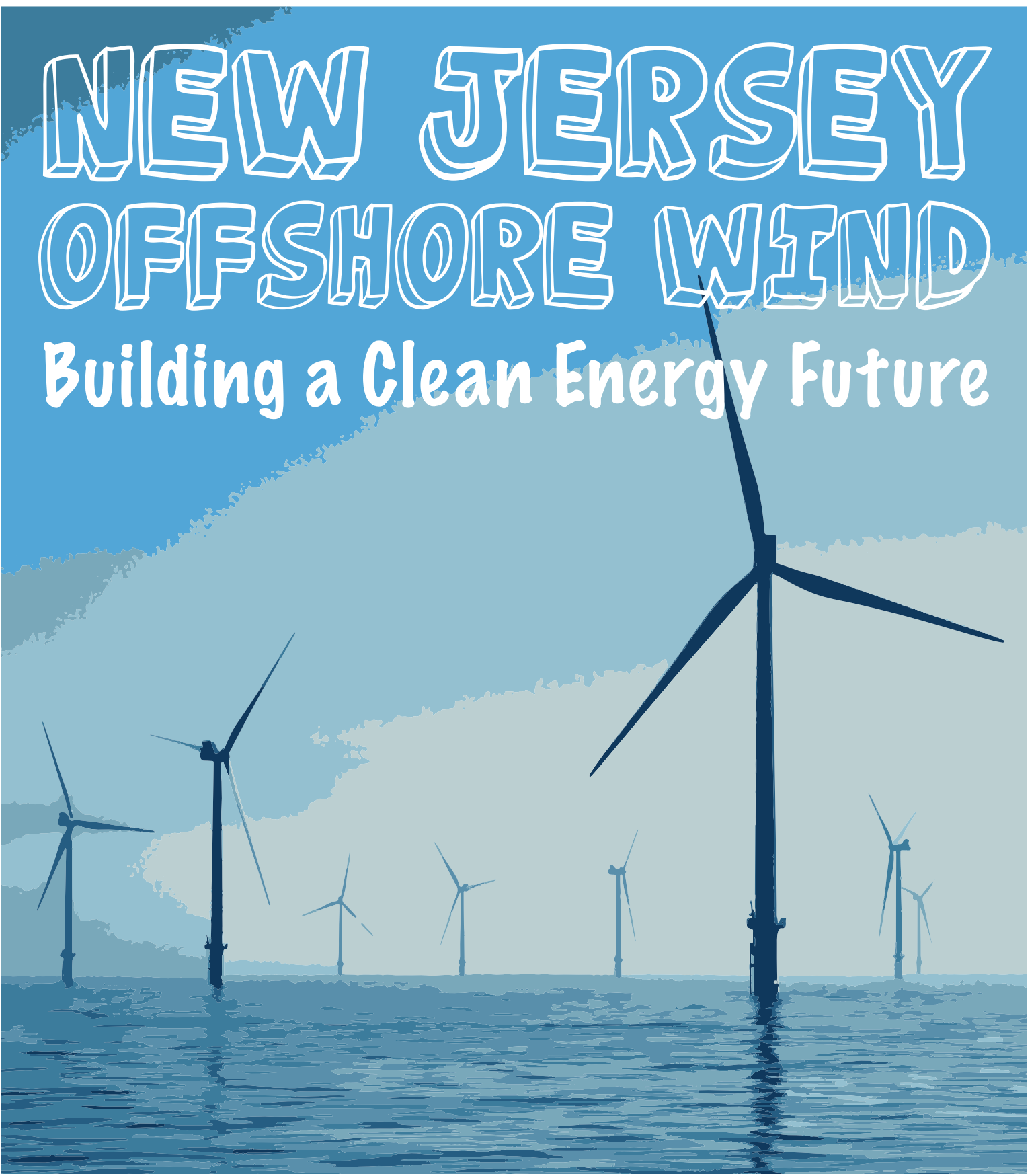
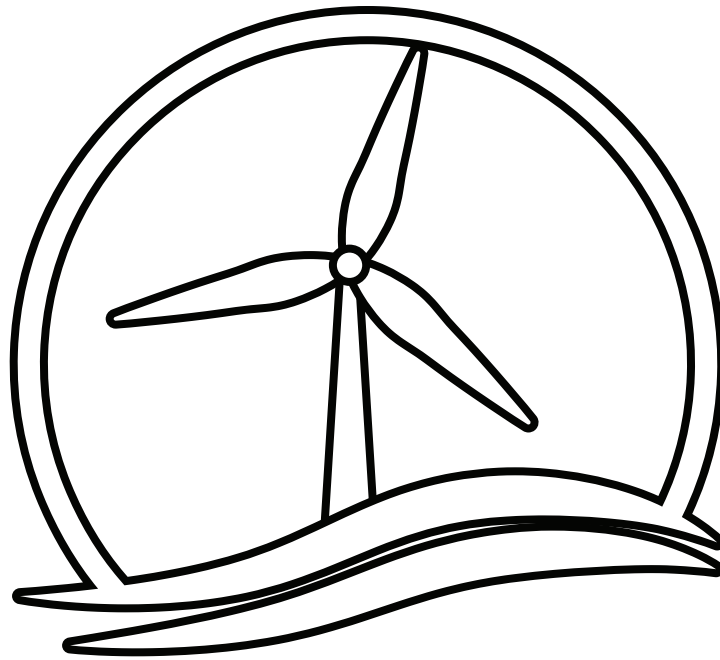


