to trace, 2 winds only, word bank for the boxes, circle answers.
- **B:** draw the arrows, all 3 winds, write labels and answers.
- **Projector:** mrsajdak.com/winds/ walks through the heating, the convection loops and each wind belt one step at a time.

Supports

- Model one arrow of each wind under the doc camera, then let them finish.
- Point to the compass every time you say "east" or "west." Many students mix these up on a map.
- Gesture it: sweep your arm right to left for the Trade Winds, left to right for the Westerlies.
- For students who struggle with writing, let them copy just the first letter (T or W) into each box.

Answer key



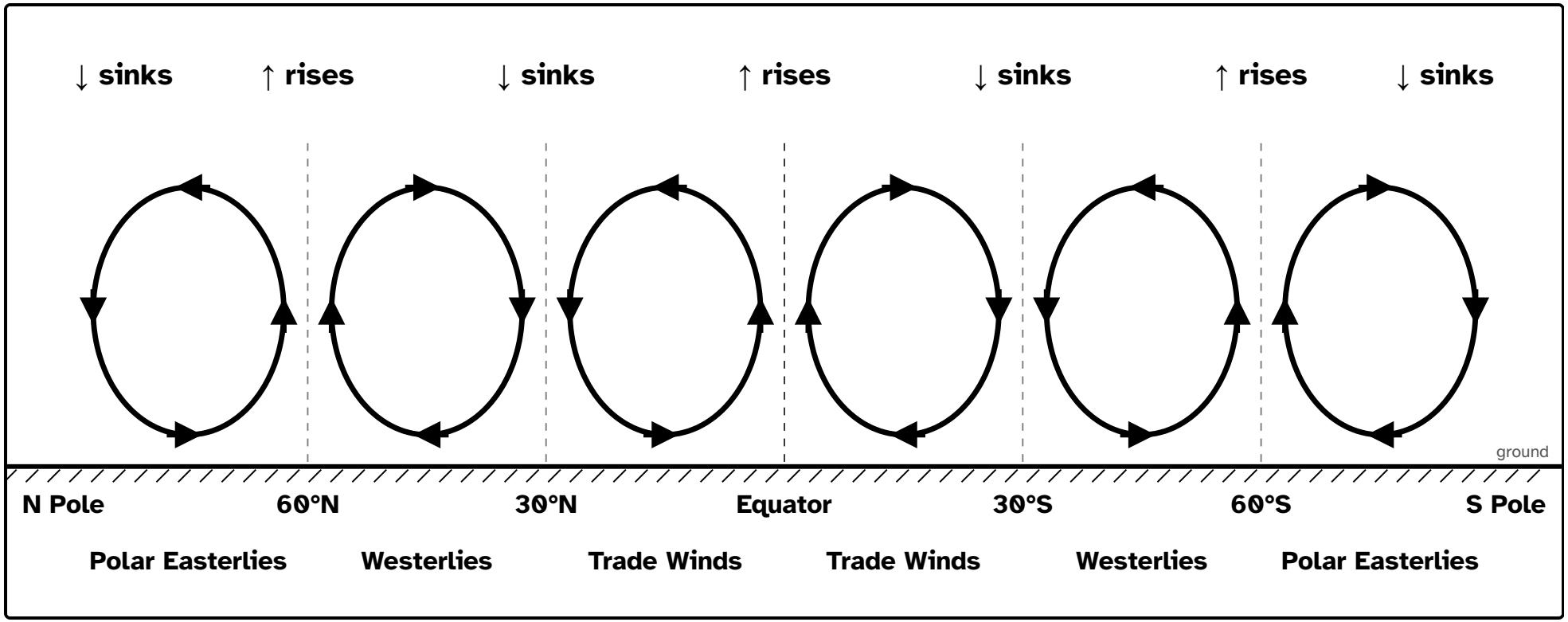
Trade Winds Westerlies Polar Easterlies

- Trade Winds: toward the **west** (and toward the Equator).
- Westerlies: toward the **east**. In the U.S., the wind blows toward the east.
- Polar Easterlies: toward the **west**.
- The sun heats the **Equator** the most.
- How do winds change currents? *The wind pushes the water on top of the ocean, so the water moves the same way as the wind.*

Teacher Notes: Air Moves in Loops (back side)

Print front and back, flip on the short edge

Answer key



What to look for

- **Rises:** Equator, 60°N, 60°S. **Sinks:** 30°N, 30°S, both poles.
- Neighbouring loops turn opposite ways, like gears: at 30° both sides go **down**, at 60° both sides go **up**.
- The bottom of each loop is the wind at the ground. Trade Winds move toward the Equator, Westerlies toward the poles, Polar Easterlies away from the poles. On the map side, Earth's spin bends those into west, east and west.
- A, question 5: rises · sinks · near the ground. B, question 4: Equator, 60°N, 60°S · 30°N and 30°S (or the poles) · the bottom part, along the ground.

Supports

- Version A has one loop done (the northern Trade Winds). Trace its arrows with a finger together, then do the southern Trade Winds loop together. It mirrors the example.
- Watch screen 4 of the projector visual (mrsajdak.com/winds/), "Air moves in big loops," while students work. The moving air shows the direction.
- Gesture it: hand up at the Equator, over, down at 30°, back along the desk.
- For students who struggle with writing, accept R or S in the top boxes and T, W or P under the loops.