



VIRTUAL INSTRUCTION GUIDE

Workshop: *LEGO® Tripod Foundations*

Teaching Artist: Allie Spicer

Learn how to make a camera tripod using LEGO® and image capturing techniques. You will also be introduced to the photographer Nikki S. Lee.



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OBJECTIVES:

You will learn:

- The history of tripods in Chinese and Greek culture.
- How to engineer a 3D free-standing tripod out of LEGO® blocks for use in future photography and video projects.
- Mathematical processes including basic division.
- Technical camera-related terms, including *angle*, *frame*, *panning* and *viewfinder*.
- How to evaluate the weight, scale, and structure of a 3D free-standing form.
- About the work of photographer Nikki S. Lee.

MATERIALS:

- one smart device with a camera (phone or tablet)
- one LEGO® flat base, at least 5" x 5"
- Eight LEGO® standard-sized blocks - these will have eight prongs on top and three open holes in the bottom



DIFFERENTIATED LEARNING Methods

Instruction is provided in text and video formats, available in both Spanish and English.

You may also work by printing this art-making guide.

YouTube can automatically create closed captions.



Click the [CC] button near the lower right corner of the viewer frame.

Please note: captions are generated by algorithms, so their quality may vary.

Workshop Duration: 25-45 Minutes | ALL LEVELS

A variety of language subtitles are available for each video.



- **For students with hearing or sensory impairments**, a partner can model the art-making techniques using non-verbal actions.
- **For students with limited mobility, assign different eye movements as a method for making creative decisions**, e.g., one blink = yes; looking to the right = move LEGO® to the right.
- **This workshop may be shortened and divided into several parts.**
- **Students with limited hand/eye coordination and/or lack limited mobility may benefit from the assistance of another person to set up the structure.**



BACKGROUND/RESOURCES

You will be introduced to these artists, art histories, movements and/or concepts:

Angle: the specific location at which the camera is placed to capture an image.

Frame: in photography and video, this refers to the visual information available in the camera's viewfinder.

Nikki S. Lee: A female Asian American photographer who documents the fluidity of group identities in the United States.

Panning: rotating a camera left-to-right and/or up-and-down.

Tripod: a three-legged structure. Ceramic tripod vessels were created in 12th-11th century B.C.E. China, as well as in ancient Greece, circa 390 B.C.E.

Viewfinder: The hole or screen you look through to capture an image on your camera.



INSTRUCTION:



Let's first look at the history of how artists began to use **tripods** as art-making tools. The structural concept of a tripod dates back to ancient Greece and ancient China.



Tholos, Delphi Ruins
Ancient Greece



The most well known tripod structure is located in the Delphi Ruins Sanctuary, called the Tholos.