NEW JERSEY OFFSHORE WIND

Building a Clean Energy Future



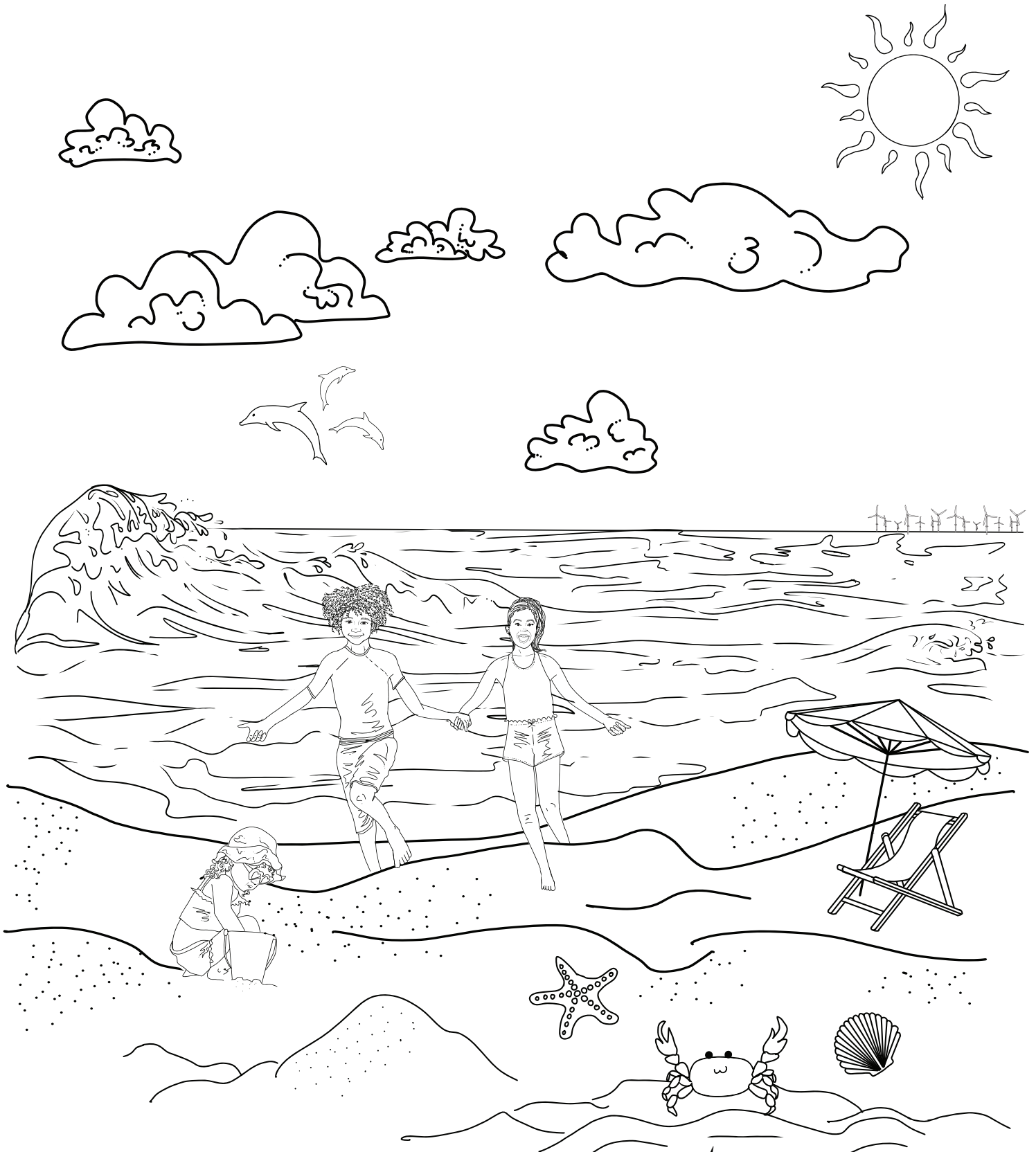


NEW JERSEY OFFSHORE WIND

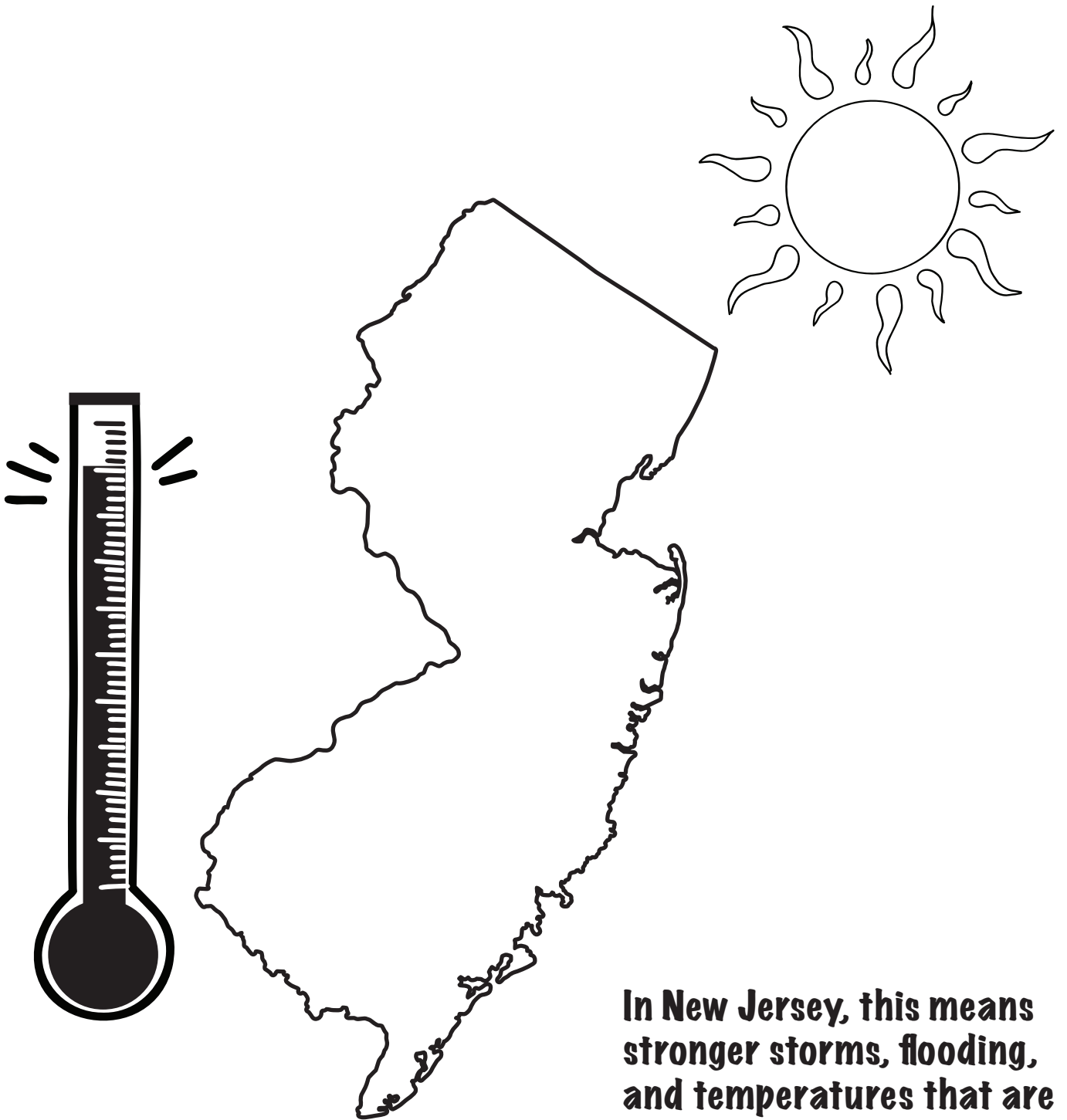
New Jersey Economic Development Authority (NJEDA) helps businesses and organizations in New Jersey create jobs and build healthy communities. One of the areas NJEDA focuses on is clean energy, including offshore wind. NJEDA is developing the Wind Institute to help prepare people for jobs in the offshore wind industry through education and training programs.



In New Jersey, we are taking steps to fight climate change to help make our state and the earth better for the future.



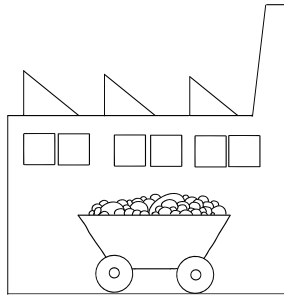
**Climate change is causing the earth to get too warm,
which is hurting our environment.**



**In New Jersey, this means
stronger storms, flooding,
and temperatures that are
uncomfortable for humans
and many animals.**

Fossil fuels create energy but also create pollution and warm the earth. Human activities such as burning fossil fuels and cutting down trees have created climate change, but there are ways to make it better.

