### 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:

- Comparing Climates
- Country of Colors
- Defining Weather Words
- Earth’s Surfaces
- H2O
- Invisible Air
- Read about Wild Weather

- ‘Tis the Season
- Watch the Wind
- Weather Affects Plans
- Weather Alerts
- Weather or Climate
- 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:

- Air Pressure
- Carbon Footprints
- Cloud Formation
- Cloud Types
- Cold Fronts
- Earth’s Rotation
- Global Winds
- The Greenhouse Effect

- Humidity
- Hurricanes
- Making Weather Instruments
- Mini-Tornado
- Out of the Dust
- Seasons
- 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:

**Climate**

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

**Weather**

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

**Facilitator’s Guides**

- 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.
Example Pages:

**Level 1**

Comparing Climates

Weather Affects Plans

**Level 2**

Making Weather Instruments

Mini-Tornado

**Level 3**

Air Masses and Fronts, Worksheet

Climate and Climographs