

WORKSHOP EXTENSION ACTIVITY

Built by The Home Depot Kids Workshop



WINDMILL PLANTER

Ages 5-12

MAKE. CREATE. EXPLORE.

#KidsWorkshopExplore





Have you ever seen a windmill?
Big or small, they are impressive!

Do you know what real windmills are used for?



Powerhouse

You may already know that windmills use the wind's energy to create power. But did you know that windmills have been around for more than 1,500 years? Windmills are considered clean renewable energy, which means they produce no pollution and they come from a source that can't run out! (For more information, check out this interview with a [renewable energy scientist!](#))

While you won't actually be creating wind power with your windmill planter, think creatively: What else could you use the windmill portion of your planter for?

Answer: Since it has blades that turn, it's perfect for testing wind direction and wind speed!



Show us your Windmill Planter in action! Use [#KidsWorkshopExplore](#) to post a picture of how you're using your windmill planter to capture weather data.

A compass rose tells you cardinal directions.

Wind Direction: North, South, East, West

A compass rose will tell you the cardinal directions (north, south, east, and west) so you can see which direction the wind is blowing.

Materials needed for a compass rose:

- One white plastic sheet (18 by 24 inches)
- Permanent marker
- Ruler

Process:

1. Use the marker to make a large dot in the middle of your plastic sheet.
2. Next, draw a "t" on the plastic sheet. (Use your ruler to make straight lines!) The lines should intersect the dot and go close to the end of the sheet.
3. Label your cardinal directions! Starting at the top and going clockwise, label the lines *North, East, South* and *West*.
4. To be even more precise, you can also draw and label the intercardinal (or in-between) cardinal directions too: Northeast, Southeast, Southwest and Northwest.
5. When you're finished, your sheet should look like a large version of the illustration to the left.
6. You're not done yet! It's one thing to have a compass rose, but you still need to know which direction is north! Then, you can use your compass rose to help determine wind direction.



Did you know that the sun rises in the east and sets in the west? Wait until either dawn or dusk, and then go outside and choose a safe place to keep your windmill planter. Once you have a spot in mind, look for the sun! Think about the time of day and whether the sun is in the east or the west. Then, put down your compass rose so it is facing the right direction.



Show us your Windmill Planter in action! Use [#KidsWorkshopExplore](#) to post a picture of how you're using your windmill planter to capture weather data.

7. If it's a breezy day, you can test the wind direction right now! Pick up your windmill planter and slowly rotate it until the blades are spinning most freely with the wind. Now hold the planter above your compass rose and match the spinning blades with one of the compass rose lines. Look at the direction that the windmill blades are spinning. (For instance, if you match the blades with the north/south line, are the blades spinning away from the north or away from the south?) Wind direction is always described by the direction the wind comes from. A southerly wind, for instance, comes from the south!
-

Wind Speed

Scientists use a tool called an anemometer to measure the speed of the wind in miles per hour. While your windmill planter won't be quite as scientific, you can certainly use it to get a general idea of how strong the wind is blowing!

Think about it:

Without any kind of technology, how could you use your windmill planter to determine which days have stronger wind than others?

If you thought of counting how many times the windmill blades rotate in a certain amount of time, then you're spot on!

To make it easier to count your windmill's rotations, you'll need:

- Paint
- Foam brush
- A clock or timer

Build it:

1. Choose one windmill blade and carefully paint it. This will help it stick out so you can count rotations more easily!
2. Now all you'll need to do is count the number of times your windmill rotates in one minute. Once you've counted rotations at different times or on different days, you'll be able to compare the rotations and determine which days have stronger wind!



Show us your Windmill Planter in action! Use [#KidsWorkshopExplore](#) to post a picture of how you're using your windmill planter to capture weather data.

Meteorologist-in-Training

A change in wind direction often means that a change in weather is coming. Along the same lines, stronger wind speed can also indicate that a storm is on its way.

Recording wind data will help you notice weather trends, so you can better use wind speed and direction to predict the weather! For a week (or longer, if you're interested) keep track of the wind and weather in the chart below. Then try to notice patterns between wind speed, direction, and certain types of weather. Before long, you may become your family and friends' go-to meteorologist!

Weather and Wind Tracking

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Wind Direction							
Wind Speed	___ rpm						
Weather Notes							

**rpm = number of windmill rotations per minute*

For more information to help you predict the weather like an expert, check out this [cool kid site](#) from the National Weather Service!

“Scientists use a tool called an **anemometer** to measure the speed of the wind in miles per hour.”



Show us your Windmill Planter in action! Use [#KidsWorkshopExplore](#) to post a picture of how you're using your windmill planter to capture weather data.