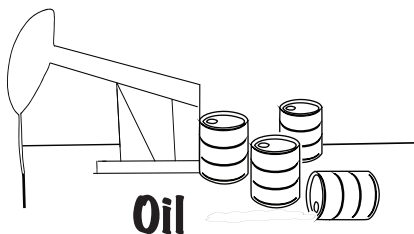
Fossil fuels



Coal

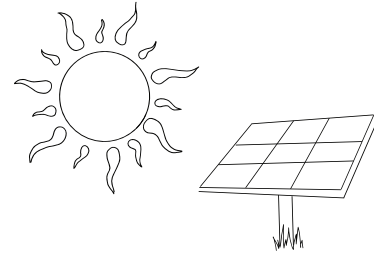


Natural Gas

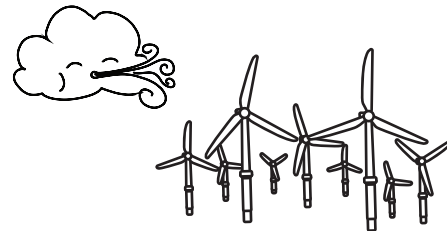


Oil

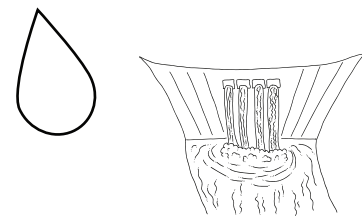
Renewable energy



Sun = Solar Power



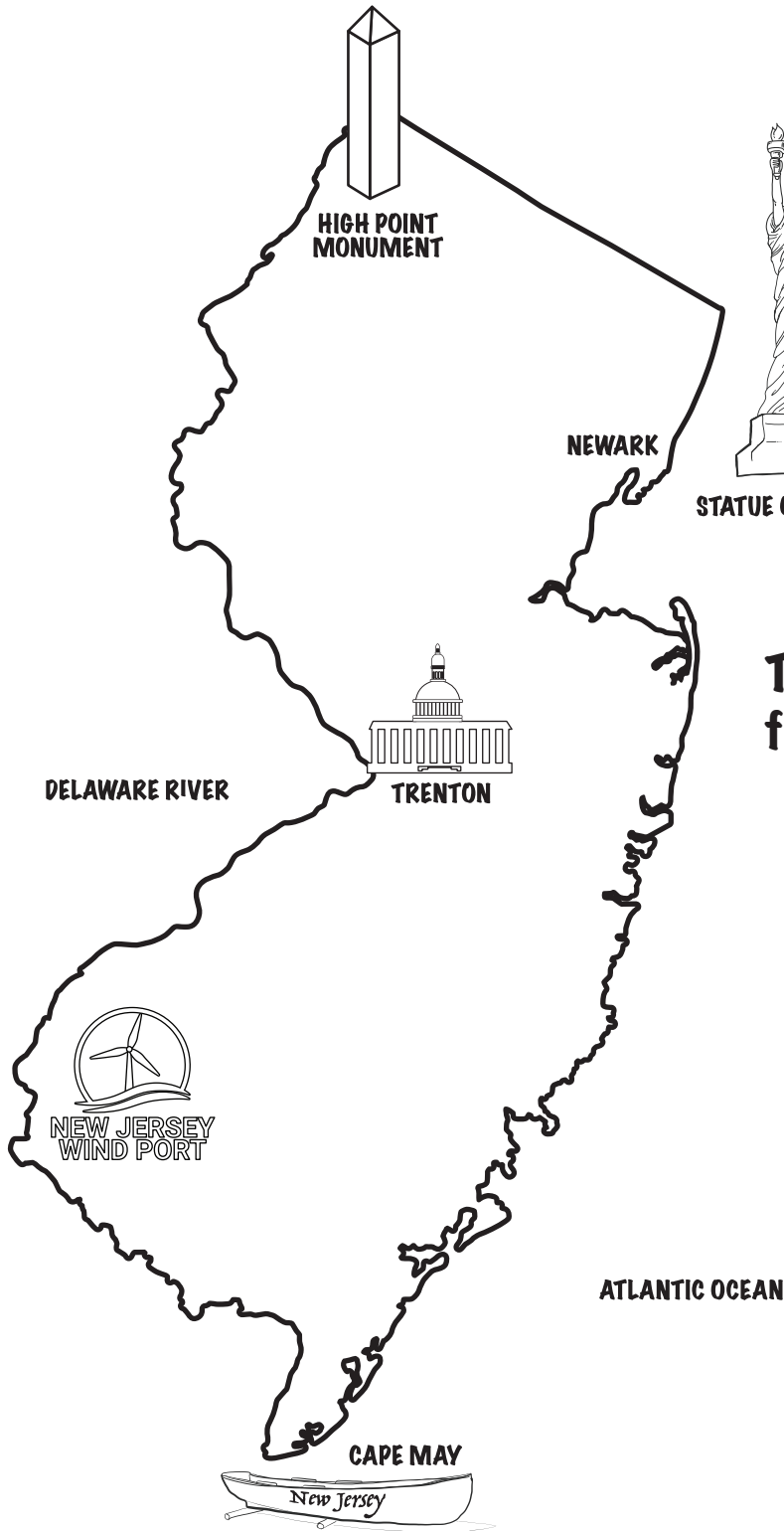
Wind = Wind Power



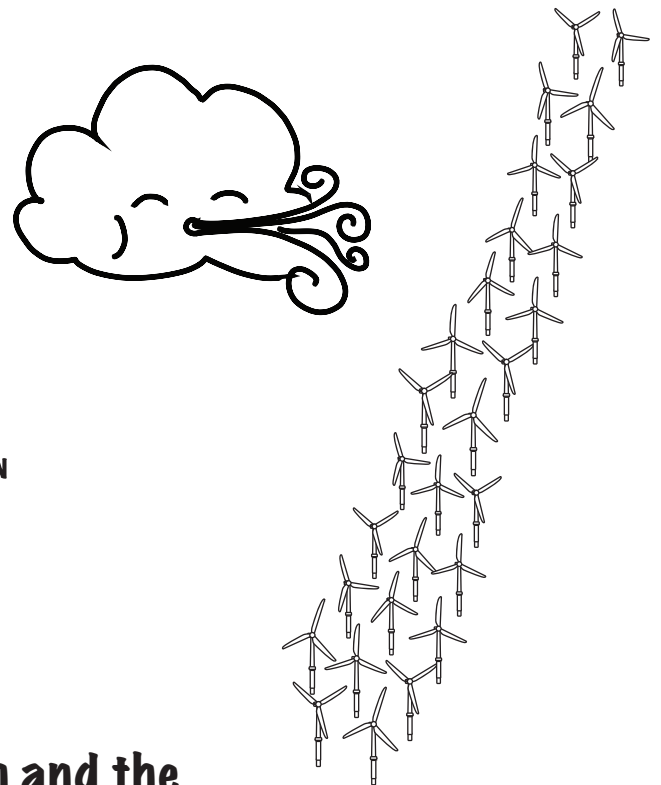
Water = Hydro Power

Instead, we can use renewable energy like solar, wind, and hydropower. These energies are cleaner and safer!

Offshore wind turbines are being installed miles off the coast of New Jersey in the Atlantic Ocean.

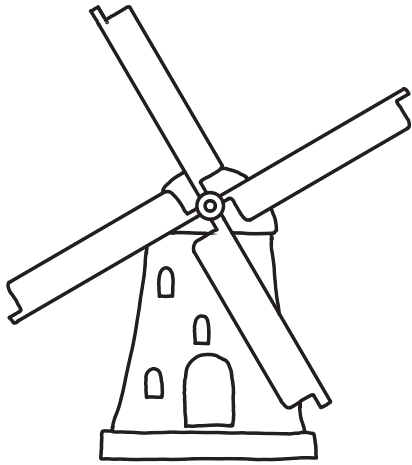


These turbines create energy from wind out in the ocean.

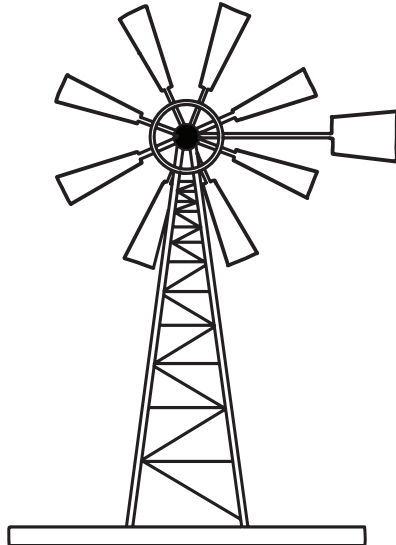


When the wind blows, the blades spin and the turbines create electricity.

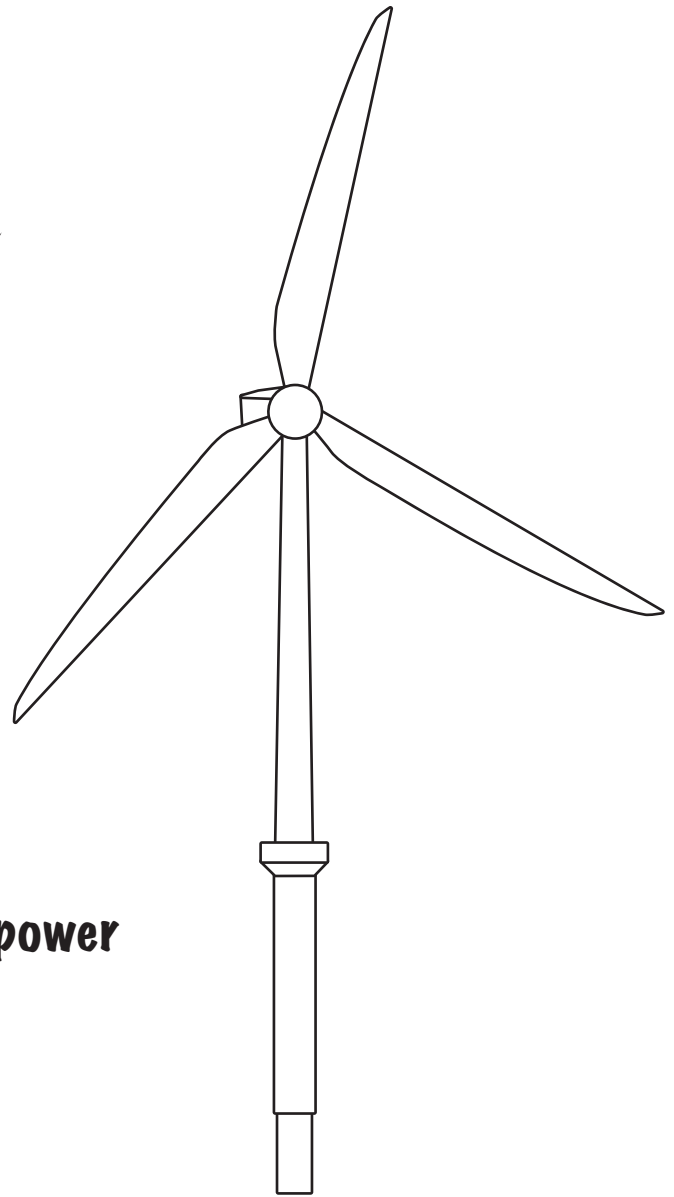
Ancient Greeks discovered the power of wind thousands of years ago by inventing windmills to grind grain for bread.



1200s

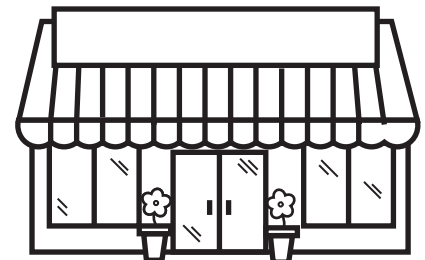


1800s



Today

Today's wind turbines are much more powerful and can make electricity to power homes, schools, businesses, and more!



How much taller is the turbine than the Statue of Liberty?

