

KidWind Design Challenge Sample 3 Day & 6 Day Unit Plans

Note: OEP recognizes participating schools will be implementing the program in different formats. Some will use it with their energy team or science club. Others may be implementing with an entire class. Our goal is to provide maximum flexibility in implementing the Challenge while at the same time providing adequate support.



Sample 3-Day Unit Plan

| Day | Topic | Resources |
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| 1 | Student Pre-Poll Introduction to Engineering Design Process Activity- Group Brainstorming Icebreaker Introduction to Wind Introduce Design Challenge | Student Pre/Post Poll TeachEngineering.org : Seven step engineering process video & poster Wind 101 How Do Wind Turbines Work? Video |
| 2 | Review Turbine Blade Design Initial Blade Design, Planning & Build Review Electricity terminology <ul style="list-style-type: none"> Ohms, resistor, voltage, power (watts), amps | The Science of Turbine Blade Building Teacher Handout Student Worksheet Electricity Terminology-NEED Intermediate and Secondary Infobooks |
| 3 | Test Initial Design Measurements and calculations, record work Plan Improved Design #2 and #3 <ul style="list-style-type: none"> Redesign Test, measurements and calculations Complete student datasheet Take photos/video | Testing Set-Up & Using a Multimeter Teacher Handout or Video Online KidWind Submission Portal Student Pre/Post Poll |

Sample 6-Day Unit Plan

| Day | Topic | Resources |
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| 1 | Student Pre-Poll Introduction to Engineering Design Process Activity- Group Brainstorming Icebreaker Present Day Inventor/Engineer-William Kamkwamba | Student Pre/Post Poll TeachEngineering.org : Seven step engineering process video & poster Wind Turbine Virtual Tour at One Energy in Findlay, Ohio or live Virtual Field Trip on 11/3/2021 The Boy Who Harnessed the Wind Ted Talk & Resources |
| 2 | Introduction to Wind Introduce Design Challenge Review Turbine Blade Design | Wind 101 How Do Wind Turbines Work? Video The Science of Turbine Blade Building Teacher Handout |

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| 3 | Initial Blade Design, Planning & Build | Student Worksheet |
| 4 | <p>Review Electricity terminology</p> <ul style="list-style-type: none"> • Ohms, resistor, voltage, power (watts), amps • Review how to measure, use of multimeter, calculations <p>Test Initial Design</p> <ul style="list-style-type: none"> • Measurements and calculations • Record work | <p>Testing Set-Up & Using a Multimeter Teacher Handout or Video</p> <p>Electricity Terminology-NEED Intermediate and Secondary Infobooks</p> |
| 5 | <p>Plan Improved Design #2 and #3</p> <ul style="list-style-type: none"> • Redesign • Test, measurements and calculations • Complete student datasheet • Take photos and video for presentation | |
| 6 | <p>Presentation of Class Designs</p> <p>Submission of projects to KidWind Portal</p> <p>Student Post-Poll</p> | <p>Online KidWind Submission Portal</p> <p>Student Pre/Post Poll</p> |