

FREE DIGITAL DOWNLOAD

DIY Smartphone Speakers

You Will Need:

- 1 empty toilet paper roll (or a paper towel roll cut in half)
- 2 plastic or paper cups
- Scissors or craft knife (ask an adult for help)
- Pencil or marker
- Washi Tape (Optional)
- Smartphone

Instructions:

1. Mark the Phone Slot

➤ Use a pencil to trace the bottom of your smartphone onto the top center of the toilet paper roll. This will be the dock where your phone sits.

2. Cut the Slot (Ask an Adult)

➤ Have an adult carefully cut out the traced rectangle so the bottom of the phone fits snugly into the roll.

3. Attach the Cups

➤ Have an adult trace and cut a hole near the base of each cup, just wide enough to fit each end of the toilet paper roll.

➤ Slide the ends of the roll into each cup so the roll forms a “bridge” between them.

➤ You can tape the connections to make them more stable.

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**** Science projects must be done with parental supervision ****

Science Project is from STEM Activity Pages For Kids 8-14 Who Love To Learn



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4. Decorate Your Speakers (Optional)

➤ Use the Washi tape to decorate your speakers. Get as creative as you want.

5. Test Your Speakers

➤ Place your phone in the slot with a song or video playing. Listen as the sound becomes louder and more focused – like a homemade speaker system.

What's Happening:

This DIY speaker uses the natural properties of sound waves. The sound from your phone travels into the roll, then spreads through the cups. The shape of the cups helps amplify the sound, just like how a megaphone works. There's no electricity involved – just smart use of acoustic engineering.

Safety Tips:

- Always get adult help when using scissors or a craft knife.
- Make sure the phone fits snugly without forcing it – avoid damaging your phone.
- Test the speaker in a quiet room to hear the best results.

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STEM Activity Supplies For Hands-on Learning

This carefully curated Supply List features affordable, high-quality materials to help bring science, technology, engineering, and math activities to life. Many of the STEM projects and experiments featured in the **Free Science Projects Downloads** come from the **STEM Activity Pages** and **Ultimate Activity Pages for Kids** – like the *DIY Lava Lamp*, *Invisible Ink*, *Growing Crystals*, and *DIY Smartphone Speakers* – and can be completed with items you may already have at home. However, if you're missing a few supplies, you'll find everything you need here. Each product has been selected for its **great reviews** (4.5 Stars or higher), **affordability** (under \$10), and **versatility across multiple experiments**, ensuring you get the most out of every purchase while keeping learning fun and budget-friendly.

Food Coloring

Food Coloring Set - 12 Color Food Grade Vibrant Liquid Food Dye Tasteless Liquid Color - 0.35 Fl. oz (10 ml) Bottles

Comes with 12 vibrant color highly concentrated edible food coloring in a wide range of bright vivid colors. Includes: Lemon Yellow, Sunset Yellow, Grass Green, Violet, Grape Purple, Navy Blue, Sky Blue, Red, Brown, Pink, Green and Black.

Buy Now At <https://amzn.to/47ijis4>

Washi Tape

Mr. Pen- Washi Tape Set, 21 Rolls, Assorted Sizes, Floral Washi Tape

Set includes 21 washi tape in assorted sizes and designs. Assorted Sizes - 3 different washi tape sizes are perfect for different scenarios. 0.6 inch (1.5cm) wide x 7 tapes; 0.3 inch (8mm) wide x 7 tapes; 0.12 inch (3mm) wide x 7 tapes.

Buy Now At <https://amzn.to/4niHLn6>

Glass Jars

BEWAVE Glass Mason Jars, 16oz Clear Glass Jars with Lids 4 Pack

Set of 4 jars and silver lids, free chalkboard stickers, and one pen for labeling, marking your own jars!

Buy Now At <https://amzn.to/4o2UMLL>



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STEM Activity Supplies

For Hand-on Learning

Popsicle sticks

60 Pieces Jumbo Craft Sticks, 8 Inch Natural Wooden Popsicle Sticks

These super jumbo craft sticks are not just for crafts; they serve as a great learning tool for children, promoting fun and creativity.

Buy Now At <https://amzn.to/3WFzPSd>

Craft Knife

Fiskars SoftGrip Detail Craft Knife - 8" Exacto Knife for Crafting - Multi-Use Exacto Blade Included with Protective Cover

Ideal for precise cutting of a wide variety of materials, including paper, cardstock, thin plastic, photos, and canvas.

Buy Now At <https://amzn.to/47Ddvi5>

String

FJiJi Craft White Cotton String Butchers Cooking String Twine 2mm 656ft for Cooking and Crafts

Cotton string measuring 2mm in diameter and 656 feet/200 meters in length, cotton string is thin yet strong enough to handle any task.

Buy Now At <https://amzn.to/4hqzGLD>

Straws

FGUSTO [200 Pack] Striped Paper Drinking Straws –Food-Safe Ink, and Multi-Layered for Long-Lasting Use – Vibrant Assorted Colors

Perfect Size & Bulk Value: Each straw measures 7.75 inches long & 0.25 inches wide, fitting mason jars, tumblers, and cups. With 200 straws per pack, you'll always have a stylish, eco-friendly drinking solution on hand!.

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STEM Activity Supplies For Hand-on Learning

Ballons

RUBFAC 120 Balloons Assorted Color 12 Inches Rainbow Latex Balloons, 12 Bright Color Party

The balloon kit includes 120 vibrant 12-inch balloons in 12 rainbow colors, 10 pcs per color.

Buy Now At <https://amzn.to/3KYXnyR>

Glue

Elmers Liquid School Glue, Washable, 4 Ounces, 2 Count

School glue offers a No Run Formula that stays where you put it. The plastic bottle is easy to squeeze for easy dispensing. The no-run formula provides a strong bond for most porous materials. School glue dries fast and clear. Glue is safe, nontoxic, and washable, so accidental messes mean easy cleanup.

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