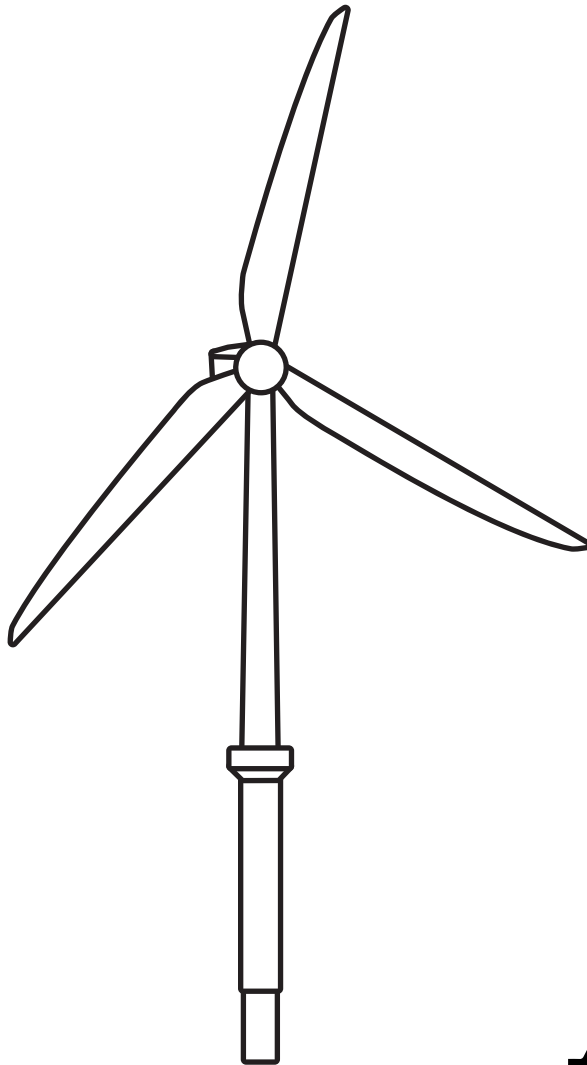
$$853 - 305 = \underline{\hspace{2cm}}$$

305 FEET



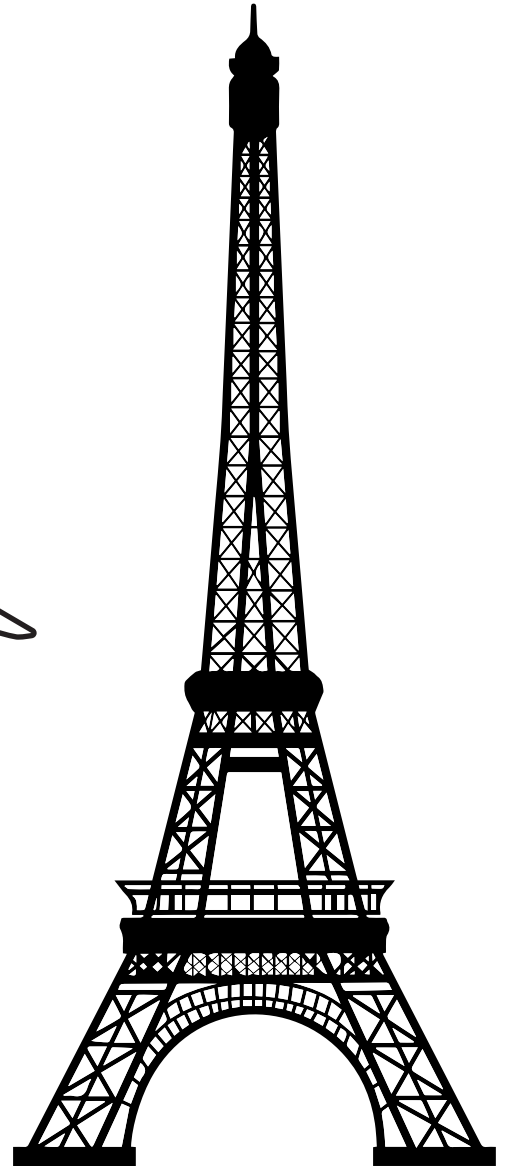
**Statue of
Liberty**

853 FEET



**Offshore Wind
Turbine**

1,083 FEET



Eiffel Tower

Wind turbines are made of several big parts that work together to create electricity.

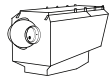
Unscramble the words and match them with their meanings!



SLEDAB



Wind is air in motion which is produced by the uneven heating of the earth's surface by the sun



LCAENEL



A foundation is giant steel tube that connects the turbine to the seabed for support



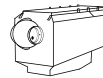
WREOT



A turbine is giant structure that turns wind into electricity



DNTIFOAUNO



A nacelle is where parts that create electricity are located in the turbine



LACBES



Electricity is a form of energy that gives things the ability to move and work



BRUTNIE



Blades are the three wings, similar to airplane wings, that spin when the wind blows



TILCRETYECI



A tower is like a giant pole that connects the blades and nacelle to the foundation

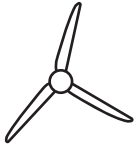


DIWN



Cables are giants ropes made of wire that transport electricity to land

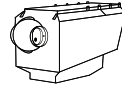
Can you find the different parts of the wind turbine?



3 BLADES?



4 TOWERS?



3 NACELLES?

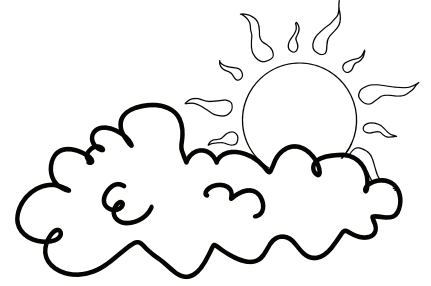


5 FOUNDATIONS?

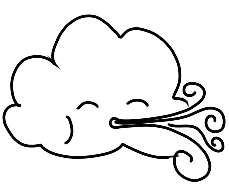
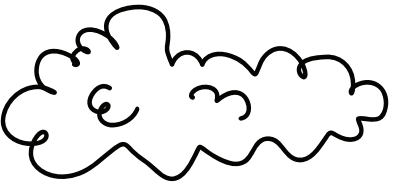


Offshore Wind Word Search

Find the words listed below in the puzzle!



J P T Z J Q M D J C Z W H J P S J D E J
 N G I P X W R M F K U H G A Y X I Y L N
 M A L I B E Y H I D Q N X F O G Q F E M
 U W C P P A L I X R B E P T O U K N C U
 A Z U E F W F J H K Q V J W E C H L T A
 G C A B L E S L G I J Y Z I D Y L O R G
 F W K S R L I X R Y C N X N N K D I I F
 Q O I V A Z E Q G R U Q M D E I K R C Q
 I N M B Q N E R K E T T P F G Y R R I I
 R X F U V D E R V Q X C L O K F R Z T R
 U P A H F N W V G P Q W A L O A S B Y U
 R I X T E F F O U N D A T I O N O Y O R
 B I F N D G Y Z K T H C Z V V X U D A B
 V C R N H U G K X D B Y D H N S E G T V
 C W S Q N J E D A A Y U T Z Z E N R S C
 Q Z N R R A Z H L Z U S O E N O S E Q Q
 K P Y M M V J K X R R G W Q M J D D Y K
 J B O F Z H P J L H E N E R W A M Q C J
 A J F T G E N E R A T O R H L L J M B A
 V N T U R B I N E O P W I B K Z A W U V



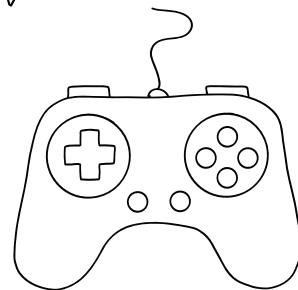
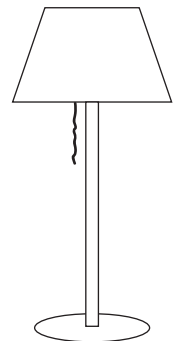
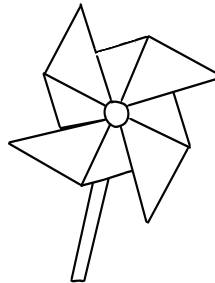
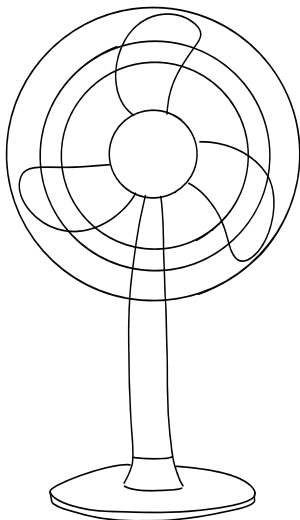
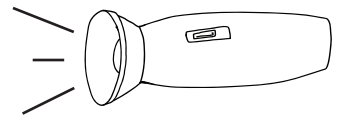
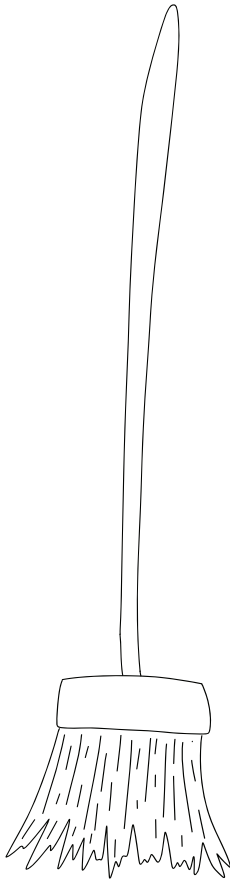
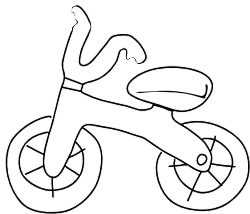
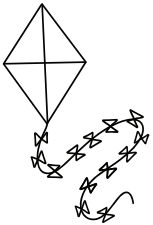
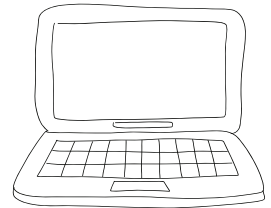
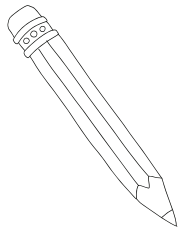
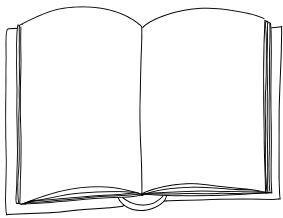
Blades
Nacelle
Tower
Foundation
Cables

Turbine
Energy
Electricity
Wind

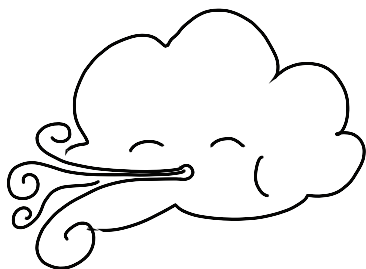
How does wind power your home?

