

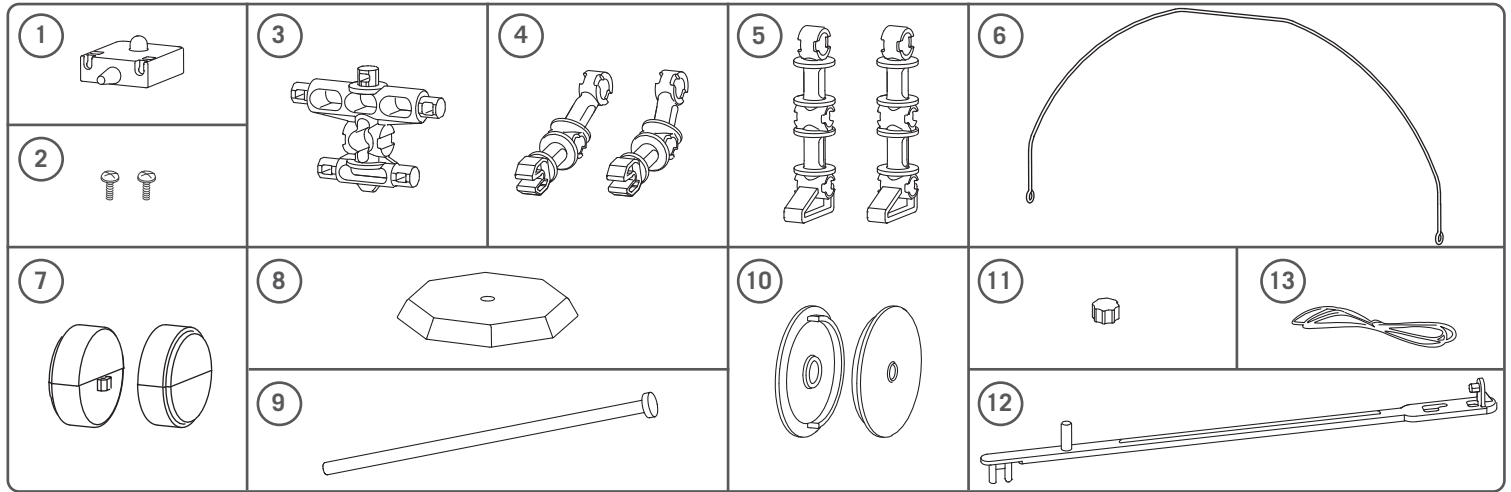
KidzLabs™ Balancing Robot

⚠ WARNING:
CHOKING HAZARD – Small parts.
Not for Children under 3 years.

A. SAFETY MESSAGES

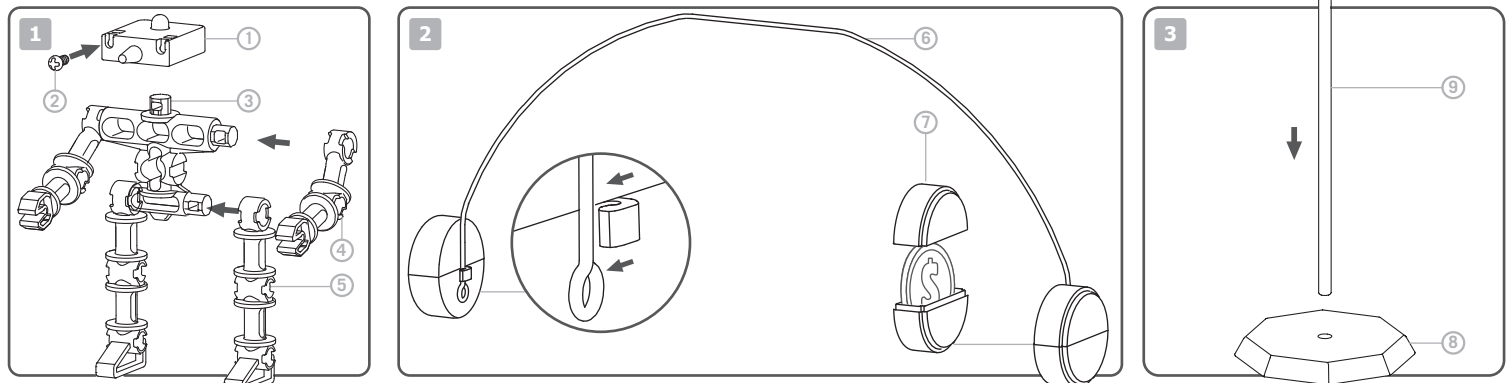
1. Adult supervision and assistance are required at all times.
2. This kit is intended for children 5 years or older.
3. This kit and its finished product contain small parts which may cause choking if misused. Keep away from children under 3 years old.