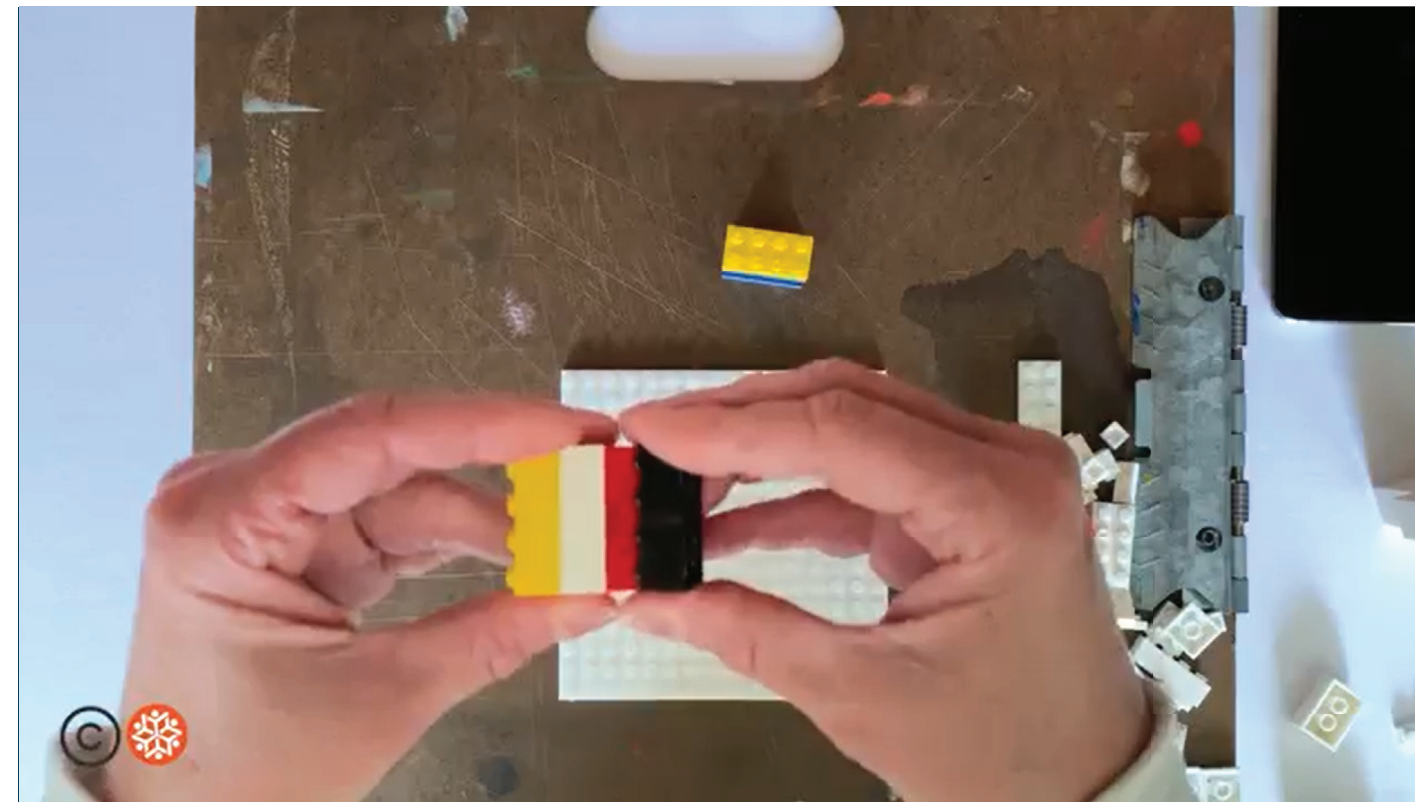


Sir Francis Ronalds
Inventor of modern tripod
1820s

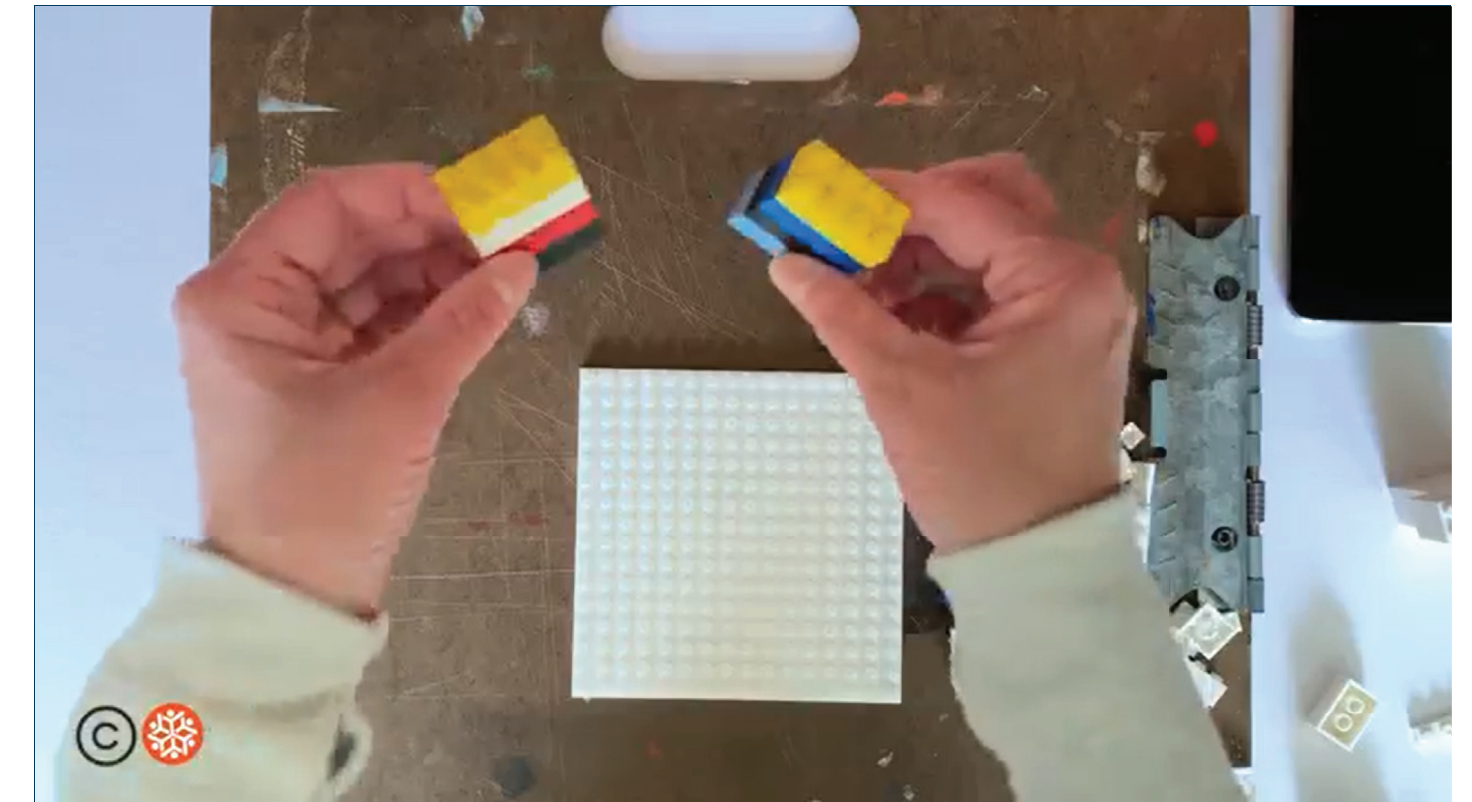
Sir Francis Ronalds is recognized as the inventor of the modern-day camera tripod, created in the 1820s. This is when artists started using a tripod as an art-making tool.



Now, let's start building! The first step is to take four of the standard sized LEGO® blocks and stack them one on top of the other, until you have a vertical column, or a vertical tower.



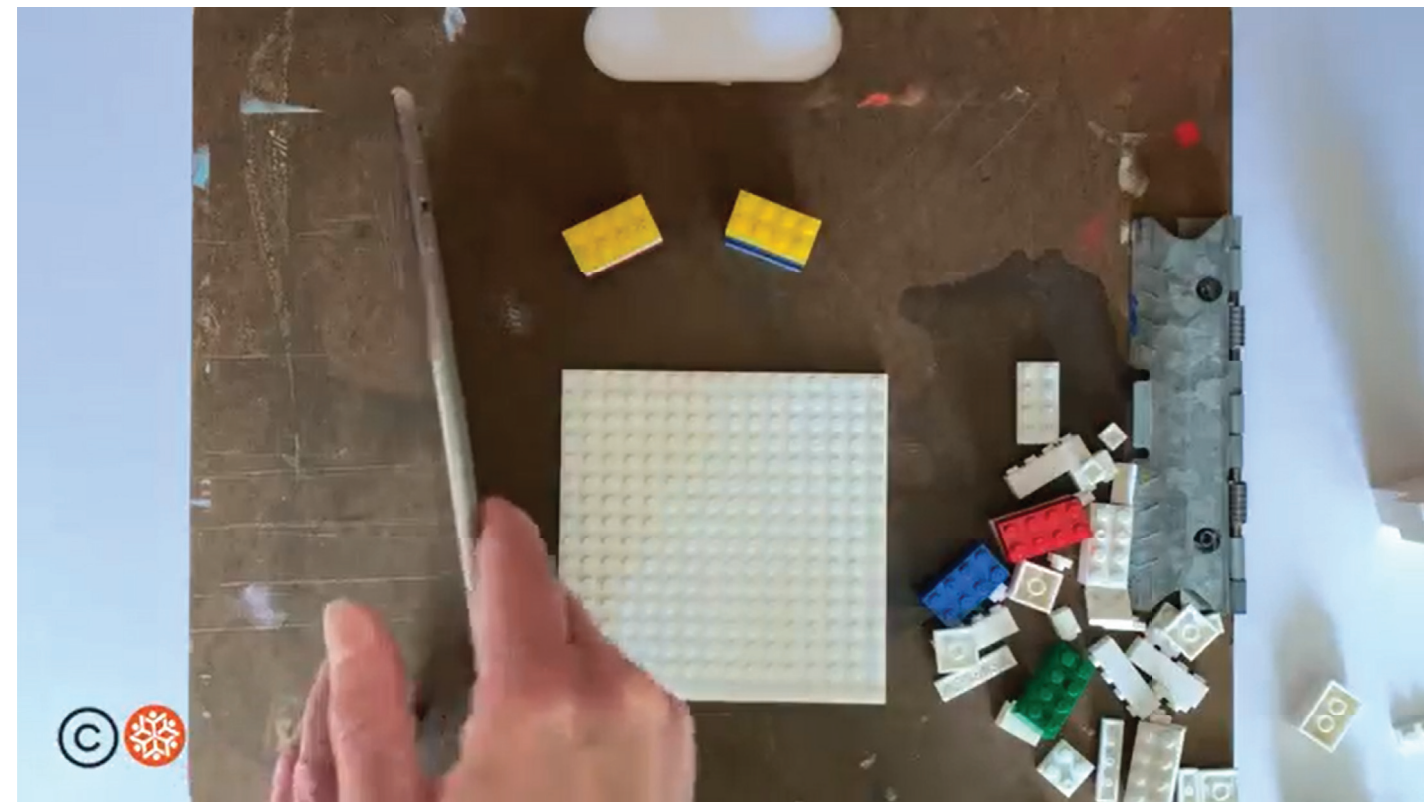
The next step is to take the remaining four standard sized blocks and stack them one on top of the other, until you have created a second vertical column, or a vertical tower.



