CAMERA OBSCURA ROBOT HEAD

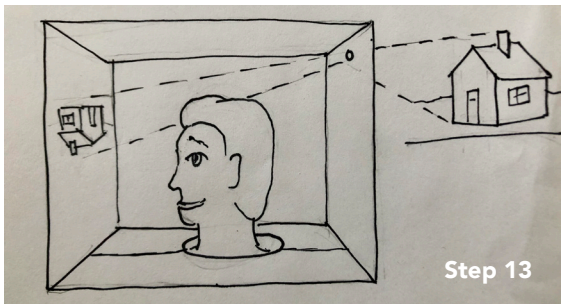
CREATIVITY KITS

OAKWOOD ARTS

VISUAL ARTS CENTER OF RICHMOND

Photography Week | Week of 5/25/2020 | For K-5 Students

CREATE A CARDBOARD ROBOT HEAD THAT DOUBLES AS A SPY CAMERA. USING A SECRET PINHOLE AND THE POWER OF SUNLIGHT, YOU WILL BE ABLE TO SEE WHAT'S BEHIND YOU!



STEP-BY-STEP INSTRUCTIONS

1. To start building your spy camera obscura, put your box together by sealing just one side with black tape. Leave the other side open.

2. On the shorter side of the box, mark a dot 2 inches down from the closed end of the box, and 4.5 inches from each side (in the center)

3. Take your pencil and poke a hole (called the "pinhole") through that dot from the inside of the box. Make sure you have a clean smooth hole on both sides.

4. INSIDE the box on the side opposite the pinhole, cover the whole side with a white sheet of paper. This will be the "screen" for your camera. You will see the image of the outside world project onto that white sheet of paper from the light that will come through the pinhole.

5. Now you will make a hole for your head so that you can wear your camera obscura.

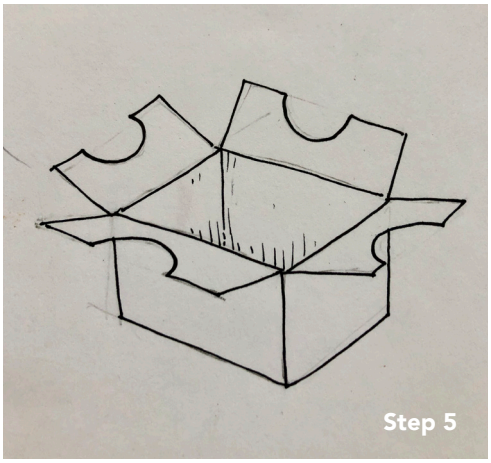
6. Close the side of the box you haven't taped and use the paper plate in your kit to trace a circle in the center for your head to go through. Make sure you trace on both sets of the cardboard flaps, inner and outer.

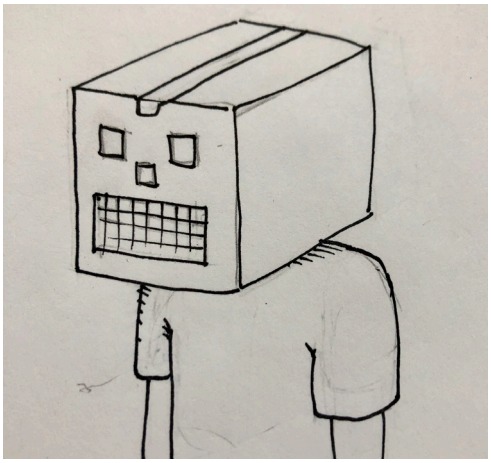
7. Cut along the traced circle on both sets of the flaps to make a hole.

MATERIALS NEEDED:

- **12x12x9 cardboard box**
- **Glue stick**
- **Construction paper (5 sheets, mixture of assorted colors and black)**
- **Scissors**
- **Paper plate**
- **Black tape**
- **Three markers (any color)**
- **A pencil**
- **Dark colored t-shirt, scarf or sweatshirt**

Make your pinhole this size.





8. Put the box over your head and look inside to see if you find any light leaking through the cardboard. Use your remaining black tape on the outside of the box to cover any light coming through any places other than your pinhole.

9. Using your construction paper and markers, decorate your robot. Put the face on the side opposite your pinhole so people won't know you can see them from the back of your head!

10. Put on a dark-colored sweatshirt or t-shirt only around your neck (don't put your arms through the sleeve, so it is just around your neck like a scarf).

11. Go outside.

12. Put the box on so the pinhole is behind your head.

13. Tuck your "scarf" in between your neck and the box, even up into the robot head so that no light leaks into the box.

14. Make sure your head isn't blocking the pinhole. Stand so the sun is behind you.

You will now see an image of whatever is behind you projected on the inside of the box!

DID YOU KNOW?

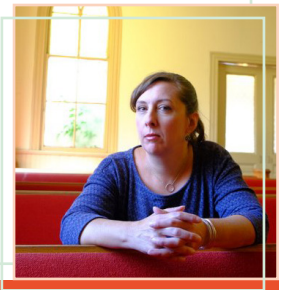
The use of the pinhole to make a "**camera obscura**" (which means "dark chamber") goes back to 500 BCE. For centuries, they were used for viewing eclipses of the sun without hurting the eyes, and to help artists create tracings for more realistic paintings. In 1826, French inventor Joseph Nicéphore was credited for inventing photography when he finally figured out how to fix an image on light sensitive material.