Wind turbines create electricity that travels through cables to power lights, TVs and any other item that needs electricity.

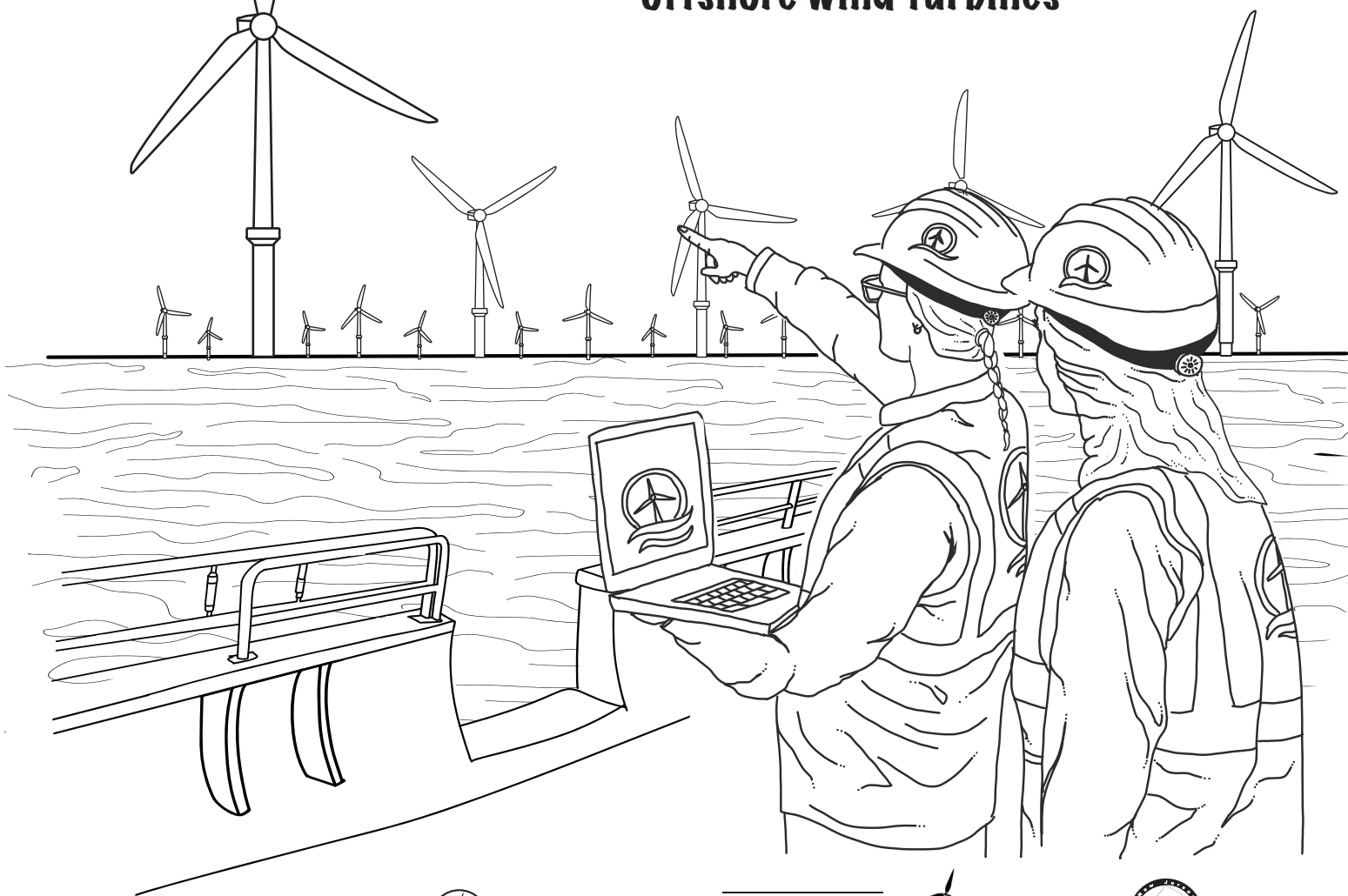
Which items around your house or school need electricity to work?



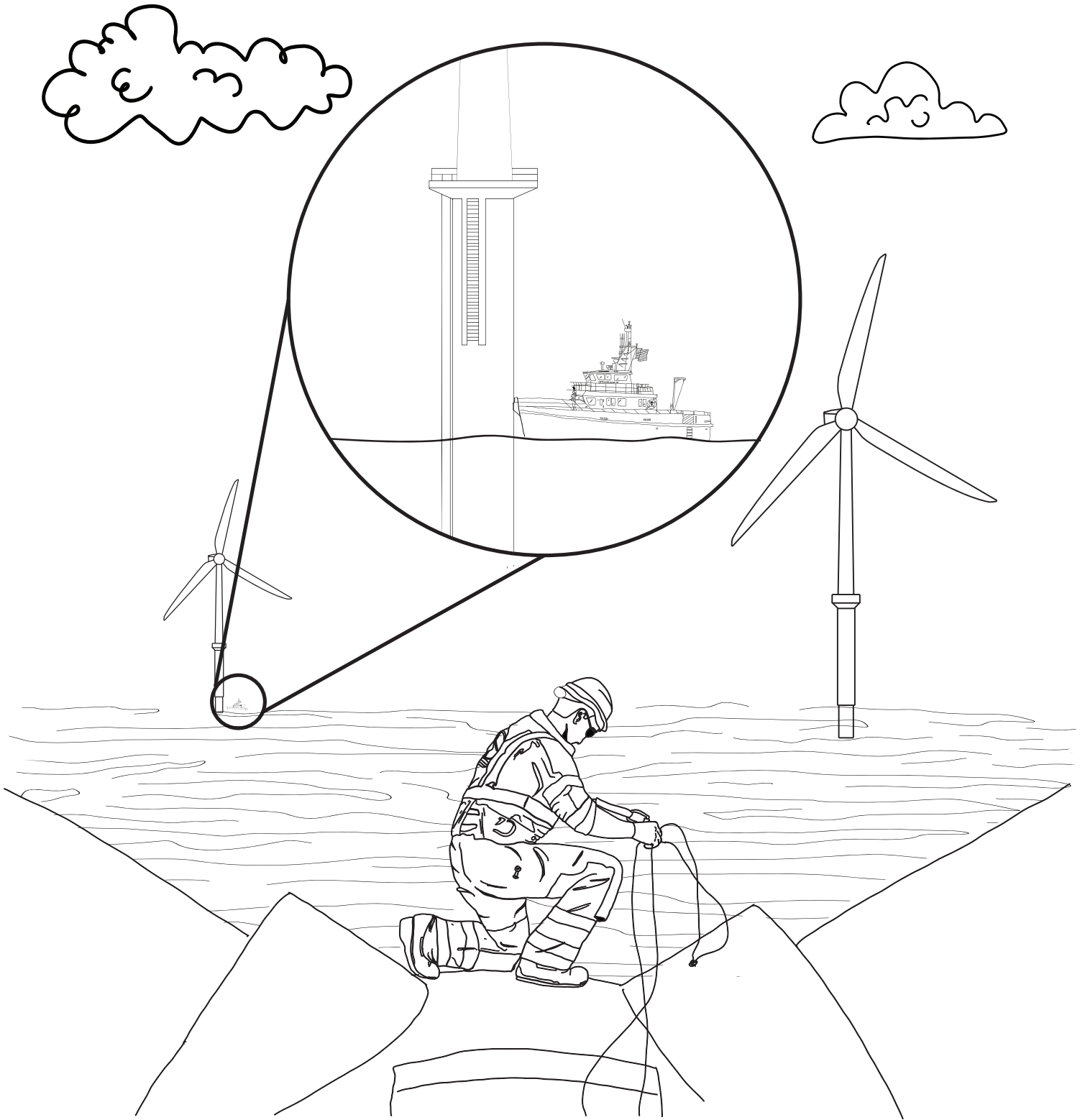
There are many types of jobs involved in building and taking care of wind turbines. Some of these jobs include engineers, wind technicians, species observers, welders, and many, many more!