B. CONTENTS

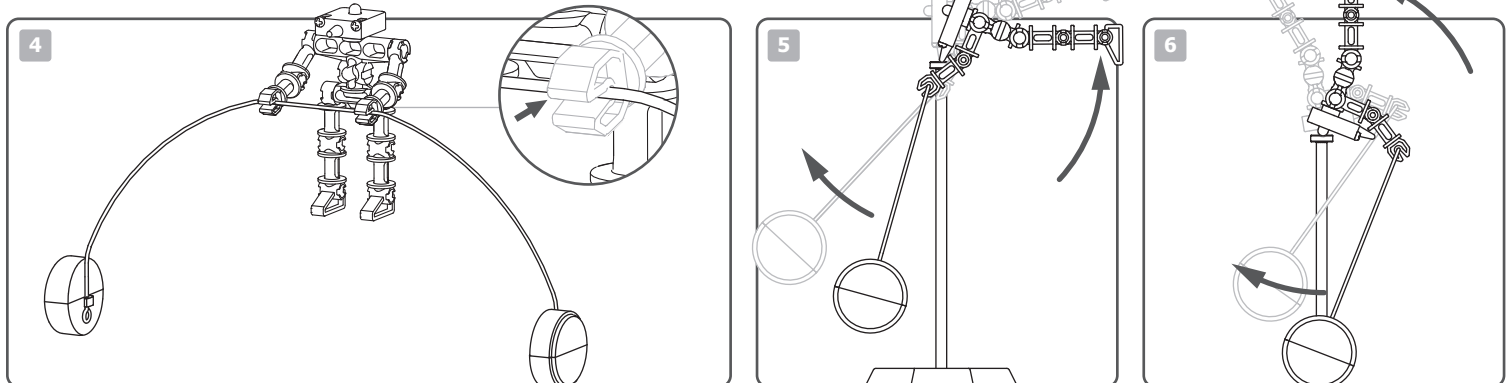


Part 1: Robot head, Part 2: Screw x 2, Part 3: Robot body, Part 4: Robot arm x 2, Part 5: Robot leg x 2, Part 6: Arched bar, Part 7: Weight capsule set x 2, Part 8: Stand base, Part 9: Stand, Part 10: Wheel half x 2, Part 11: Wheel lock, Part 12: Unicycle Stand, Part 13: String.
Also required but not provided in this kit: coins, clean plastic drinks bottles x 2 and a small crosshead screwdriver.

