

BOOK 3
Mastering
Photography

PHOTOGRAPHY

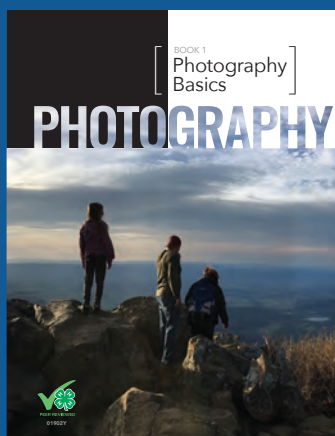


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For more on photography.....
Look for other guides in this series.

These books are available from the National 4-H Supply Service,
Shop 4-H, www.Shop4-H.org

BOOK 1: PHOTOGRAPHY BASICS



Equipment

- First Photo Shoot
- Keep it Steady, Keep it Level

Lighting

- Light Makes a Difference
- Fun with Shadows
- Flash for More Light

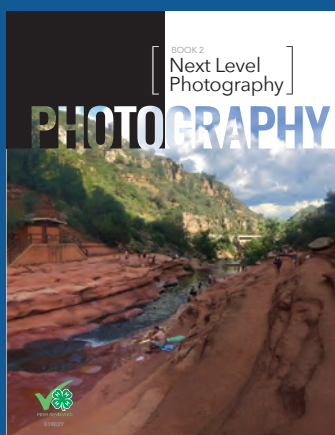
Composition

- What Do You See?
- Photograph With Your Feet
- What's the Point?
- Bird's Eye (or Bug's Eye) View
- Hat Tricks and Magic
- Taking a Selfie

Skill Building

- Taking Great Photographs
- Photos Can Tell the Story
- Black and White
- You be the Judge

BOOK 2: NEXT LEVEL PHOTOGRAPHY



Equipment

- Selecting a Lens
- Special Effects

Lighting

- Lighting the Mood
- Reflections
- Out in the Light

Composition

- The Rule of Thirds
- The Golden Photos
- Different Viewpoints
- The Space Tells a Story
- Capture a Candid Photo

Skill Building

- Bits and Pieces
- Panorama
- Expression through Color
- Pictures with a Purpose

ACKNOWLEDGMENTS

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With thanks to the many individuals who
contributed to the 2007 Edition.

Graphic Design:

TM Design, Inc., tmdesigninc.com

Photo Credits:

Many photographs in this book were
contributed by photography students and their
instructor/co-author Scott Wittenburg at Upper
Arlington High School in Columbus, Ohio. This
was a unique year-long process where students
and their instructor engaged collaboratively
in the development of this book by examining
the essential learning taking place in each
project area then identifying the types of images
needed to further the learning along the way.
Students shot a variety of photographs as actual
course assignments with the most appropriate
images selected for publication along with the
contributor's name adjacent to each photograph.

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4-H youth development movement, building
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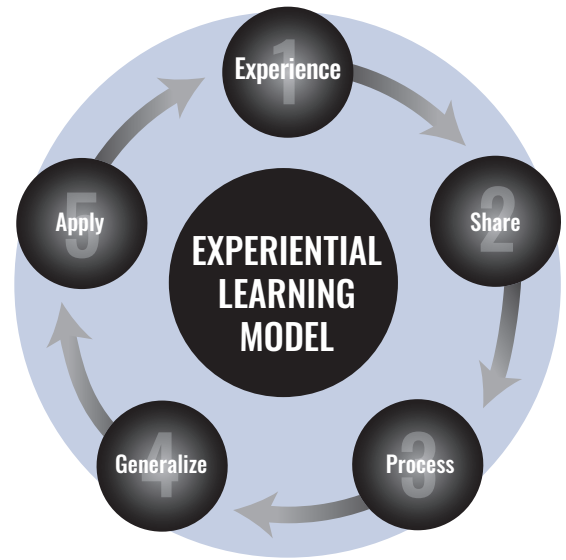
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NOTES TO THE PROJECT HELPER

This 4-H project book is designed for youth to explore and complete under the guidance of a Project Helper. This can be a parent, relative, knowledgeable adult, project leader or family friend. The duties of this individual begin with helping the child create and carry out a project plan. This is followed by helping the child Focus on each activity in his/her project plan, providing Support and Feedback for the learning taking place, and conducting Debriefing sessions to determine what was done well, what could have been done differently, and where to go from here.