You should have two free standing towers at this point, each with four blocks.



INSTRUCTION CONTINUED:



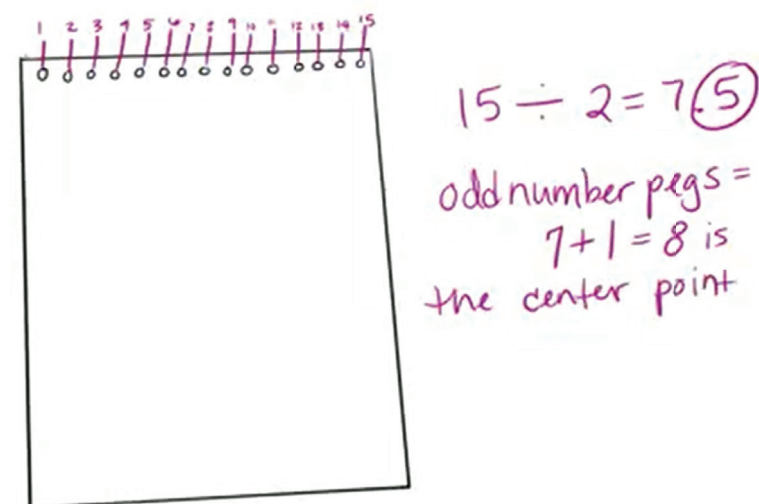
Set these two columns aside for now. We need to create a structure/form that can hold the weight of a smart device while giving it the stability that a professional tripod provides.



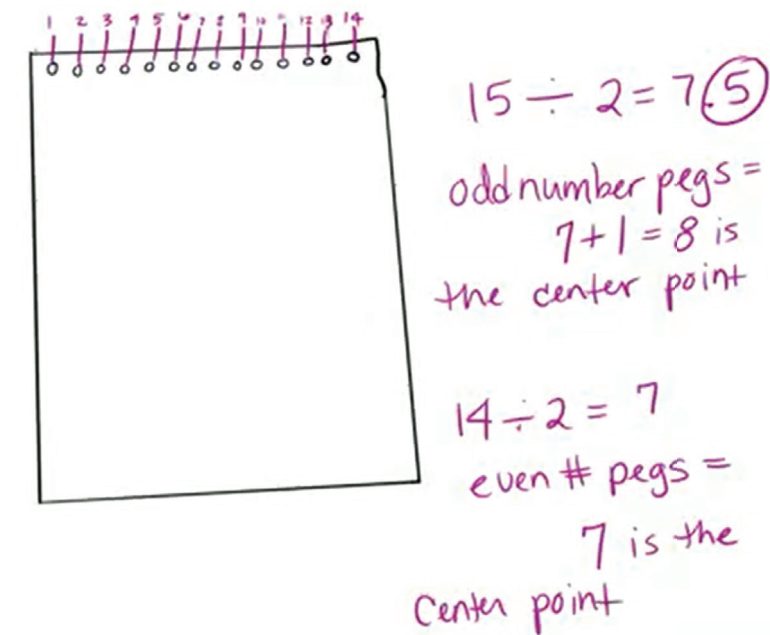
We have created two columns now to support the weight of our smart device but we need a way to keep them in a close distance from one another. This is where the bridge of the base comes in.



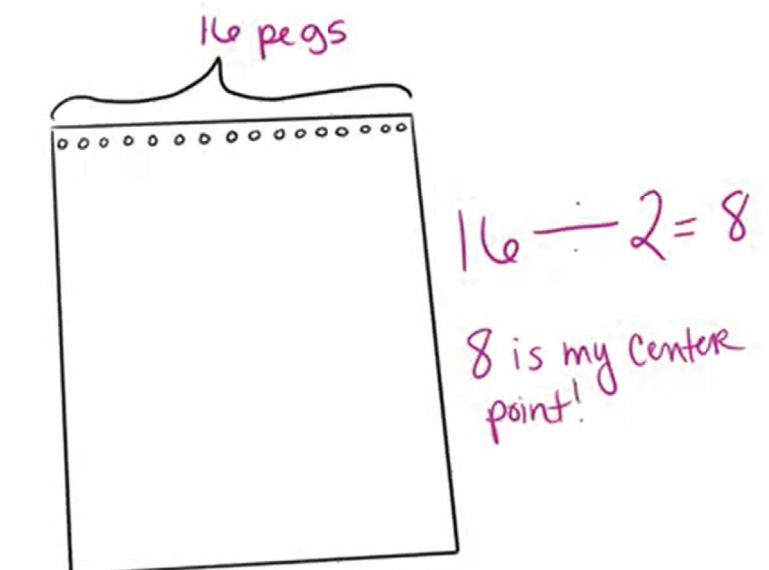
On your flat LEGO® base, you need to find out where the middle is located. From the top edge of your base piece, moving left to right, you will want to count how many pegs there are on the entire width.



Once you know how many pegs there are, divide this number by 2. This is the middle of your base. If you have an odd number, you will end up with a number that is .5. This means that the middle of your base is 1 + the number before the .5 integer.



If you ended up with an even number, that's okay. Just use that number as your center point.



For example, if I count how many pegs I have at the top of my base and I end up with 31, I would count over 16 pegs to find my middle point (15 + 1). If I count how many pegs I have at the top of my base and end up with 30, I will just count over 15 pegs to find my middle point.



