

*** WEATHER AND CLIMATE SCIENCE ***

Curriculum for youth in afterschool programs, 4-H clubs, and other informal settings – grades 3-12

Level 1, for Grades 3-5: Introduces basic weather terms and concepts and helps students understand the difference between weather and climate. Activity titles:

- | | |
|---|--|
| <ul style="list-style-type: none"> • Comparing Climates <ul style="list-style-type: none"> • Country of Colors <ul style="list-style-type: none"> • Defining Weather Words <ul style="list-style-type: none"> • Earth's Surfaces <ul style="list-style-type: none"> • H₂O <ul style="list-style-type: none"> • Invisible Air <ul style="list-style-type: none"> • Read about Wild Weather | <ul style="list-style-type: none"> • 'Tis the Season <ul style="list-style-type: none"> • Watch the Wind <ul style="list-style-type: none"> • Weather Affects Plans <ul style="list-style-type: none"> • Weather Alerts <ul style="list-style-type: none"> • Weather or Climate <ul style="list-style-type: none"> • Where Is the Heat? |
|---|--|



Level 2, for Grades 6-8: Introduces youth to more complex weather topics, understanding climate, and making and using weather instruments. Activity titles:

- | | |
|---|--|
| <ul style="list-style-type: none"> • Air Pressure <ul style="list-style-type: none"> • Carbon Footprints • Cloud Formation <ul style="list-style-type: none"> • Cloud Types • Cold Fronts <ul style="list-style-type: none"> • Earth's Rotation <ul style="list-style-type: none"> • Global Winds <ul style="list-style-type: none"> • The Greenhouse Effect | <ul style="list-style-type: none"> • Humidity <ul style="list-style-type: none"> • Hurricanes <ul style="list-style-type: none"> • Making Weather Instruments <ul style="list-style-type: none"> • Mini-Tornado <ul style="list-style-type: none"> • Out of the Dust <ul style="list-style-type: none"> • Seasons <ul style="list-style-type: none"> • Using Weather Instruments |
|---|--|

Level 3, for Grades 9-12: More complex topics are explored. Climate and Weather topics are presented in separate sections. Activity titles:

Weather

- Air Masses and Front
- Isaac's Storm
 - Monitoring Weather
 - Pressure Systems
 - Weather Station Model
 - Troposphere
 - Windchill / Heat Index

Climate

- Climate and Climographs
 - Drought Monitoring
 - Energy in Atmosphere
 - Energy Balance
 - Climate Change Imp.
 - Investigating Climate
 - Sun-Earth Relationship
 - Sunspot Cycle
 - Volcanoes

Facilitator's Guides

Contents:

- Note to the adult facilitator & overview of curriculum
- Information about learning goals and life skills
- Explanation of the *Experiential Learning Model*
- Discussion of youth development stages
- Youth activity support, including:
 - The Big Picture – background information; significance of activity
 - Facilitating the Activity – suggestions for working with youth
 - Essential Questions – answers to essential questions
 - Next Generation Science Standards (NGSS)
 - Success Indicator – essential ideas youth should learn

Availability, www.edustore.purdue.edu

The youth manuals and facilitator's guides are available online. Level 1 (grades 3-5) is available in print as well as online which allows: connection to digital natives in middle and high school; incorporation of additional resources; and links to educational websites (*.edu and *.gov).

The curriculum is available for download by youth and adults online at Purdue Extension's *The Education Store*, www.edustore.purdue.edu. Enter "Weather and Climate Science" in the *Store Search* box