The information and activities contained in this book are arranged in a unique experiential fashion (see model). In this way, youth are introduced to a particular practice, idea or piece of information through an opening Photo Shoot (1) Experience. Following this, youth take the opportunity to (2) Share what they did with their Project Helper and (3) Process the experience through a series of questions allowing the learner to (4) Generalize and (5) Apply the knowledge and skills gained. Project Helpers also provide encouragement for the learner to extend the experience by taking on one of the Challenge Yourself activities in each activity section.



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Project Helper Expectations

- Review the Learner Outcomes (Photography Skill, Life Skill, Educational Standard and Success Indicator) on the lower left-hand side of each activity to understand the learning taking place. Each activity in this book is tied to a specific National Education Standard. See the inside back cover for a summary of these standards along with the goals and outcomes for this project.
- Become familiar with the Background sections and Photo Shoot activities contained in this book. The background information is intended to enlighten the Project Helper as much as the learner. Stay ahead of the learner by trying out activities beforehand.
- Begin the project by helping the learner establish his/her plan for the project. This is accomplished by reviewing and completing pages 4-7.
- Conduct a debriefing session allowing the learner to answer Review questions and share results. This will improve their understanding about what was learned for an experiential perspective and the particular life skill and photography skill that were practices.
- Encourage use of a photo journal or scrapbook to help the learner celebrate what was done well, and to see what could have been done differently. Allow them to become better at assessing their own work.
- Date and initial the activities that have been completed on page 4 of their project plan.

ACTIVITY 1

YOU TAKE CONTROL – THE MODE DIAL

Letting light into a camera is called making an exposure. The amount of light is controlled by the shutter speed and the size of the lens opening, or the aperture. A camera's sensitivity to light is determined by the ISO or film speed.

Proper exposure of a scene is determined by the relationship of these three factors. You can change these settings of a DSLR camera but most cell phones don't have this ability. **Remember on cell phones, looking for a manual setting sometimes you can add an app that will allow you to change the amount of light!**

PHOTO SHOOT

- Go outside every day to complete your project pages.
- Set the mode dial to AUTO or Program. As you compose a variety of scenes, look in your viewfinder or screen to see what the shutter speed and aperture is being set automatically for each scene. Take notes of the settings.
- Refer to your camera's manual to learn how to set ISO. Set your ISO to 400 and turn the mode dial to M (manual). Set the shutter speed to 1/250 second and the aperture to f8. Take shots of bright scenes and dark scenes at this exposure setting. Take notes of how the exposure setting affects the light of each scene.

NOTE: If you are using a cell phone without a manual setting, you may want to consider purchasing a smartphone camera app similar to the one in the diagram. You can learn tips on how to control exposure on smartphones without manual capability in the next section.

The relationship between shutter speed and aperture with regard to light. Each successive setting is considered a "stop."

1/15	1/30	1/60	1/125	1/250	1/500	1/1000
Faster shutter speeds – Less light						
f2.8	f4	f5.6	f8	f11	f16	
Smaller aperture – Less light, greater depth of field						

CHALLENGE YOURSELF AS A PHOTOGRAPHER!

Use the mode dial to explore the different ways you can control a camera. The most important settings are shutter speed, aperture, and ISO. For an on-screen camera, and M. Refer to your camera's manual to learn how to set shutter speed and aperture for your particular camera model. Here are what the mode dial settings are used for:

- AUTO or P (Program)** Use either of these settings when you want the camera to automatically set the exposure for you. Note that the cancelled flash icon setting is used for auto exposure without flash.
- S (or Tv)** This is the shutter priority setting, used when you want to set the shutter speed manually and allow the camera to set the proper aperture automatically.
- A (or Av)** This is the aperture priority setting, used when you want to set the aperture manually and allow the camera to set the proper shutter speed automatically.
- M** This is the manual setting, used when you want total control over exposure by setting both the shutter speed and aperture manually.