INSTRUCTION CONTINUED:

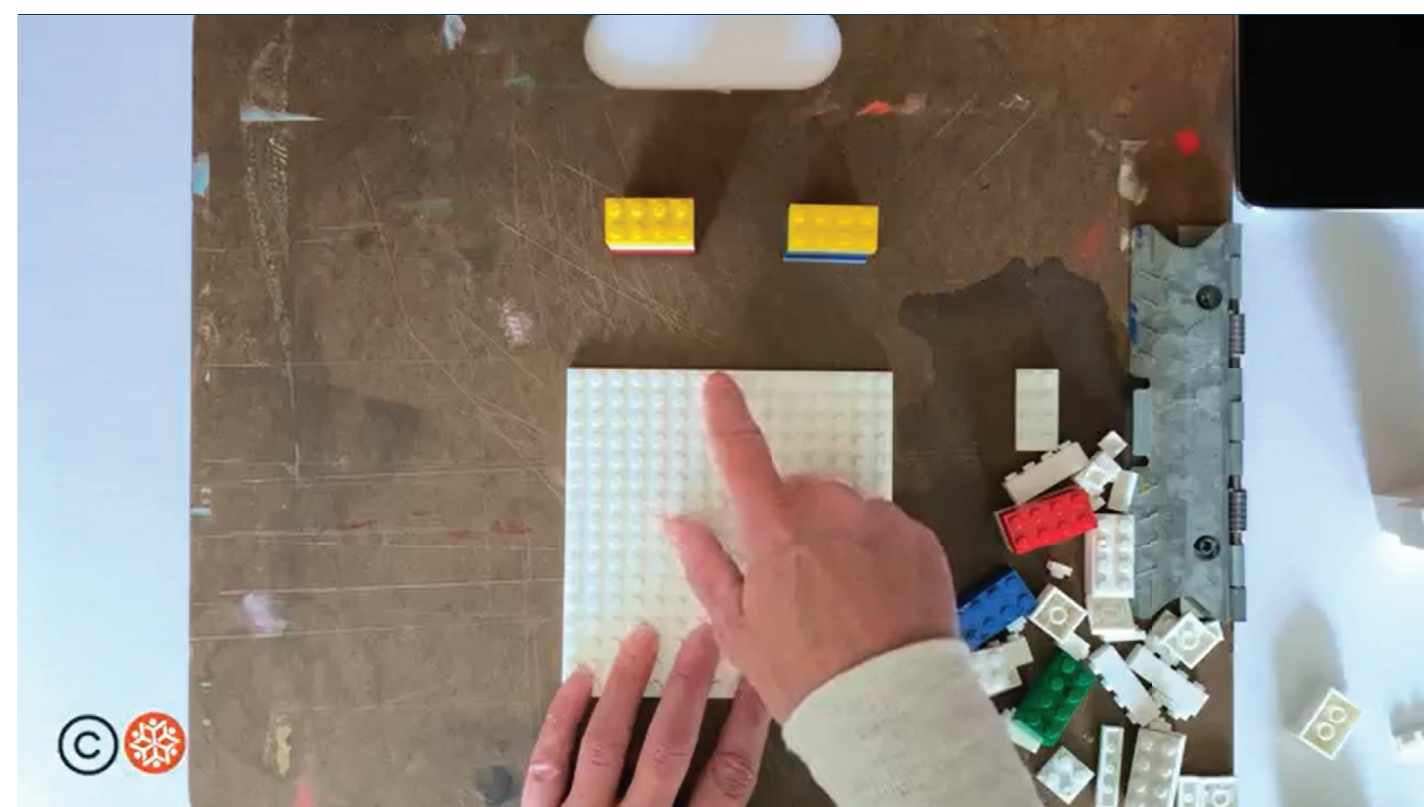
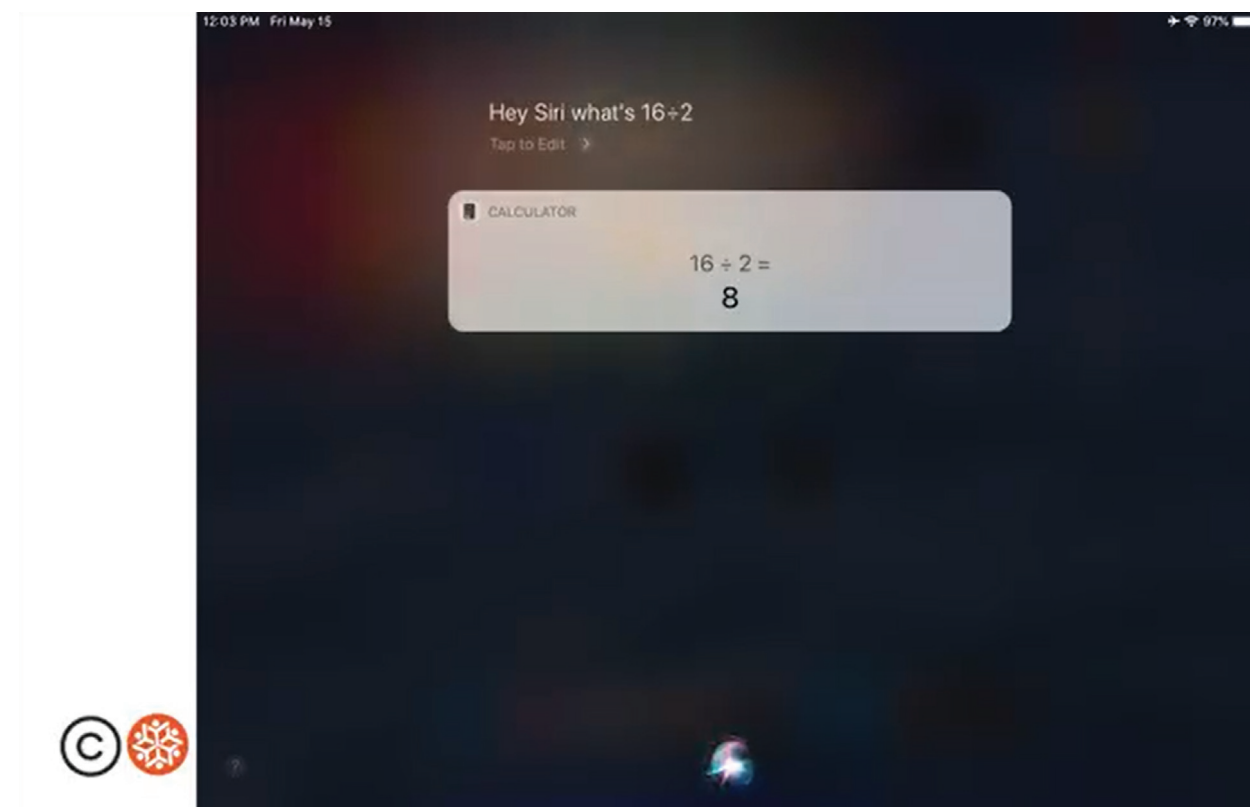


Figure out where your middle point is on the top of your base now. Remember: count how many pegs run horizontal first (left to right) and then divide this by 2.