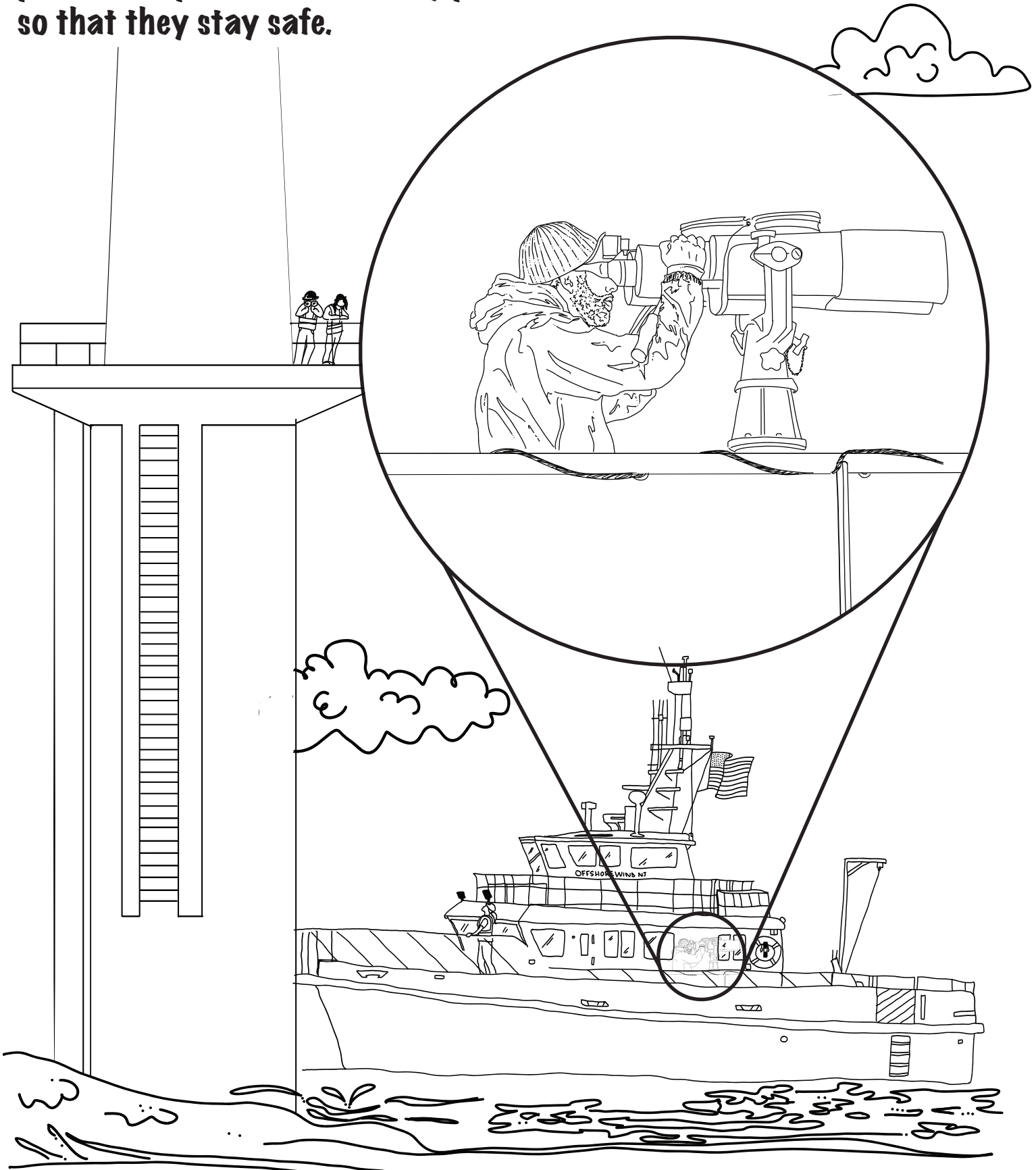
Engineers help design and build the offshore wind turbines



Wind technicians climb up the turbines and make sure they are operating well.

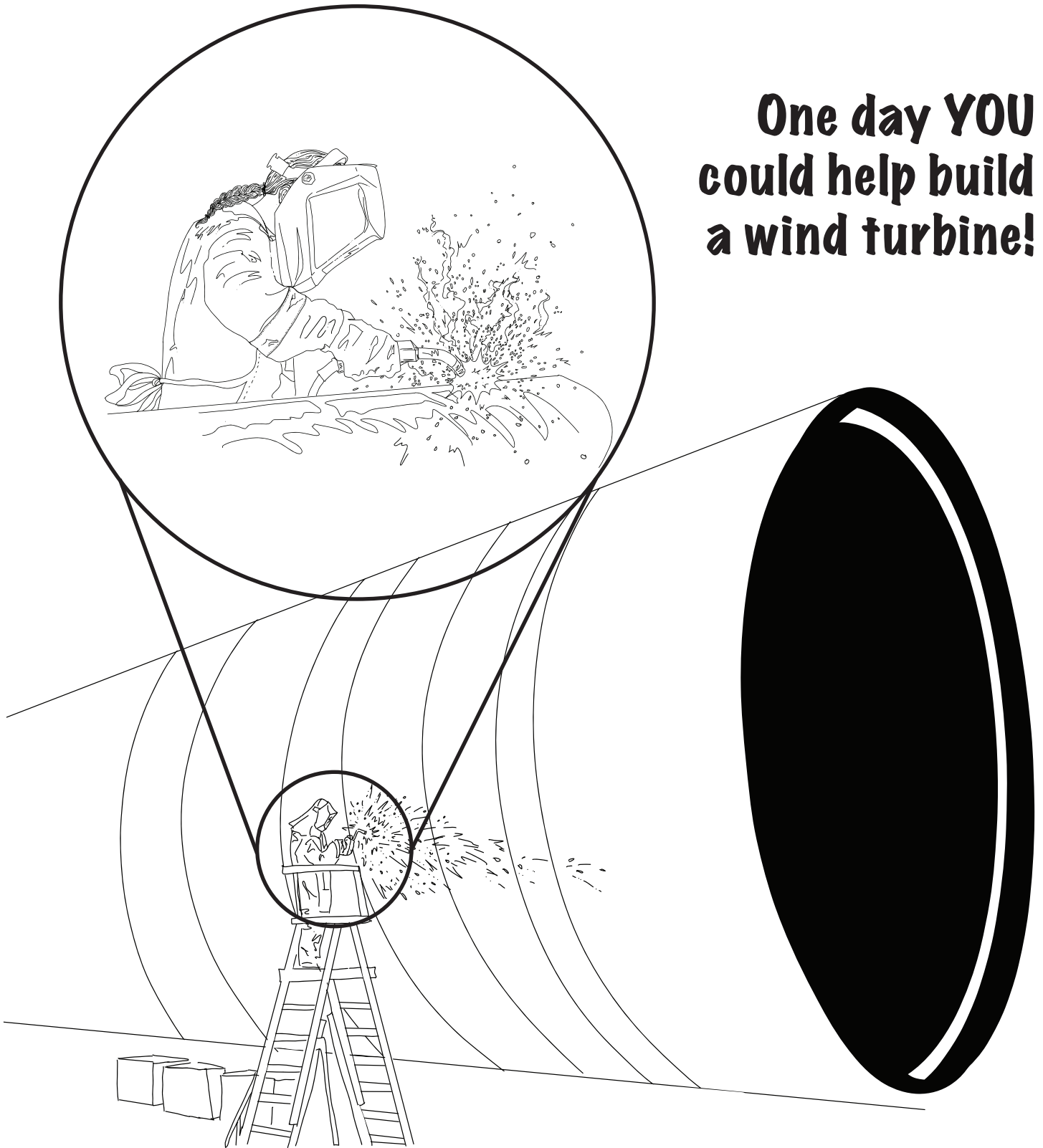


Species observers are trained to monitor for protected species, or federally protected animals, so that they stay safe.