LEARNER OUTCOMES

When camera equipment uses the mode dial

Life Skill: Mastering technology

Educational Standard: Analyze Standard 10: Create and Develop artistic ideas and create WACS 10: Experience and develop ability to make art using techniques and equipment through practice.

Success Indicator: Create high-quality photos that demonstrate expertise use of advanced equipment through practice.

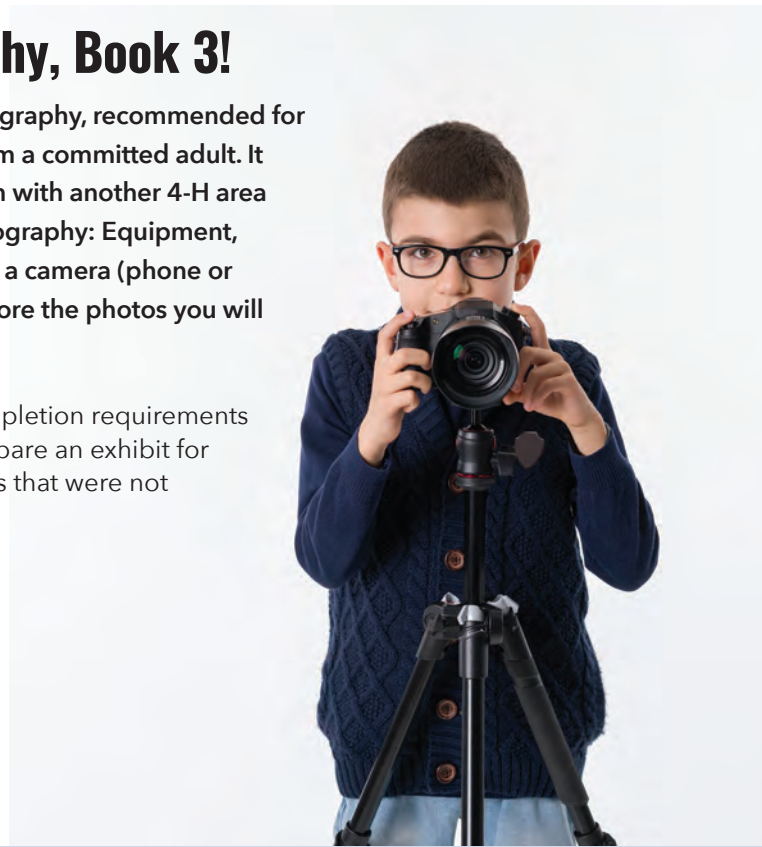
NOTE: Words in bold throughout this book are defined in the glossary.



Welcome to Mastering Photography, Book 3!

This is an advanced-level book for a serious study of photography, recommended for youth in grades 5-12. Younger students may need help from a committed adult. It can be completed as a stand-alone project or in connection with another 4-H area of interest. Activities cover four main areas related to photography: Equipment, Lighting, Composition, and Skill Building. Having access to a camera (phone or DSLR) is essential, as well as deciding how and where to store the photos you will take during the project.

Check your county's 4-H project guidelines (if any) for completion requirements in addition to the ones below, especially if you plan to prepare an exhibit for the fair. This project may be repeated if you select activities that were not satisfactorily completed or attempted in previous years.



YOUR PROJECT GUIDELINES

STEP 1: Explore each of the four Project Areas (Equipment, Lighting, Composition, Skill Building). In each area, complete the Photo Shoot activities (at least 2) of your choice along with the Talking it Over activity.

STEP 2: Take part in at least two Learning Experiences.

STEP 3: Become involved in at least two Leadership/Citizenship activities.

STEP 4: Take part in a Project Review.

OPTIONAL: The Challenge Yourself activities are optional.

STEP 1: Project Activities

Explore the four Project Areas (Equipment, Lighting, Composition, Skill Building). In each area, complete the Photo Shoot activities (at least 2) of your choice along with the Talking it Over activity. Complete each activity. When you begin an activity, fill in the date you started. When you finish an activity, move your work into your Project Journal. Have your Project Journal read and date your accomplishments. If you need you can do the Challenge Yourself activities too. Use your photo journal or notebook to keep track of your completed work.

