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WindEurope's Teacher Toolkit for Primary Schools

The **WindEurope Teacher Toolkit for Primary Schools** helps teachers introduce upper primary school students (11-12 years old) to the **fundamentals of renewable energy** without requiring prior background knowledge from teachers or students.

The four original modules have been reviewed and adapted into **complete Learning Scenarios** by European Schoolnet (EUN) in partnership with WindEurope, within the framework of the Scientix® STEM Alliance initiative.

Using the Scientix® review methodology, the adapted learning scenarios enrich the toolkit with **pedagogical guidance, curriculum mapping, assessment strategies**, and links to European STEM education frameworks.

Access the original toolkit

Explore the 4 Learning Scenarios:

1. Learning About Energy
2. Constructing an Anemometer and Taking Measurements
3. Understanding Wind Turbine Technology
4. Learning About Wind

The **Scientix® review methodology** ensures the Learning Scenarios:

- ✓ Are aligned to different curricula across Europe
- ✓ Address GreenComp sustainability competencies
- ✓ Link to real-world industry applications and career profiles
- ✓ Connect to the challenges of the energy transition

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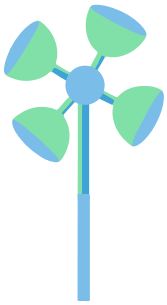
1. Learning About Energy

This learning scenario introduces students to the concept of energy: what it is, how it transforms, where it comes from, and what energy choices mean for our planet. Over four connected lessons, students:

- build a class definition of energy,
- investigate how energy changes form through four hands-on stations,
- classify renewable and non-renewable energy sources through card sorting,
- explore the link between fossil fuels, CO_2, and climate change through real European data,
- take on the roles of engineers, planners, economists, strategists, and ecologists in a collaborative wind farm project.

View this scenario

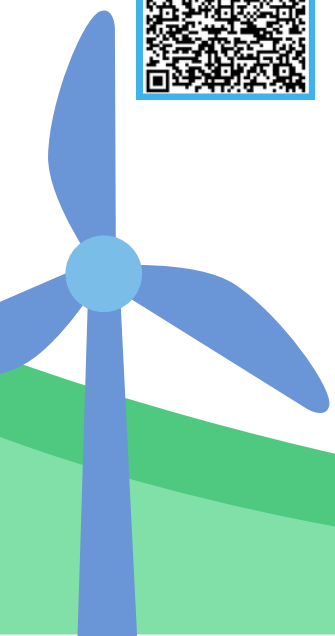
2. Constructing an Anemometer and Taking Measurements

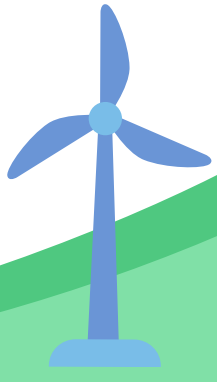


This learning scenario engages students in an authentic engineering investigation into wind energy. Across five lessons, students:

- work through the engineering design process by designing an anemometer,
- build and test the anemometer,
- collect and analyse wind data,
- conduct a controlled experiment on arm length and rotation speed,
- apply mathematical concepts related to circles and Pi to interpret their findings.

View this scenario





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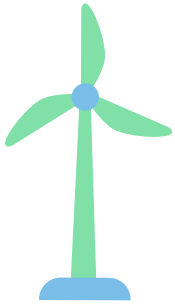


3. Understanding Wind Turbine Technology

This learning scenario engages students in an authentic engineering investigation into wind turbine technology. Across five lessons, students:

- explore how wind turbines generate electricity,
- design and build a model wind turbine,
- test and refine their prototype,
- evaluate its performance through scientific investigation and data analysis,
- connect their learning to real wind turbines, careers in the wind energy sector, and renewable energy.

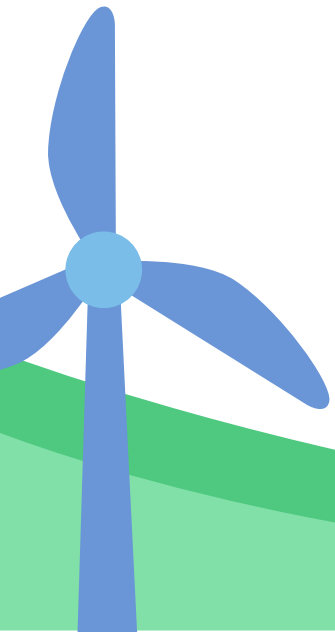
View this scenario

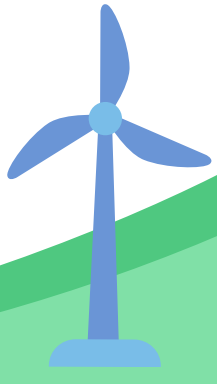
4. Learning About Wind

This learning scenario engages students in an interdisciplinary investigation of wind as a natural phenomenon, a geographical resource, and a driver of technological innovation. Across four lessons, students:

- investigate how wind forms through experiments,
- explore why some places are windier than others and analyse global wind patterns,
- use real wind-energy data and digital mapping tools to compare countries and make evidence-based recommendations about future wind-energy development,
- explore how humans have harnessed wind from ancient sailing to modern wind turbines.

View this scenario





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All four **Learning Scenarios have been mapped against a selection of European national curricula**, linking each lesson to subjects including:

- Natural Science
- Technology
- Mathematics
- Geography
- Social studies
- History
- Language

Additionally, each Learning Scenario addresses a set of criteria from the **STEM School Label** framework, helping you integrate the Learning Scenarios into the overall STEM strategy of your school.

Learn more about the STEM School Label

STEM School Label

Each Learning Scenario addresses a set of competencies based on **GreenComp: The European Sustainability Competence Framework**, ensuring your students are equipped with the skills they need for a sustainable future.

GreenComp Competence areas	Scenario 1	Scenario 2	Scenario 3	Scenario 4
1. Embodying Sustainability Values				
1.1 Valuing sustainability	■	■	■	■
1.2 Supporting fairness	■			
1.3 Promoting nature	■	■	■	■
2. Embracing Complexity in Sustainability				
2.1 Systems thinking	■	■	■	■
2.2 Critical thinking	■	■	■	■
2.3 Problem framing	■	■	■	■
3. Envisioning Sustainable Futures				
3.1 Futures literacy	■	■	■	■
3.2 Adaptability	■	■	■	
3.3 Exploratory thinking	■	■	■	■
4. Acting for Sustainability				
4.1 Political agency	■			
4.2 Collective action	■	■		■
4.3 Individual initiative	■		■	

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