Then count from left to right that number to find your center point). Ask for help if you haven't learned division yet. You can ask Siri or use the calculator on your smart device, or ask a friend!



From your middle peg, at the top of your base still, count back to the left two pegs and place one of your columns there so all 8 pegs are connected to the base board.



Your first column will take up 2 pegs vertically (up and down).

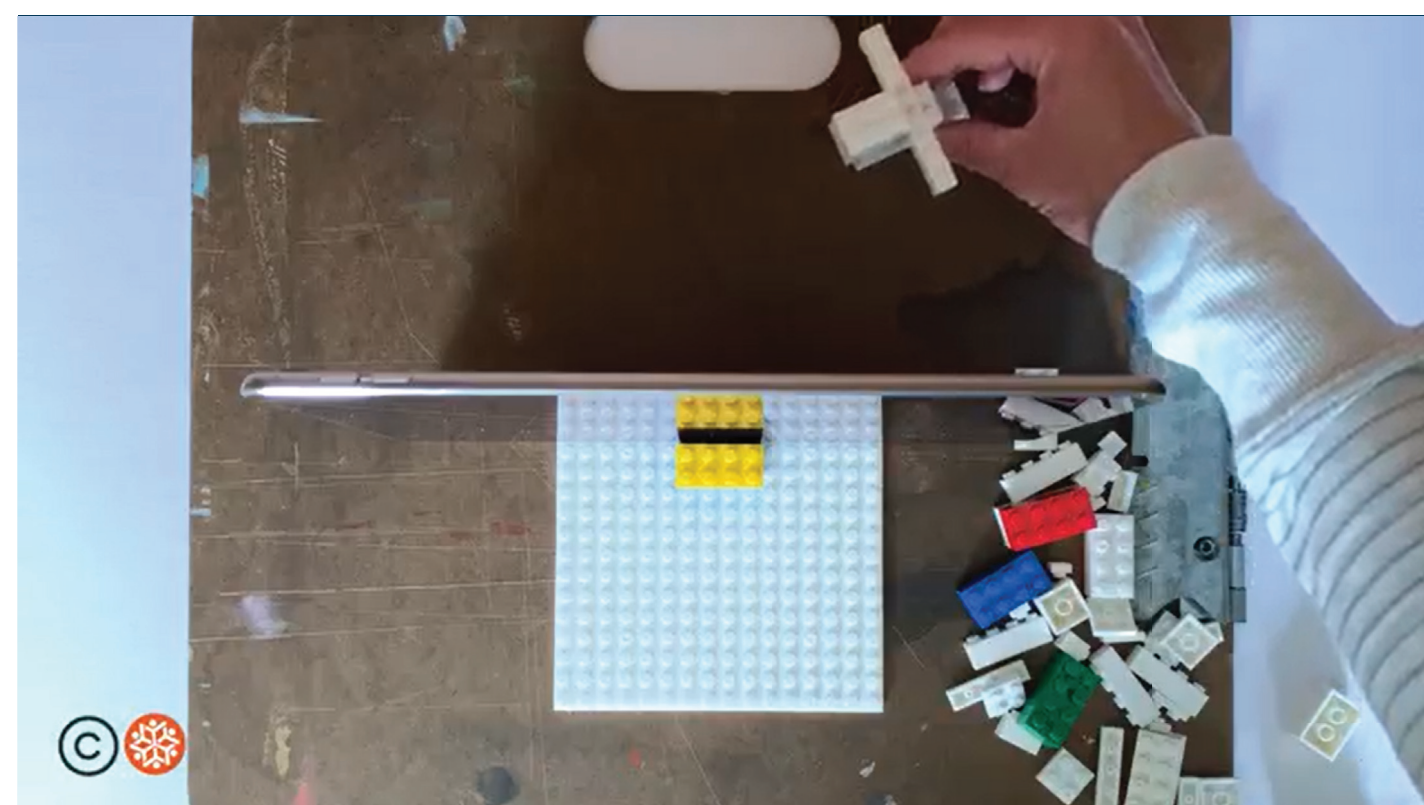


Skip over 1-2 pegs (the full row) and place your 2nd column directly below, having all 8 pegs connecting horizontally and in parallel to your first column. Parallel means running in the same direction and horizontally means side-to-side.