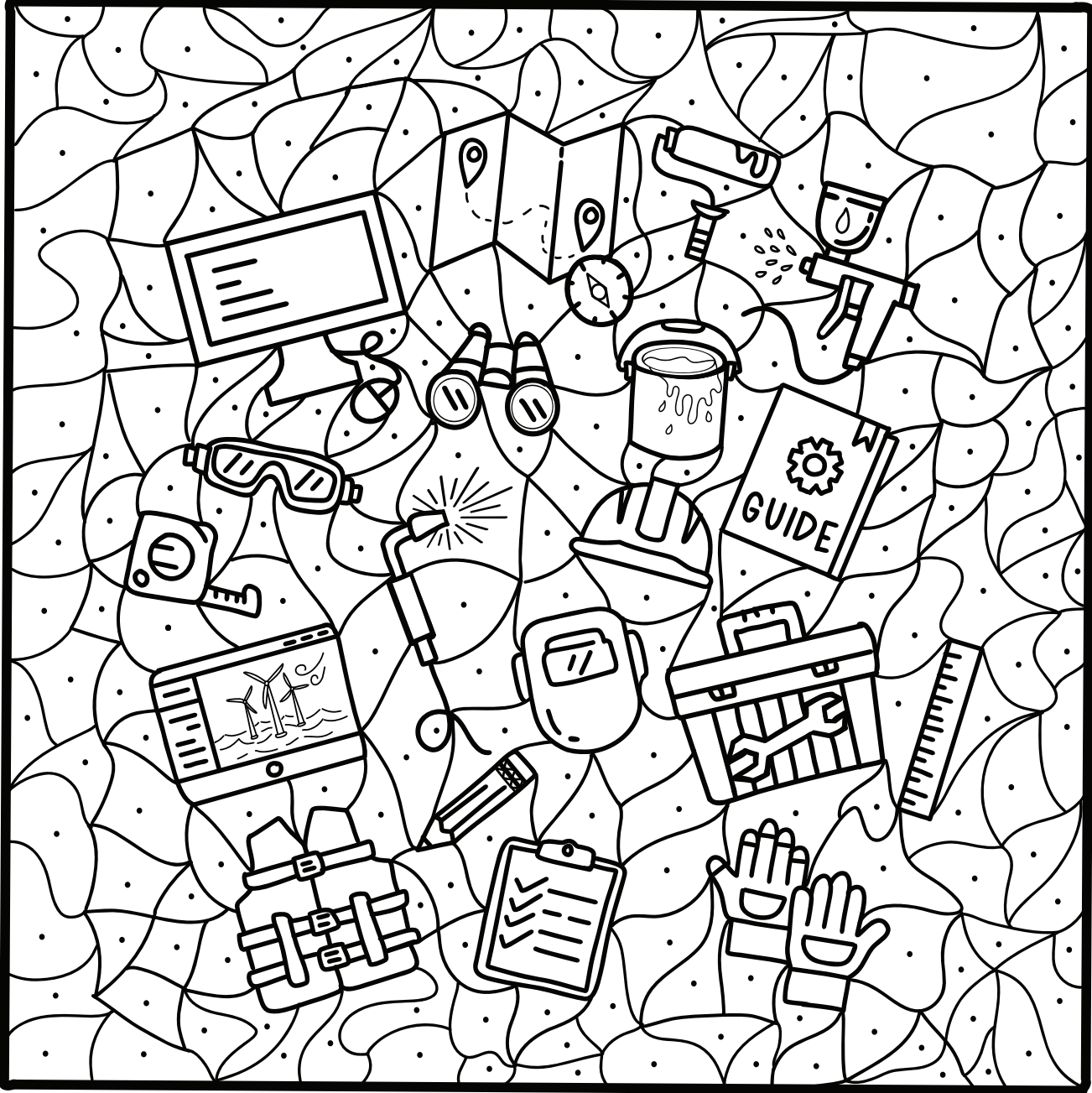
Welders help put the pieces of the turbines together to make sure the turbines are strong and sturdy.

**One day YOU
could help build
a wind turbine!**

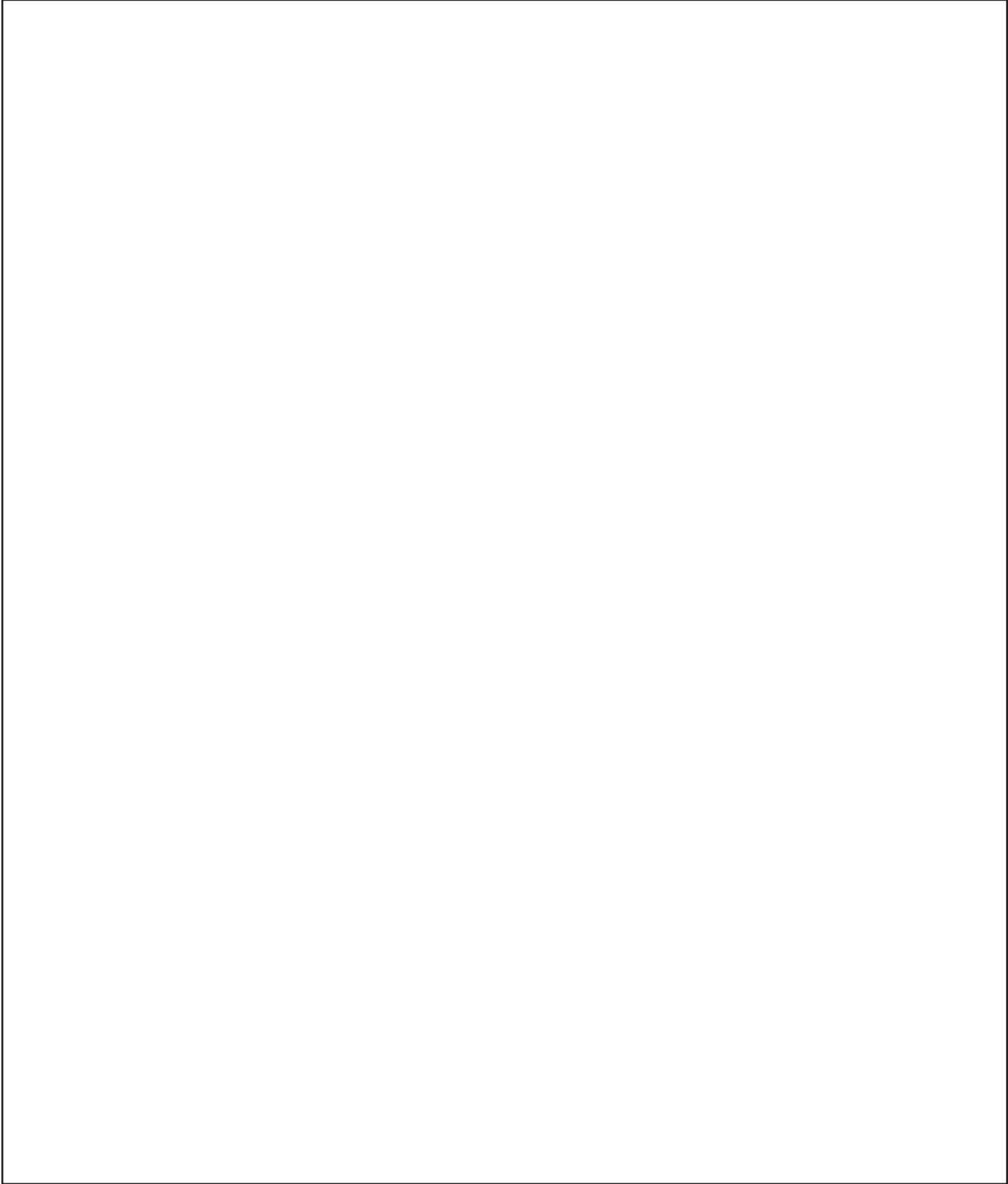


Would you like to work in offshore wind when you grow up?

Color in the shapes with a dot (·) to reveal the different tools that offshore wind workers use!



Draw what a future with clean energy looks like to you!



Catch the wind like a wind turbine!

You will need:

Scissors

1 piece square paper

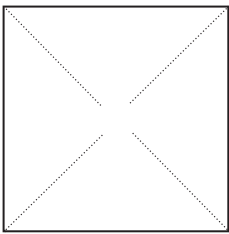
Pencil or pen

1 pipe cleaner

Start with a square sheet of paper.

You can use any size of paper you want, but something around 6 inches will work the best.

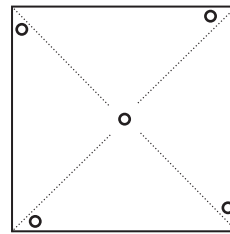
Fold it diagonally to create creases.



Cut along the folded lines.

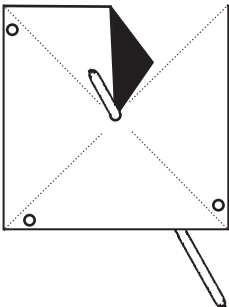
Make sure you leave space at the center to keep the paper in one piece.

Punch holes where the dots are.

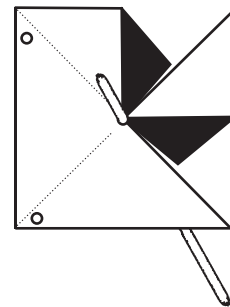


Turn the paper so it's face-down and thread the pipe cleaner through the center hole.

Fold each flap so the pipe cleaner goes through the hole.

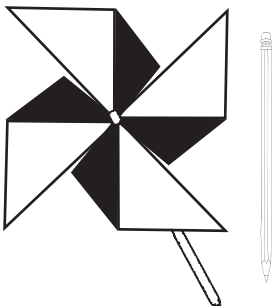


Tie a knot in the pipe cleaner to secure the front of the pinwheel.

