Art-Making Robot ("scribble-bot")

For this activity you will need:
- 1 small motor with wires and clips attached
- 1 AA size battery
- 1 battery holder
- A short length of plastic with holes in it
- A paper cup
- Gaffer tape, rubber bands and zip ties
- Washable markers and a giant piece of paper
- Various other materials and tools

Video instructions can be found here:

https://tinyurl.com/ync3dved

Directions:

1. Insert the AA battery into the battery holder. Make sure the flat side of the battery is touching the spring in the battery holder.
2. Use a small piece of tape to make a flag and attach it to the spindle on the motor. This will help you see if the motor is spinning when it’s connected to the battery holder.
3. Clip one wire to one of the metal pieces on the battery holder. Hold onto the motor with one hand. Then, clip the other wire to the other metal piece on the opposite side of the battery holder. Your motor should spin when everything is connected. Unclip one wire to turn off the motor. Remove the piece of gaffer tape from the spindle.
4. Use a multi-cutter to cut a small length of plastic with a few holes in it (four holes is a good number). Trim off any rough edges. Slide the motor’s spindle through one of the holes in the plastic piece. Clip both wires to the battery holder as in step 3. The motor should move around a lot. Unclip one wire from the battery holder to turn off the motor.
5. If the wires are in the way of the spindle and plastic piece, they may not spin. Use a zip tie or a piece of tape to hold the wires out of the way so that the spindle can spin.
6. Use gaffer tape to attach the motor to the body of your scribble-bot. (An upside-down cup works well as the body of your scribble-bot.) Make sure the spindle can spin freely without hitting anything. Attach the battery holder to the body of your scribble-bot with gaffer tape.
7. Select a few markers and attach them to the body of your scribble-bot. You can attach them to the inside or the outside of the paper cup.
8. Make sure your scribble-bot is stable. If it tips over easily, rearrange the markers or the battery holder until it is stands upright without tipping over.
9. Roll out a large piece of paper onto the floor and tape down the edges. Un-cap the markers of your scribble-bot. Clip one wire to each end of the battery holder to turn on the motor. Set your scribble-bot down on the paper and watch it create its of work of art!
10. Decorate your scribble-bot with pipe cleaners, googly eyes, and stickers to make it unique!

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What’s Happening:

When you attach something off-center (or asymmetrical) to the motor’s spindle and turn on the motor, the motor vibrates and wiggles. This makes the scribble-bot wobble and move around. Try attaching different things to your motor’s spindle. Can you make it vibrate faster? Can you make it vibrate slower? Keep experimenting to see what kinds of patterns your scribble-bot can draw on its own!