

Activity 1: Energy Detectives

Power Our Playground - Steps 1, 2, 3 and 4

Name: _____

Date: _____

Partner/Group: _____

Class: _____

Learning Goal

I can identify energy transformations, conduct a fair investigation, collect evidence and use my findings to inform a renewable-energy design.

Outcomes: ST3-1WS-S and ST3-8PW-ST

STEP 1 - Watch and Discover

Before watching: What do you think renewable energy means?

Name two renewable-energy sources you already know.

Source 1	Source 2

While watching the video: Record what you learn.

Energy source	What did you learn?	Energy transformation
Solar		
Wind		
Another example		

STEP 2 - Think, Pair, Share

Work with a partner. Identify examples of energy transformations you can see in everyday life or around your school.

Example/device	Starting energy	Energy after transformation
1.		
2.		
3.		

Discuss: Which renewable-energy source could be useful at our school? Why?

Our class discussion idea:

STEP 3 - Wind Turbine Investigation

Testable question: How does the number of blades on a model wind turbine affect its performance?

Prediction: I predict _____ because _____.

Plan your fair test:

What will we change?	What will we measure?	What will stay the same?

Materials/equipment:

Safety consideration:

STEP 3 - Conduct, Record and Conclude

Conduct at least three trials and record your results.

Blade number/design	Trial 1	Trial 2	Trial 3	Observation

What pattern did you notice in your results?

Conclusion: What did your results show? Use evidence from your trials.

Was your prediction supported? Explain.

STEP 4 - Connect Your Learning to the Design Challenge

1. What did your investigation teach you about designing an effective renewable-energy device?

2. What feature from today's investigation might you use in your own design? Why?

3. **Class Share:** Write one important finding and explain how it could influence your design in Activity 2.

Self-Assessment

I can...	Yes	Still learning
identify an energy transformation	■	■
plan and conduct a fair test	■	■
record and interpret results	■	■
use evidence to inform a design idea	■	■