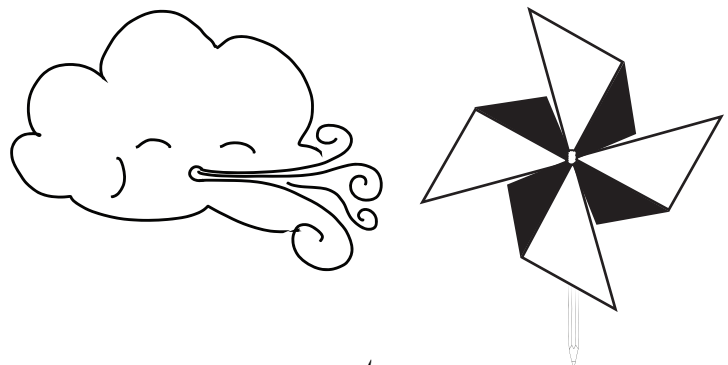


Wrap the other side of the pipe cleaner around a pen or pencil.

Don't make it too tight, or it won't be able to move.



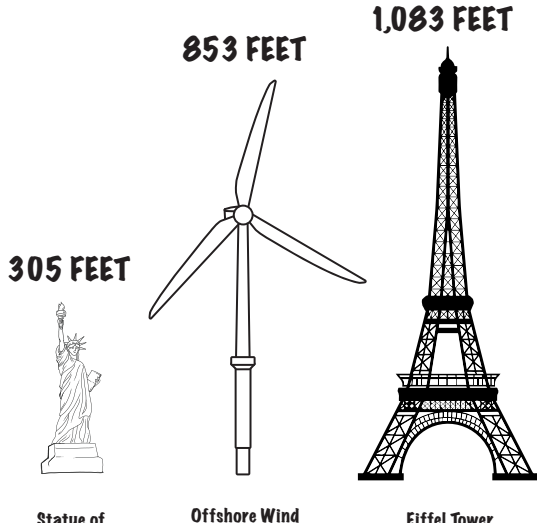
Blow on it and see the power of wind!



Answer key

How much taller is the Turbine than the Statue of Liberty?

$853 - 305 = \underline{548 \text{ feet}}$



Wind turbines are made of several big parts that work together to create electricity.

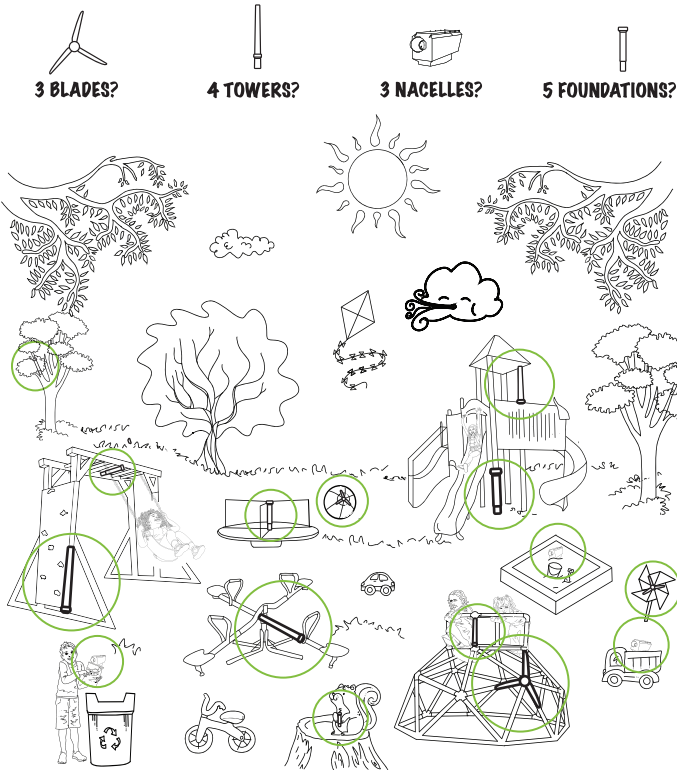
Unscramble the words and match them with their meanings!

- SLEADB** (Icon: Wind turbine) - A turbine is giant structure that turns wind into electricity
- LCAENEL** (Icon: Foundation) - A foundation is giant steel tube that connects the turbine to the seabed for support
- WREOT** (Icon: Tower) - A tower is like a giant pole that connects the blades and nacelle to the foundation
- DNTIFOAUNO** (Icon: Nacelle) - A nacelle is the part of the turbine where parts that create electricity are located
- LACBES** (Icon: Cable) - Cables are giant ropes made of wire that transport electricity to land
- BRUTNIE** (Icon: Blade) - Blades are the three wings, similar to airplane wings, that spin when the wind blows
- TILCRET/ECI** (Icon: Lightning bolt) - Electricity is a form of energy that gives things the ability to move and work.
- DIWN** (Icon: Sun) - Wind is air in motion which is produced by the uneven heating of the earth's surface by the sun

Can you find the different parts of the wind turbine?

Offshore Wind Word Search

Find the words listed below in the puzzle!



J P T Z J Q M D J C Z W H J P S J D E J
 N G I P X W R M F K U H G A Y X I Y L N
 M A L I B E Y H I D Q N X F O G Q F E M
 U W C P P A L I X R B E P T O U K N C U
 A Z U E F W F J H K Q V J W E C H L T A
C A B L E S L G L J Y Z I D Y L O R G
 F W K S R L I X R Y C N X N N K D I I F
 Q O I V A Z E D G R U Q M D E I K R C Q
 I N M B Q N E R K E T T P F G Y R R I
 R X F U V D E R V Q X C L O K F R Z T R
 U P A H E N W V G P Q W A L O A S B Y U
 R I X T E F F O U N D A T I O N O Y O R
 B I F N D G Y Z K T H C Z V V X U D A B
 V C R N H U G K X D B Y D H N S E G T V
 C W S Q N J E D A A Y U T Z Z E N R S C
 Q Z N R R A Z H L Z U S O E N O S E Q Q
 K P Y M M V J K X R R G W Q M I D V Y K
 J B O F Z H P J L H E N E R W A M Q C J
 A J F T G E N E R A T O R H L L J M B A
T U R B I N E O P W I B K Z A W U V

Blades
Nacelle
Tower
Foundation
Cables

Turbine
Energy
Electricity
Wind

Answer key

How does wind power your home?

Wind turbines create electricity that travel through cables to power lights, TV's and any other item that needs electricity.

What items around your house or school need electricity to work?

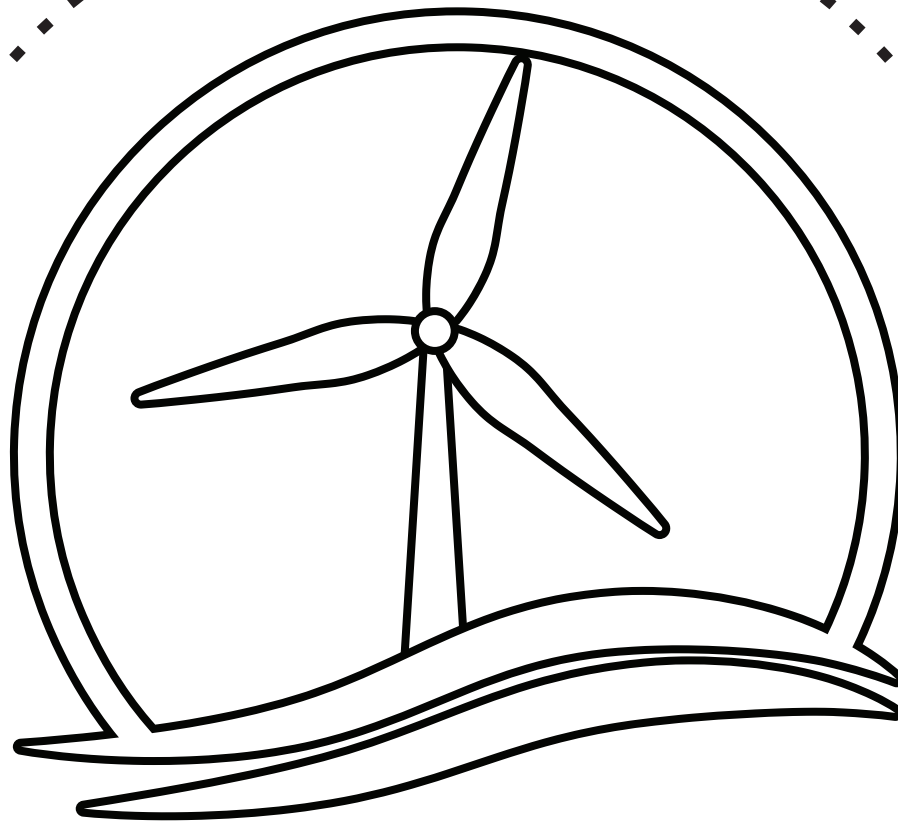


Color in the items that can be powered by offshore wind!

Would you like to work in offshore wind when you grow up?

Color in the shapes with a dot (·) to reveal the different tools that offshore wind workers use!





NEW JERSEY OFFSHORE WIND



Certificate of Completion

This certificate is hereby
awarded to

as a
NJ Offshore Wind
Junior Advisor

Signed

Date