C. BALANCING BAR TRICK

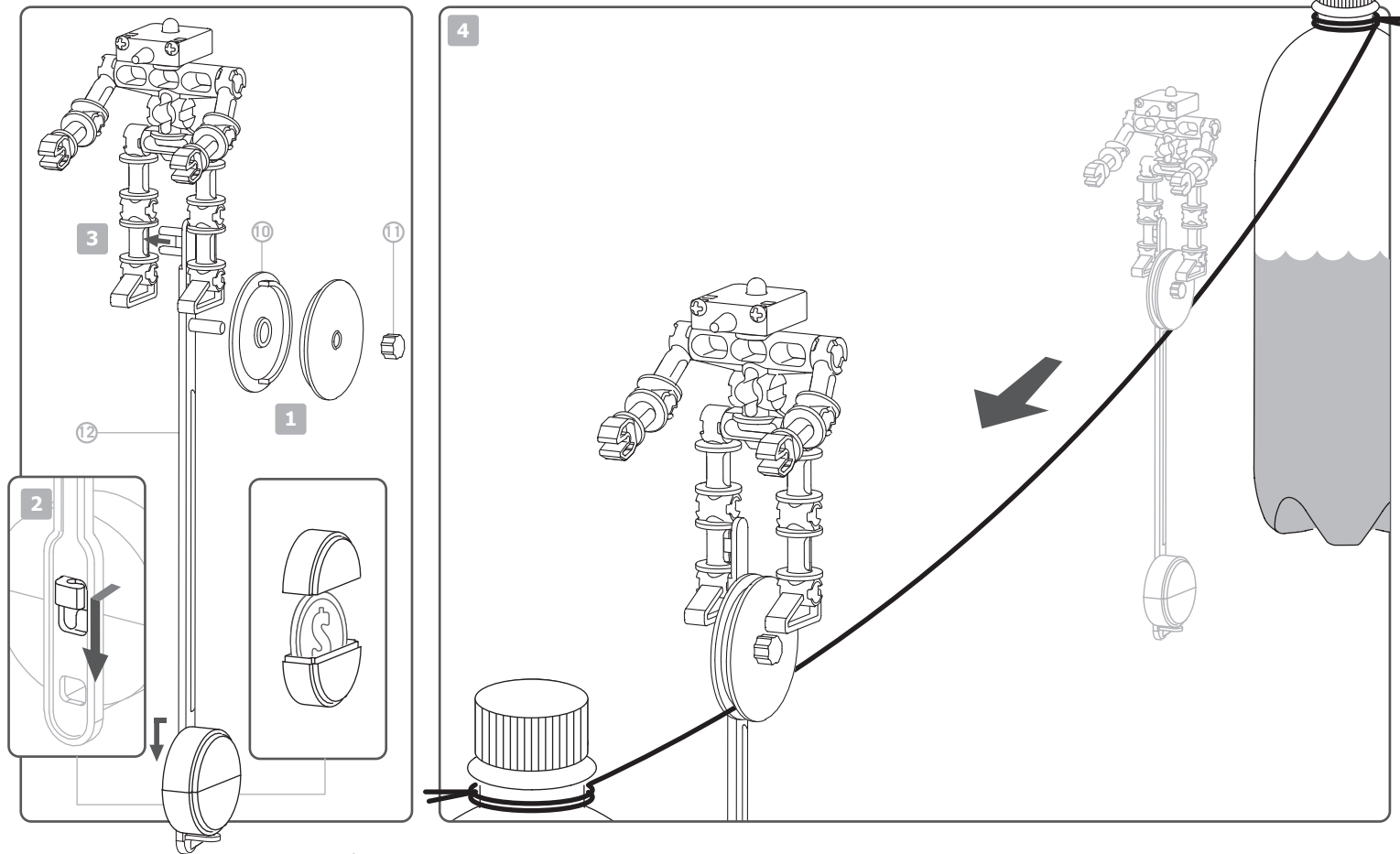


1. Assemble the robot. Push the head (Part 1) onto the body (Part 3), push the arms (Part 4) onto the shoulders, and push the legs (Part 5) onto the hips. Tighten the two screws (Part 2) into the robot's head, to become the robot's eyes.
2. Assemble the balancing bar. Put one or two coins into each weight capsule set (Part 7) and close the capsules. Make sure you put the same coins into each capsule, so that the two capsules weigh exactly the same, or the robot will not balance properly. Slot the weight capsules onto the ends of the arched bar (Part 6).
3. Assemble the stand. Push the stand (Part 9) onto the stand base (Part 8).



4. Push the centre of the balance bar into the slots in the robot's hands. The connection should be quite tight, but you should still be able to adjust the angle of the bar.
5. Adjust the balance bar so that the weight capsules are below the robot's feet. Can you balance the robot with the end of its nose resting on the stand?
6. Turn the robot upside down and adjust the balance bar so that the weight capsules are below its head. Can you balance the robot with its antenna on the stand? Explore other ways of balancing the robot, such as on its feet and on its hands. Try each trick with different numbers or sizes of coins. The stand is not the only stage your robot can perform on. You can turn your fingertips, toes, desk, drawers, drinks bottles, or even pencils into your own stage for the robot's balancing act.

D. UNICYCLE TRICK



1. Push together the two halves of the wheel (Part 10). Push the wheel onto the pin on the stand (Part 12). Secure the wheel with the wheel lock (Part 11).
2. Take one of the weight capsules from the balance bar. Fit the hook on the capsule to the hole in the unicycle stand, at the opposite end of the wheel. The pin on the stand should fit into the slot at the bottom of the weight capsule.
3. Push the pin at the end of the unicycle stand into the holes in the lower part of one of the robot's legs.
4. The unicycle needs a gently sloping string to run on. Attach the two ends of the string (Part 13) to objects of different heights. You can use drinks bottles filled with water, the backs of chairs, or bedposts. Ask a friend to help you with this trick by catching the robot at the end of its run along the string. Place the unicycle's wheel on the string at the highest end, with the robot above the string and the weight capsule hanging underneath. Release the robot and watch it ride down the string! Also, try changing the slope of the string and the number of coins inside the weight capsule to test how these factors affect the speed of the unicycle.

E. TROUBLESHOOTING

- If the robot does not balance, make sure the weight capsules are hanging under the part of the robot that you want the robot to balance on. You could also try adjusting the angle of the balance bar.
- If the robot does not move along the string, make sure the wheel is turning freely, and that the string is steep enough to make it run.

F. HOW IT WORKS

All objects, such as this robot, have a point on them called the centre of gravity. The centre of gravity is where the weight of the object is primarily concentrated. When an object balances, its centre of gravity is vertically above or below the point where the object is balanced. The lower down that an object's centre of gravity is, the more stable the object is. The robot's centre of gravity is in the centre of its hips. But when you put the balance bar on the robot, its centre of gravity moves to a point below its feet. This makes it balance easily on its nose, head, feet or hands. The same thing happens when you add the weight capsule to the unicycle.

G. FUN FACTS

- When you are standing up straight or lying flat, your centre of gravity is in the middle of your tummy.
- When you stand up straight with your feet together, you stay balanced because your centre of gravity is vertically above your feet. If somebody gives you a push, your centre of gravity is no longer over your feet, and you will topple over.
- A tight-rope walker stays in balance by keeping his or her centre of gravity directly above the weight.
- Tight-rope walkers often carry long, flexible poles in their hands. The pole helps a tight-rope walker by making his or her centre of gravity lower.
- The Leaning Tower of Pisa doesn't fall because if you drew a vertical line down from its centre of gravity, that line would fall within its base. It is believed that when the tower leans further and the line from its centre of gravity passes out of its base, it will fall down.

H. QUESTION & COMMENTS

We value you as a customer and your satisfaction with this product is important to us. If you have comments or questions, or you find any part of this kit missing or defective, please do not hesitate to contact our distributor in your country. You will find the address printed on the package. You are also welcome to contact our Marketing Support Team: Email: infodesk@4m-ind.com, Fax (852) 25911566, Tel: (852) 28936241, Web site: WWW.4M-IND.COM