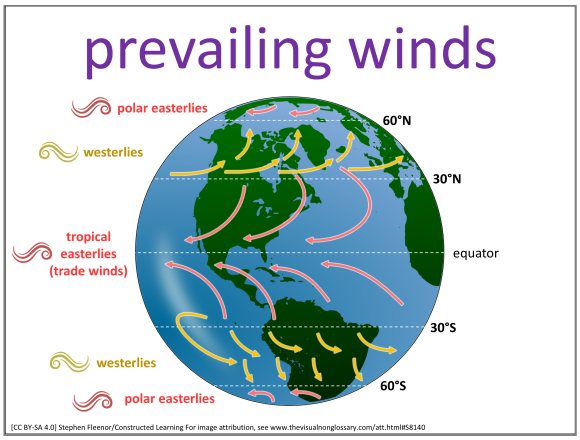
Teacher Guide for the Lesson on **prevailing winds**



Standard:
8.10(B)

Content Objective:
We can identify and explain how **prevailing winds** show global patterns of atmospheric movement and influence local weather.

Language Objective: Answer the following question in complete sentences using the sentence stem and the key vocabulary of the lesson:

> How do you think **prevailing winds** are influenced by **solar energy**?
>
> *I think **solar energy** influences **prevailing winds** by…*

Other key vocabularies: air masses, solar energy

By studying this visual, students might:

Notice	Wonder
• The Earth has bands of prevailing winds at different latitudes.	• Why do winds blow in different directions at different latitudes?
• Some wind patterns move from east to west, while others move from west to east.	• How do prevailing winds affect the climate in different regions?
• The equator has winds that blow in a different direction than those near the poles.	• What causes the curve in the wind paths?
• Wind names often match their location, such as “trade winds” or “westerlies.”	• Do prevailing winds change during different seasons?

• The direction of the winds appears to curve rather than move in a straight line.	• How do prevailing winds interact with storms or hurricanes?

EXTENDING THE DISCUSSION

- After randomly calling on students, if there is anything from this list that was not mentioned, then ask the class, "Did anyone notice...?"
- After students have shared what they notice, ask the class, "Did anyone wonder...?" using the suggestions above or anything else you might think is interesting or relevant to the lesson.

Structured Conversation Prompts

OBSERVATIONAL	RELATIONAL	INFERENTIAL
How are the different **prevailing winds** distributed across the Earth? The distribution of **prevailing winds** across Earth is...	How are **prevailing winds** related to **air masses**? **Prevailing winds** are related to **air masses** because...	How do you think **prevailing winds** are influenced by **solar energy** ? I think **solar energy** influences **prevailing winds** by...

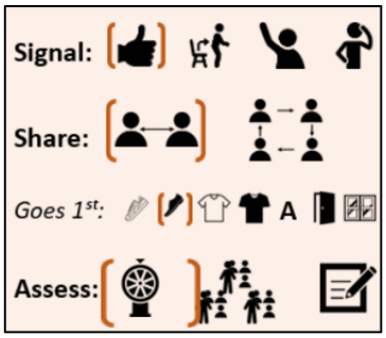
Example Student Responses to the Observational Question

Low-Level	High-Level
*The distribution of **prevailing winds** across Earth is in different places and directions.*	*The distribution of **prevailing winds** across Earth is in bands at different latitudes, like the trade winds, westerlies, and polar easterlies, and each band blows in a certain direction.*

RESPONDING TO RESPONSES

Emphasize and celebrate each student's use of the key vocabulary to support a culture of "no wrong answers."

STRUCTURING STUDENT CONVERSATIONS



Have students list observations from the visual as a warm-up, then use the Q-SSS-A process to guide small-group conversations. In the slide decks, brackets can be moved to prepare the structured conversation. In the example to the right, students will be instructed: Q-SSS-A.

- To put a thumb up, then lower their hand when they are ready to answer the question
- To share with their elbow/shoulder partner, and that the student with the darkest shoe will share first
- That they will be randomly called on after the conversation

Here is an example of structuring a conversation with Q-SSS-A.

Note: the inferential question is the same as the language objective. It is recommended that students answer the inferential question in a small-group discussion before answering it individually as the closure or exit ticket of the lesson.

Structured Reading

READING PURPOSE	PAT LIST	POST-READING DISCUSSION
The purpose for reading is to learn how differences in temperature and pressure create patterns of ***prevailing winds****around the world.*	• Where prevailing winds are located around the world • How temperature differences occur between the equator and the poles • How pressure differences are created in the atmosphere • How prevailing winds move air masses to different regions • How Earth's rotation changes the path of moving air	What role do temperature and pressure differences play in the patterns of **prevailing winds** you read about? *Temperature and pressure differences play a role in the patterns of* ***prevailing winds*** *by…*

STRUCTURING THE READING

Communicate the purpose of reading to the students and instruct them to make a note every time they see something on the PAT ("Pay Attention To") list. How you have students note items on the PAT list is up to you. This could include:

- Putting an asterisk in the margin
- Underlining text that supports the PAT list
- Putting a comment in the margin

Follow the reading with the post-reading discussion. Structure this discussion using the Q-SSS-A process just like the structured conversations in this lesson.

Note: you might find the relational question is better discussed before or after the reading. This depends on whether the relational question is directly related to the reading or might make connections across units.

DIFFERENTIATING THE READING

You will notice that three different reading passages are provided with this lesson. Look at the shapes in the top-left of each passage to determine the grade level.

BELOW GRADE LEVEL	ON GRADE LEVEL	ABOVE GRADE LEVEL
		
Triangle is bottom-left	*Square is bottom-left*	*Circle is bottom-left*

In a class with students at diverse reading level proficiencies, you can give the appropriate reading passage to different students, while having all students follow the same PAT list and post-reading discussion.