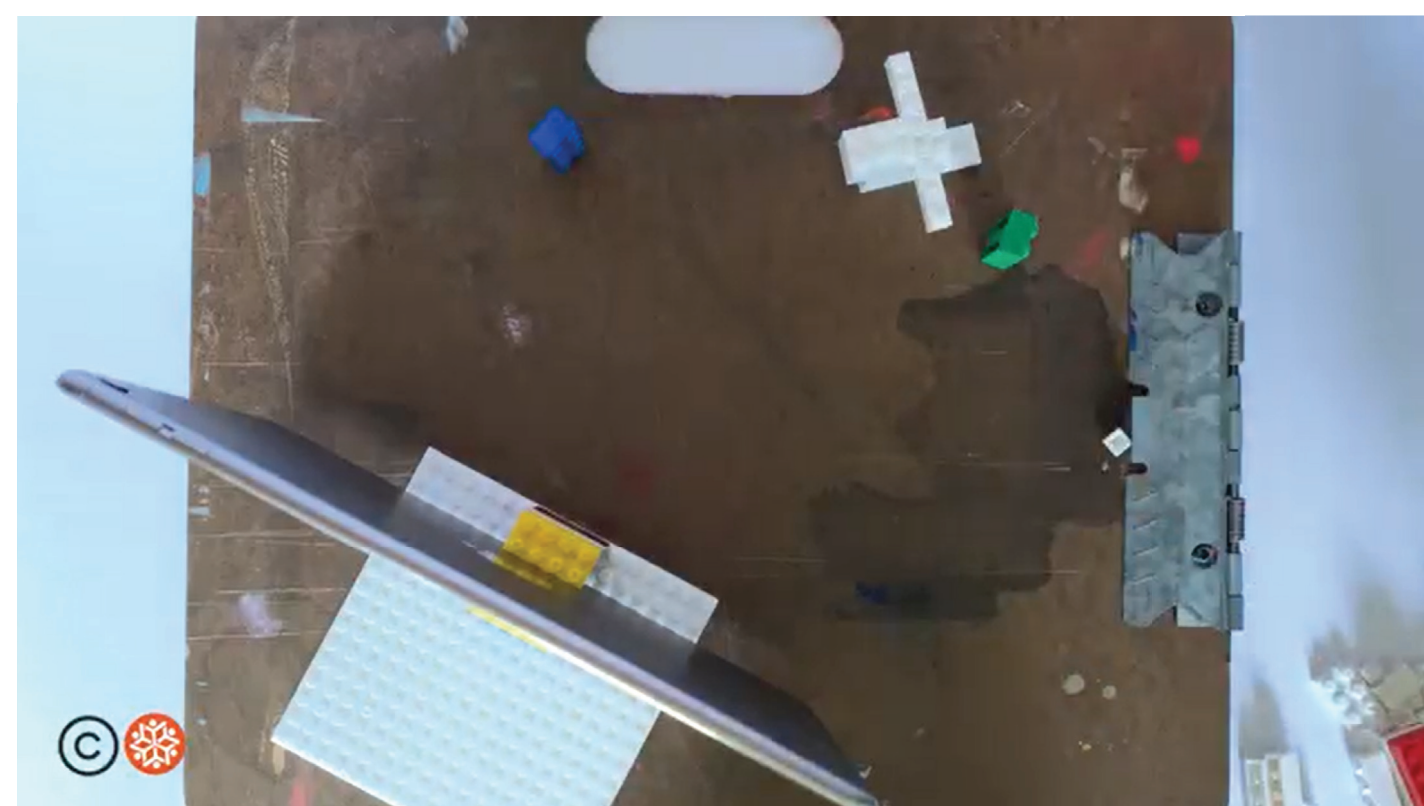


You can now slip in your smart device and test out your new creation! It is important to keep the corner where your camera is located on the top, so no pegs block your camera's frame.

INSTRUCTION CONTINUED:



In this next part, I want to show you a few different filming techniques that you can do with your newly built tripod.



Place your smart device in your newly built tripod. Try setting up a scene of your own with what you have available to you. Maybe use a stuffed animal as a subject or ask another person to participate.



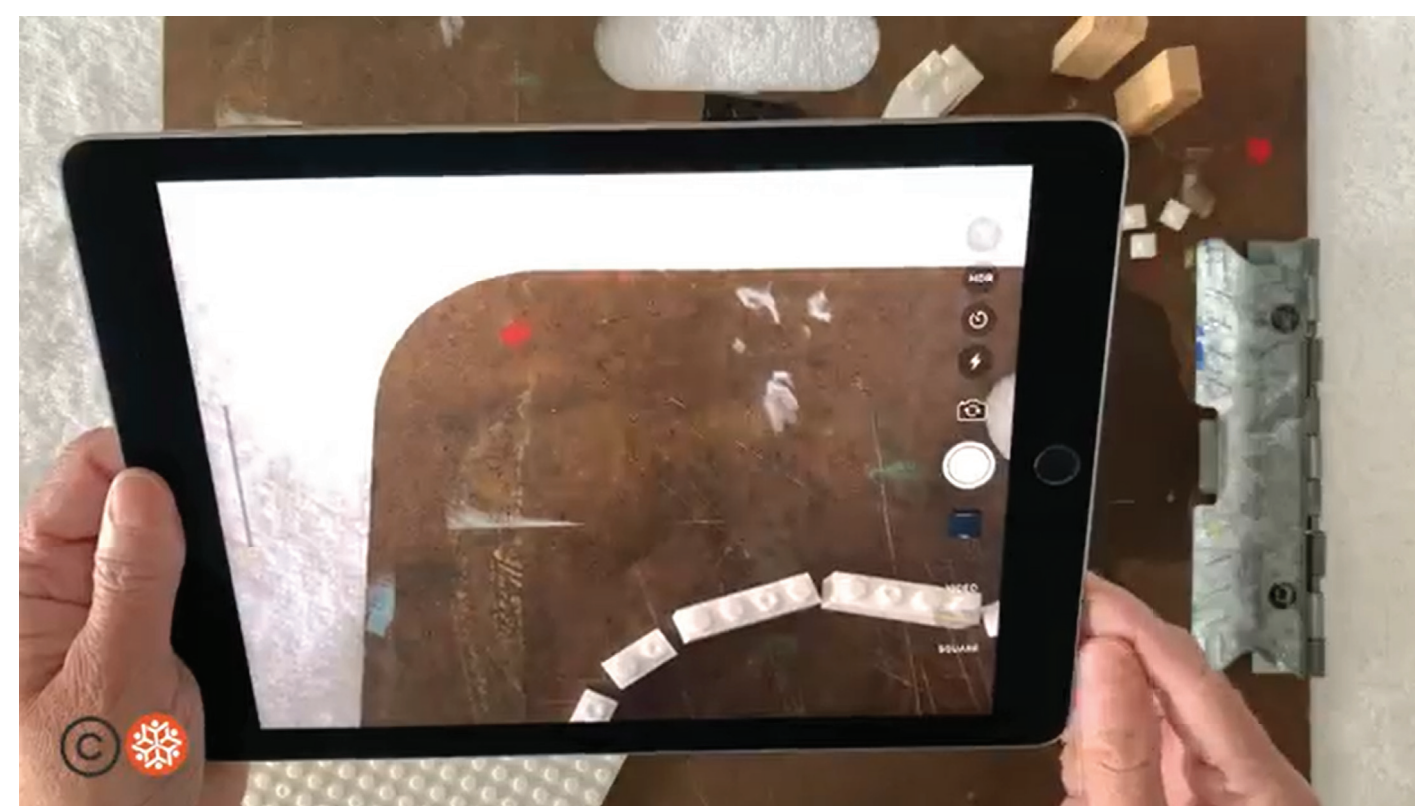
Nikki Lee
The Skateboarders Project #7

First, let's take a look at an artist whose work would not be possible without the use of a tripod. **Nikki S. Lee** is a female Asian-American photographer who documents the fluidity of group identities in the United States.



Nikki Lee
The Yuppie Project #4

She inserts herself into subcultures, playing the role of a member of that particular group. A tripod and a self-trigger capture tool is integral in her practice of constructing a scene that she participates as a subject.



Turn your smart device on.



Select **film-making mode**.



