

DIY Smart Phone Projector

<https://www.stevespanglerscience.com/lab/experiments/homemade-projector/>

<https://thestemlaboratory.com/smart-phone-projector/>

Supplies Needed:

- A small cardboard box
- A magnifying glass or camera lens
- Scissors
- Tape
- A smart phone



Steps to Build Your Own Projector

- 1) Place the magnifying glass or lens on the front of the box and trace the outline.
- 2) Using scissors or an exacto knife cut a hole in the box slightly smaller than the traced circle. This is so your magnifying glass or lens will fit snugly into the hole created.
- 3) There are two ways to make your phone stand. Both ways you would use a spare piece of cardboard (one of the lid flaps works great) to create a phone stand. You could fold it into a triangle shape on the shorter edge leaving the majority of the length of the cardboard piece intact. Secure the triangle end with a piece of tape. Or you could fold the shorter edge down making a straight vertical ramp like stand. Experiment to find out which one works best.



- 4) Place the phone stand into the bottom of the box. You will place the long edge of your stand under the cardboard flap in the bottom of the box using either the front flap (triangle version) or the back flap (ramp version) depending on which stand design you chose.
- 5) Tape the magnifying glass either inside or outside the box so that the lens is aligned with the hole created in the box in step #2. Experiment to see if it makes a difference in your picture quality.
- 6) Select your movie on your phone and hit pause. Place your smart phone on the stand inside the box. Test to make sure the screen is projecting correctly through your projector and onto a blank wall. You will need to use the screen lock in landscape mode so it stays locked in that position. Now focus the picture by moving the phone either away from or towards the lens by sliding your phone stand in the bottom of the box.
- 7) Once you have the picture focused, hit play, tape up the box, turn down the lights, grab a snack (some popcorn perhaps?), and let the show begin!