

# Robot Steps

Artist/Author: Ann Marie Caldwell



**Time Needed:** 15-25 minutes

**Arts Focus:** Theatre  
**Math Focus:** Measuring

**Age Range:** 6-8

## Mini-Lesson Description:

In this lesson we will take turns directing each other to find a secret object by estimating distances and giving simple directions. Learners will use play, communication, and improvisation to engage with math.

## Key Concepts:

Distance; Measure; Estimate; Character Play; Guided Drama; Props; Inches; Feet

## Materials Needed/Prep:

- A space you can move around in
- Objects in the space that can be handled safely (e.g., wooden spatula, towel, book, pillow, small toy)

## Step-by-Step:

1. Explore distance and estimating:
  - Ask the learners: What are some ways that you have seen people measure or describe distance?
  - In the US many people measure distance in inches and feet.
  - It's useful to have a tape measure around to measure precisely but when you don't have one, you can estimate. Estimate means make your best guess.
2. Estimating Feet: You can estimate feet using a shoe. Practice measuring things with the shoe: How many feet away is the door to the couch? How many feet tall is the chair?
3. Estimating Inches: To measure smaller things we use inches. On an adult's hand, one inch is about the distance between the first and second knuckle on the pointer finger. It's not exact, it's an estimate. If you have a ruler, measure to see how close it is. What's part of the learners' hand is about one inch? Practice measuring things using your hands and your estimated inch. Ask the learners: How many inches wide is this chair? How many inches wide is a plate? How many inches long is the phone?

## Robot Steps Guessing Game:

4. One person will be the "Chooser" and pick something in the room to be the Secret Object (keep it a secret). Another person will be the "Robot" who will follow the Chooser's directions to try to find that Secret Object.
5. The person being the Robot shows how they use their robot body and their robot voice. How does your Robot move? How do its arms move? How does it sound?
6. The Chooser gives directions to the Robot to find the Secret Object, without revealing what it is or what it looks like. The Chooser can only give simple instructions: go forward, backward, left, or right, and use estimated distances. Practice what you learned about body parts to estimate distances.
  - It may sound something like: "Move four feet forward. Raise your hand up two feet. Move your hand four inches to the right. Reach forward two inches. Now grab that!"
7. The Robot follows the directions exactly, grabbing an item, and checking in with the Chooser to see if they have found the Secret Object. If not, keep giving specific directions using what you know about estimating distance.
8. Celebrate when the Robot finds the Secret Object. Switch roles and keep having fun!

## Variations and Next Steps:

- If the learner(s) aren't confident in left and right, they can point in the direction or name other items in the room.
- Go tiny! Add centimeters to the game: A pencil is about 1cm wide. A penny is about 2cm wide. What's some distance on the learner(s) hand and on the adult's hand that is about one centimeter?
- Go big! Add yards to the game: This works great for playing outdoors. On an adult, the distance from the tip of their nose to their outstretched fingertip is about one yard. What's some distance on the learner(s) arms that is about one yard? How many yards long is the fence? How many yards from the door to the sidewalk?

## Standards

**WA State Theatre Anchor Standard 1** Generate and conceptualize artistic ideas and work.

**Performance Standard (TH:Cr1.1.2)** b. Collaborate with peers to conceptualize scenery in a guided drama experience (e.g., process drama, story drama, creative drama). c. Identify ways in which voice and sounds may be used to create or retell a story in guided drama experiences (e.g., process drama, story drama, creative drama).

**Math Standards:** ([CCSS.MATH.CONTENT.2.MD.A.3](https://www.arts.wa.gov/creative-start-studio/)) Estimate lengths using units of inches, feet, centimeters, and meters.

Watch a video of this Creative Start Mini-Lesson and find more at: <https://www.arts.wa.gov/creative-start-studio/>