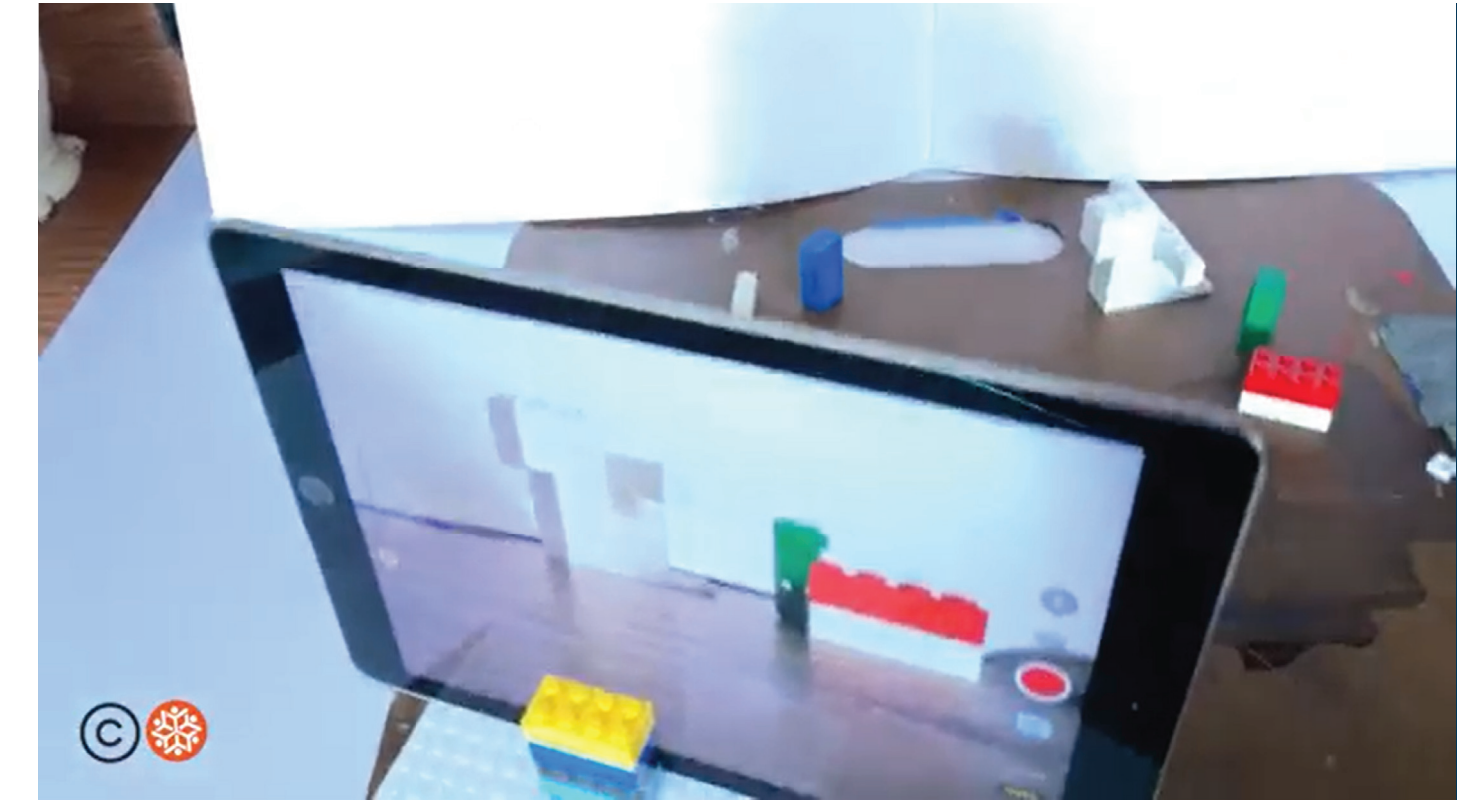
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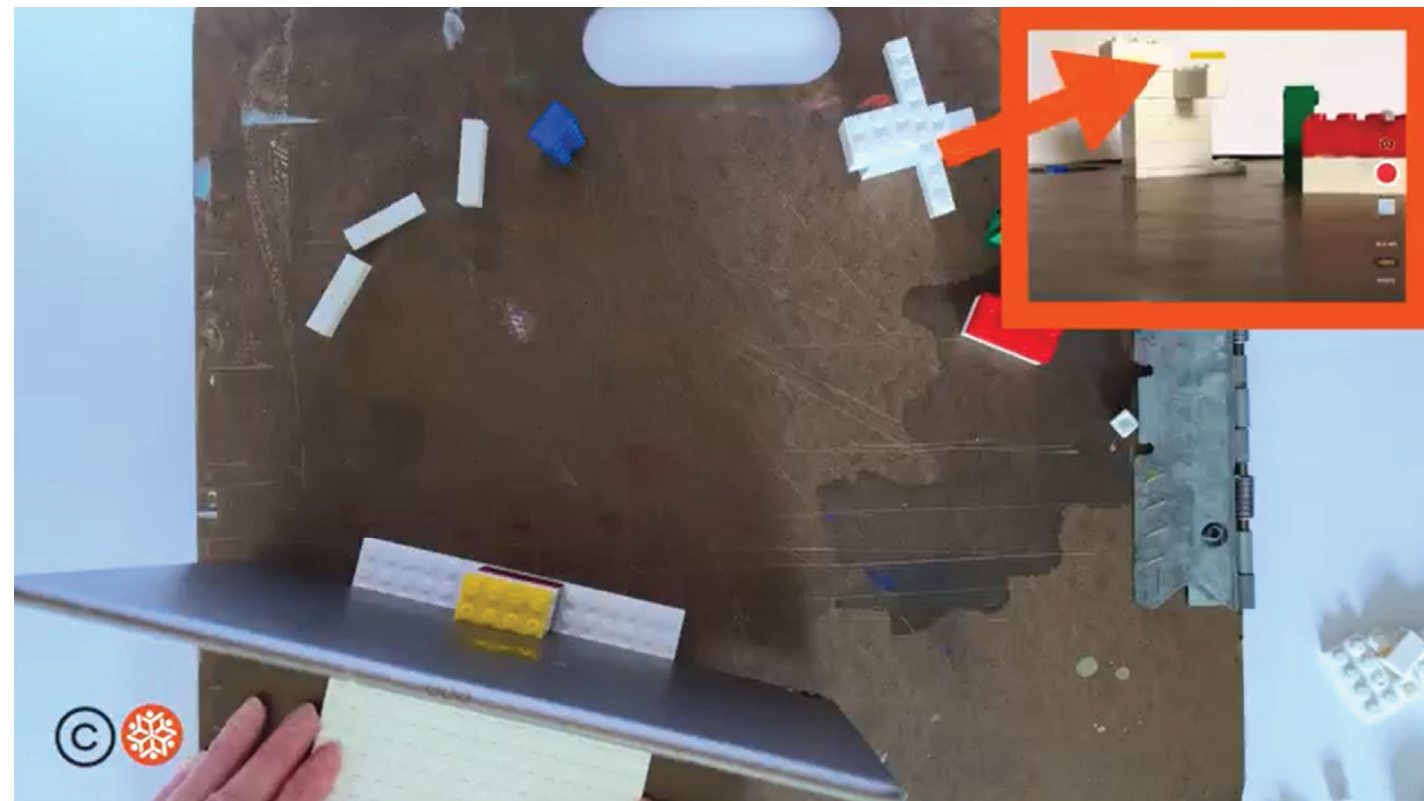
Find an area of your room that has the right lighting for your image capture. Do you want to create a dark, scary scene or a bright, cheery scene? Lighting is everything in photography and film-making.



