

**Virginia Essentialized Standards of Learning (VESOL)
Instruction Resource
Science Sample Activities**

Grade 5 Earth/Space Systems and Earth Resources

VESOL Code	VESOL Reporting Category	VESOL Text	Complexity Continuum
S-5 4	Earth/Space Systems and Earth Resources	Recognize different types of weather conditions and their characteristics.	Using simple pictures, diagrams, or representations, concepts could range from: <ul style="list-style-type: none"> • recognizing simple weather conditions (rainy, cloudy, sunny, foggy, thunder and lightning) <i>to</i> • connecting physical conditions to weather conditions (e.g., wet to rain, dry or hot to sunny, lightning to thunderstorm) <i>to</i> • identifying more complex storm conditions (e.g., hurricane, tornado, blizzard) and their physical conditions.

Instructional Example

Objective: Identify different types of weather conditions and their characteristics

Vocabulary:

rainy, cloudy, sunny, snowy, foggy
thunder, lightning; wet, dry, wind, snowflakes
hurricane, tornado, blizzard

Communication:

- [36 Location Universal Core Board](#)
- Core Vocabulary and Science: Core words that can be modeled and targeted during lessons:
 - Up/down

- Put
- In
- More
- Turn
- All/Some
- Look

Materials: *sample activities range across a continuum of complexity and may include materials such as:* Naturally occurring daily conditions, 3D weather objects/picture symbols, weather condition photographs, line drawings, videos

[Weather in a Jar](#) step-by-step instructions

Jars/cups, shaving cream, food coloring (rain), baking soda (snow), ice, salt (Frost), dish soap, vinegar, washer, two liter bottles, (tornado), white paper, flashlight (rainbow), baby oil, glitter, Alka-Seltzer, white paint

Severe weather videos: [Tornado video 2](#) , [Blizzard video](#)

Procedures for Instruction:

These instructional activities can be used at various points on the complexity continuum, depending upon student ability. Many possibilities exist for lesson creation between the examples presented here. It is important to start instruction where the student is currently functioning and implement the appropriate instructional strategy with them. Once data indicate that the student is ready for the next level of instruction, proceed to it after reviewing the level the student has mastered. Let the data be your guide.

Sample Activity 1—Concept Matching- sunny, rainy, snowy

Use [systematic Instruction](#) , [least-to most prompts](#) and [discrete trial instruction](#) to teach each weather concept in isolation, then in randomized trials so that student successfully selects the named weather condition 80% of trials presented

Concept Matching:

- Present pictures, videos, and/or naturally occurring conditions (viewed from the classroom window)
- Student selects a 3D/object picture symbol to match the weather condition. When errors occur
 - Increase instruction/practice opportunities for consecutive errors on weather concepts missed
 - Reduce field of choices to field of two and use reinforcement
 - Use errorless teaching to ensure correct student response and rebuild field of choices, maintaining 80% accuracy

Sample Activity 2 - Concept Matching-windy, foggy, cloudy

Same as above, but add pictures, videos and/or naturally occurring conditions for windy, foggy, cloudy

Sample Activity 3 - Concept Branching

Same as above, but branch weather names to include features, such as rainy is wet, sunny is hot, snowy is cold so that student can name weather conditions and its features with 80% accuracy. If less than 80%, follow re-teach procedures above.

Sample Activity 4 – Extending Concepts

Provide explicit instruction through visual representation of each weather condition (see video resources listed with materials). Demonstrate and prompt student completion of classroom experiments to create simulated weather conditions in a jar/bottle.

Sample: *Tornado weather in a jar:*

- Fill a 2-liter bottle about 2/3 full of water
- Add 3-4 drops of dish detergent and 3-4 drops of the food coloring
- Place the washer on top of the bottle opening
- Place the second 2 liter bottle on top of the washer so that the two bottlenecks face each other
- Wrap duct tape around the bottlenecks to hold them together
- Turn the bottles over so the water slowly drips down
- Quickly rotate the bottles in a horizontal circle so that a cyclone appears
- Use explicit instruction to teach tornadoes happen **when wind is very strong and goes in circles**
- Students select name/picture symbol for each presented weather condition (experiment or video) with 80% accuracy. If less than 80%, use the re-teach procedure outlined above.

Additional Resources:

Evidence-Based Instructional Practices:

[Evidence-Based Practices for Students with Significant Cognitive Disabilities](#)

[Discrete Trial Teaching AFIRM module](#)

[Discrete Trial Teaching Implementation Checklist](#)

[Least-to-Most Prompting](#)

[Task Analysis Step-by-Step Guide](#)

Weather Instruction Resources:

[National Geographic Picture Archive](#)

[Mystery Science](#)

[Types of Weather video](#)

[National Severe Storms Picture Library](#) and [Resources for Students](#)

[Thunderstorm Interactives](#)

[Scholastic Severe Weather Words to Know](#) and [Weather Maker Games](#)

[Beacon Learning Center Weather Lesson Plan Database](#)

[TarHeel Reader Wind story](#)