

# WORKSHOP EXTENSION ACTIVITY

Built by The Home Depot Kids Workshops

## September 2025: Crop Duster

Ages 5-12

### CONNECT.

Have you ever tried to walk or run while carrying something heavy? Try to picture what you were carrying and how you carried it. Did it affect how you moved?

### INVESTIGATE.

Your Crop Duster has to carry things, too! Crop dusters are special airplanes that fly low over fields to spray plants with water or fertilizer to help them grow and stay healthy. Sometimes, they even scatter seeds on the ground to plant new crops. No matter what, crop dusters must carry these materials before they distribute them!

Today, let's experiment with the best place for your Crop Duster to carry this extra weight!

#### You'll need:

- Your Crop Duster
- Hex nuts and/or washers of various weights
- Painter's tape
- Stopwatch
- Notepad and pencil

1. First, brainstorm *where* it might be best for your Crop Duster to hold its supplies. Is there room on the wings, for example? How about under the plane's body? Think about how the weight of the supplies will be spread out (or distributed) and how this might affect the way your Crop Duster moves. Then write one idea in the first column of the Weight Distribution Chart below.
2. Next, use painter's tape to attach the weights (hex nuts or washers) to your Crop Duster based on your idea.
3. Mark a starting line and a finish line on the floor with the painter's tape. Make sure they're at least as far apart as you are tall!
4. Ask a friend or family member to help you time how long it takes for your Crop Duster to cross the finish line.
5. Then place your Crop Duster on the starting line and give it a gentle push. Watch how it moves! Does its weight distribution help it roll in a straight line, or does it make it wobble? Does it seem too heavy or not heavy enough?
6. Write down your Crop Duster's travel time and what you noticed about its movement in the Weight Distribution Chart.
7. Repeat Steps 1-6 three more times, each time thinking of a new place for the weights. Try different weight distributions to see which one helps your Crop Duster move the most smoothly!

#### Weight Distribution Chart

Weight Placement Ideas	Travel Time	Observations

### INNOVATE.

Now that you've tried different ways for your Crop Duster to carry extra weight, it's time to decide: Where's the best spot for it to carry these extra supplies? You can pick one of the ideas you already tested or make a small change to one of your designs. (If you make a change, be sure to test it out!)

Once you are confident that you've found the best solution, sketch a picture of it in your notebook so you can refer to it the next time your Crop Duster needs to fly!

**Share a photo of your Crop Duster with its best weight distribution, using #kidsworkshopexplore.**



Your Crop Duster is ready to fly now, but you will also need irrigation to help crops grow! Did you know that **Plumbers** help build systems of pipes and other infrastructure to supply water and remove excess water from agricultural sites.

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