Wind is Energy was developed by The NEED Project with funding from the American Wind Energy Association.
Wind

Question: What evidence is there that the wind is blowing?

Observe the wind. Draw pictures of evidence that the wind is blowing.
Wind

**Question:** What evidence did you find that proved the wind was blowing?

Look back at your evidence that the wind was blowing. Describe how the wind was blowing. Write about what you saw that proves the wind was blowing.

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**Energy Search**

**Question:** How do we use energy at school?

<table>
<thead>
<tr>
<th>Energy is light.</th>
<th>![Light Bulb]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy is sound.</td>
<td>![Drums]</td>
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<tr>
<td>Energy is heat.</td>
<td>![Fire]</td>
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<tr>
<td>Energy is motion and growth.</td>
<td>![Race Car]</td>
</tr>
<tr>
<td>Energy runs machines.</td>
<td>![Laptop]</td>
</tr>
</tbody>
</table>

Energy is light.

Energy is sound.

Energy is heat.

Energy is motion and growth.

Energy runs machines.
Pinwheels

**Question:** What makes the pinwheel spin?

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Wind Can Do Work, Part 1

Guiding Question: How can wind do work?

Question: What will happen when wind blows into the windmill?

I predict ____________________________________________

________________________________________________________________________________

because _________________________________________

________________________________________________________________________________

Draw a picture and use words to explain what happened.

________________________________________________________________________________

________________________________________________________________________________

________________________________________________________________________________
1. Make your windmill.

2. Draw a diagram of the windmill below and label the parts.

Windmill Diagram
Wind Can Do Work, Part 2

Question: How many paper clips can the wind lift to the top of the windmill?

I predict ________________________________

because ________________________________

<table>
<thead>
<tr>
<th>Trial</th>
<th>Number of Paper Clips</th>
<th>Lifted to the top? (Yes or No)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td>2</td>
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<td>10</td>
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</table>
Weightlifter Turbine Diagram
Blade Design Ideas

Draw some ideas you have for what the blades could look like.

My blade design ideas...

My group’s blade design will be...
Date: ________________________________

**Question:** ____________________________________________________________

________________________________________________________________________

________________________________________________________________________

I predict _________________________________________________________________

________________________________________________________________________

because ________________________________________________________________

________________________________________________________________________

Data:
Data and Observations Continued:
Wind Can Do Work Conclusion

How does wind do work? What did you learn in your windmill investigations? How much work did your windmills do? Is the wind a good source of energy to do work? Why or why not?

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Wind Measurement Tools

Draw diagrams of the wind measuring tools you will be using. Label each one and tell what it measures.
Measuring the Wind

**Question:** Will the wind blow the same speed in different locations around the school?

I predict ____________________________________________________________

because ____________________________________________________________

Data and Observations: From what direction is the wind blowing?

______________________________________________________________

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______________________________________________________________
<table>
<thead>
<tr>
<th>Location</th>
<th>Time</th>
<th>Revolutions in 10 Seconds</th>
<th>Speed</th>
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</table>
Wind Reflection

What did you learn about wind and energy? What is the most important thing you learned?

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What are You Wondering About?

After learning something new, scientists often have even more questions to which they want to find answers.

• What questions about wind do you still have?
• How can you find the answers to your questions?

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Kentucky Power – An AEP Company
Kentucky Utilities Company
League of United Latin American Citizens – National Educational Service Centers
Leidos
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Llano Land and Exploration
Louisville Gas and Electric Company
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Mississippi Gulf Coast Community Foundation
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Mojave Unified School District
Montana Energy Education Council
The Mountain Institute
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National Grid
National Hydropower Association
National Ocean Industries Association
National Renewable Energy Laboratory
NC Green Power
New Mexico Oil Corporation
New Mexico Landman’s Association
NextEra Energy Resources
NEXTracker
Nicor Gas
Nisource Charitable Foundation
Noble Energy
Nolin Rural Electric Cooperative
Northern Rivers Family Services
North Carolina Department of Environmental Quality
North Shore Gas
Offshore Technology Conference
Ohio Energy Project
Opterra Energy
Pacific Gas and Electric Company
PECO
Pecos Valley Energy Committee
Peoples Gas
Pepco
Performance Services, Inc.
Petroleum Equipment and Services Association
Phillips 66
PNM
PowerSouth Energy Cooperative
Providence Public Schools
Quarto Publishing Group
Read & Stevens, Inc.
Renewable Energy Alaska Project
Rhode Island Office of Energy Resources
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Salt River Project
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Schlumberger
C.T. Seaver Trust
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Shell
Shell Chemicals
Sigora Solar
Singapore Ministry of Education
Society of Petroleum Engineers
Society of Petroleum Engineers – Middle East, North Africa and South Asia
Solar City
David Sorenson
South Orange County Community College District
Tennessee Department of Economic and Community Development–Energy Division
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University of Tennessee
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