Think about **angle**, this is the perspective from which you would like your viewer to see your film frame through. Choose your angle and place your tripod on a still surface there.



Next, think about your **frame**. What do you want to see in your camera, do you want to zoom in or out? Some smart devices will allow you to do this.



For iOS devices, set your lighting and focus by holding your finger on the screen until you see **AE/AF lock**. (Not necessary for non iOS devices)



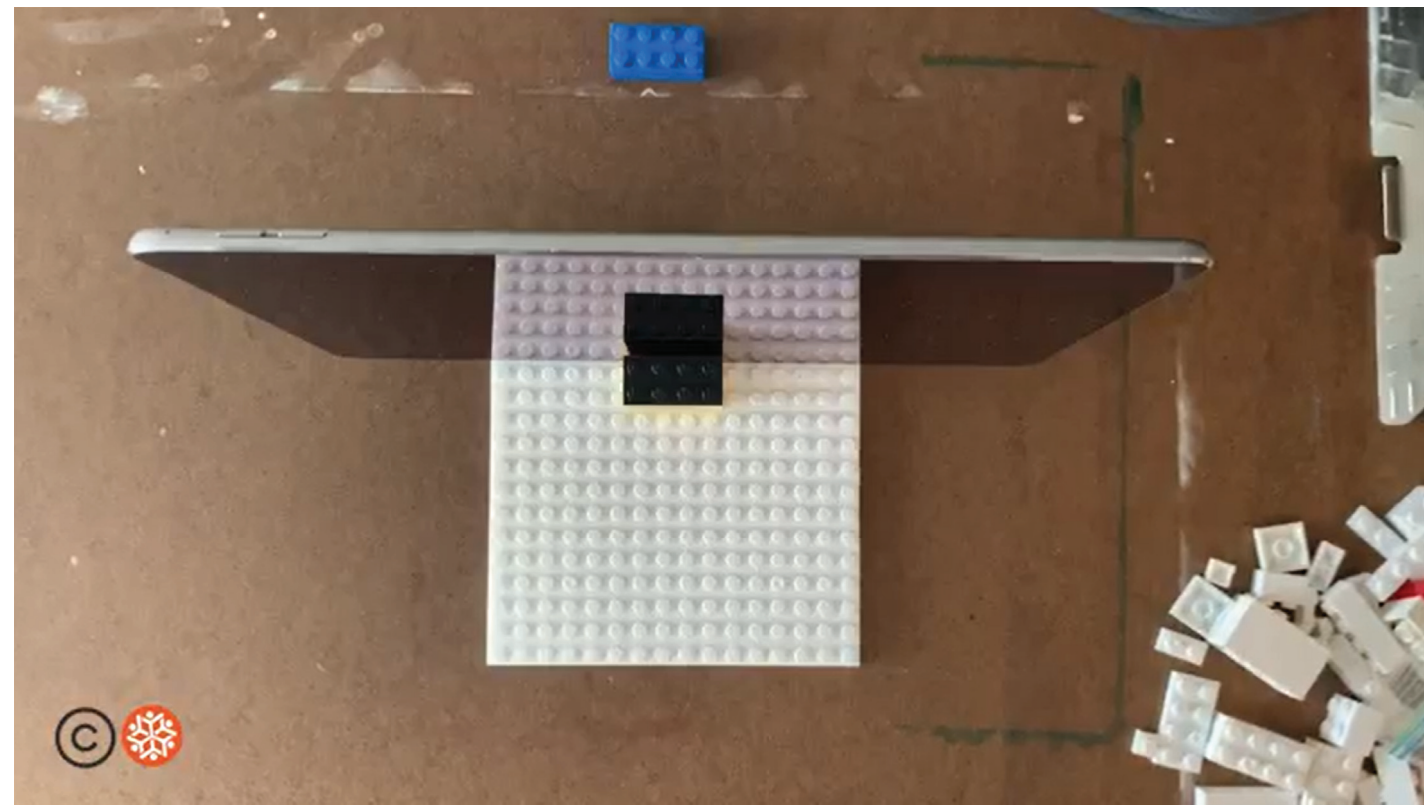
Lastly, try **panning** with your tripod. Panning is rotating your camera left-to-right and up-and-down.



Now that you have learned a few techniques of what you can do using a tripod, experiment with your own ideas, make your own mini-movies or capture still photographs of your own making.



INSTRUCTION CONTINUED:



Excellent work today! Thank you for creating a DIY tripod with me. I encourage you to check out other Snow City Arts Workshops, and hope you will create art with us again soon!

LEARNING STANDARDS

This workshop is aligned to the following state and national anchor standards. It can be differentiated for learners at every grade level. (For arts performance standard alignments at specific grade levels, feel free to email programs@snowcityarts.org.)

ILLINOIS ARTS LEARNING STANDARDS

Anchor Standards: Creating

- **CR1.** Generate and conceptualize artistic ideas and work.

Anchor Standards: Performing, Presenting, Producing

- **PR6.** Convey meaning through the presentation of artistic work.

Anchor Standards: Responding

- **RE7.** Perceive and analyze artistic work.

COMMON CORE STATE STANDARDS

English Language Arts: College and Career Readiness Anchor Standards

Language

- **CCSS.ELA-Literacy.CCRA.L.6.** Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

Standards for Mathematical Practice

- **SMP.1.** Make sense of problems and persevere in solving them.
- **SMP.2.** Reason abstractly and quantitatively.
- **SMP.4.** Model with mathematics.
- **SMP.7.** Look for and make use of structure.





If you are interested in **receiving school credit** for the work you have completed in this workshop or if you would like to **have your artwork displayed** in a Snow City Arts exhibition space or virtual gallery, please visit <https://snowcityarts.org/consent-releases/>

Contact us at programs@snowcityarts.org if you have questions, would like to offer feedback, or would like to continue working with us virtually.





Workshop Duration: 25-45 Minutes | ALL LEVELS



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Snow City Arts inspires and educates children and youth in hospitals through the arts.

Contact us if you have questions,
or would like to offer feedback at
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