WAIT, WHY IS THE IMAGE UPSIDE DOWN???
You tell us...Comment on our instagram or send us an email to info@oakwoodarts.org

WE WANT TO SEE WHAT YOU MAKE!

Share your artwork on Instagram or Facebook and use **#rvacreativitykits** so we can see your work! You can also tag @oakwoodarts and @visartsrva.

SOLs Covered: Science K.1, 1.1, 2.1, 3.1,4.1, 5.1
Art K.1, 1.1b, 2.1b, 3.1a, 4.1a, 5.1b



Shared by: **Shannon Castleman**

MAKE YOUR OWN KALEIDOSCOPE

CREATIVITY KITS

OAKWOOD ARTS

VISUAL ARTS CENTER OF RICHMOND

Photography Week | Week of 5/25/2020 | For K-5 Students

CREATE A COLORFUL KALEIDOSCOPE USING EVERYDAY MATERIALS!

Taken with an iPhone using a kaleidoscope application

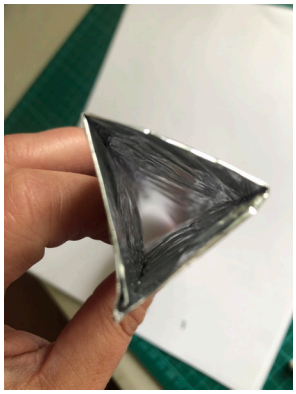
STEP-BY-STEP INSTRUCTIONS

1. Find an empty cardboard tube from a roll of paper towels or tape two empty toilet paper rolls together.

2. Use your glue stick and cover one side of the cardstock (included in the kit) with glue, and carefully cover it with the foil, keeping the shiniest side facing up. Be careful to not wrinkle the foil too much.

3. Fold the excess foil around the back, and then glue the edges down on the backside. Flip it over and smooth out the foil.

4. Now use your ruler to divide your sheet of cardstock covered in foil into 3 even sections that are each 1.25 inches wide. Do this by lining your ruler up with the edge of the foil and draw a straight line with pencil. Then line the ruler up with the line you drew, and add another straight line on the other side of your ruler.



5. Fold your cardboard sheet along the seams to form a triangle.

6. Use a piece of tape to tape the seam of the triangle to hold it in place.

MATERIALS NEEDED:

- **A cardboard tube from a roll of paper towel (or two toilet paper rolls)**
- **A piece of heavy cardstock or light cardboard (4.5 x 8.5 inches)**
- **Foil**
- **Ruler**
- **Scissors**
- **A pencil**
- **Silver tape**
- **Square of construction paper**
- **Square of wax paper**
- **Square of plastic wrap**
- **A rubber band**
- **Some shiny things**

7. If you have access to a cell phone with a camera, try putting the foil triangle around the lens, and see what it looks to photograph through it.

8. To finish the kaleidoscope (no camera needed) cut a paper towel roll to the same length as your triangle. Then, slide the foil triangle into the paper towel roll (or two toilet paper rolls taped together).

9. Now you need to create a peephole by turning the paper towel tube on one end, standing straight up. Trace a circle around the end of the tube on black construction paper.

10. Poke a hole through the center of the circle using scissors or a sharp pencil, and make it large enough so you can see through it. Tape this circle over one end of the tube.

11. Cut out a four-inch square of plastic wrap. Place the square of plastic wrap over the other end of the tube. Use your fingers to poke it down into the plastic triangle, until it forms a little pouch.

12. Fill the pouch with beads, sequins, and confetti. Anything small and shiny will do the trick, but translucent objects are best. You also want different shapes and sizes.

13. Place a square of waxed paper over the pouch and around the cardboard tube, sealing in the beads and sequins.

14. Stretch a rubber band over both the waxed paper and the plastic wrap. Make sure it's on tight so nothing spills out.

15. Decorate the outside of your kaleidoscope.

WE WANT TO SEE WHAT YOU MAKE!

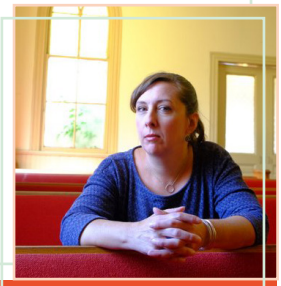
Share your artwork on Instagram or Facebook and use **#rvacreativitykits** so we can see your work! You can also tag @oakwoodarts and @visartsrva.

SOLs Covered: Math 1.11, 2.12a, 3.17, 4.8a, 5.8a
Art K.1, 1.1b, 2.1b, 3.1a, 4.1a, 5.1b

DID YOU KNOW?

The term "**photography**" means to draw with light! You can use your kaleidoscope to explore your surroundings to experiment with light, and see everyday objects and your environment in new ways. Keep an eye out for all the cool repeating patterns and new forms you will see!

Taken with an iPhone using a kaleidoscope application



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