Are you setting the project book for the first time? Yes No

If so, what year did you begin this project book? 20____

ACTIVITY	DATE STARTED	DATE COMPLETED	PROJECT REVIEW RESULTS
PROJECT AREA A: EQUIPMENT			
1. The Best Camera for the Budget Deal			
2. What is Focus?			
Talking it Over			
PROJECT AREA B: LIGHTING			
1. Low Light Challenges			
4. The Three Color Temperature			
5. Shutter Speeds			
Talking it Over			
PROJECT AREA C: COMPOSITION			
6. Through the Lens			
7. Memory or Forget?			
8. Tell Us Your Story			
9. Studio Portraits at Home			
Talking it Over			
PROJECT AREA D: SKILL BUILDING			
10. Teaching Your Skills			
11. Freeze the Moment			
12. How Did They Do That?			
13. Make a Journal			
Talking it Over			
PROJECT AREA E: SKILL BUILDING			
14. An Photography Portfolio			

STEP 2: Learning Experiences

Learning experiences are meant to complement project activities, providing the opportunity for you to do more in subject areas that interest you. What are some learning experiences you could do to show the interesting things you are learning? Here are some ideas:

- Attend a class, workshop, demonstration or speech related to photography.
- Help organize a club meeting based on some area of the project.
- Go on an outdoor field trip or tour.
- Prepare your own demonstration, illustrated talk or project exhibit.
- Participate in county judging.

Once you have a few ideas, record them here. Complete at least two learning experiences. Then, describe what you did to meet them. Ask your project helper to date and initial in the appropriate spaces below.

PLANNED TO DO	WHAT I DID	DATE COMPLETED	PROJECT REVIEW RESULTS
Submitted To:	Attended Photography exhibit at our local member of art	5/14/18	PK

STEP 3: Leadership and Citizenship Activities

Choose two Leadership/Citizenship activities from the list below, or create your own and write in the space at the bottom. Record your progress for judging. Check the date/initials and you complete the activity. You may need to change these activities at any time.

(Attach a photograph with a light, showing our progression in a Leadership/Citizenship activity.)

PLANNED TO DO	WHAT I DID	LEADERSHIP/CITIZENSHIP ACTIVITY
<input type="checkbox"/>		Teach club members about one or more aspects of photography.
<input type="checkbox"/>		Arrange for a photographer to speak at your club meeting.
<input type="checkbox"/>		Encourage someone to enroll in Photography Basics.
<input type="checkbox"/>		Help another team member to prepare for his or her project judging.
<input type="checkbox"/>		Plan an activity to celebrate National Photography Month, which is in May of each year.
<input type="checkbox"/>		Plan your own leadership/citizenship activity.

Plan your own activities here:

<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

STEP 4: Project Review

All kinds of! Congratulations! After you've completed the activities in this book, you are ready for a project review. This process will help assess your personal growth and evaluate what you have learned. Use this space to write a brief summary of your project experiences. Be sure to include a statement about the skills you have learned and how they may be valuable to you in the future.

Set up a project evaluation. This can be done with your project helper, club leader, or another knowledgeable adult. It can be part of a club evaluation or can be part of your county project judging.

BOOK 3
Mastering
Photography

Date of project review: _____

MY FAVORITE PHOTO



INTRODUCTION

By now you have learned the basics of photography and what goes into taking a successful photograph. In *Mastering Photography*, you will take your photographic skills to a whole new level. It's time to raise the bar and challenge yourself while discovering new ways to go about creating unique images you can be proud of!

Learning how to take advantage of exposure settings will help you make the most of your photo skills and enable you to take the kind of photos that have the “wow factor.” Imagine freezing the motion of a soaring bird in flight, or blurring the motion of a speeding car. Or taking stunning night shots of a city skyline and capturing dazzling fireworks displays. Learning how to set your **shutter speed** and **aperture** to document these kinds of scenes will open the door to a whole new world of photographic possibilities.

Other activities you will be working on include shooting silhouettes and learning how to create a photo puzzle in the form of a “**joiner**.” A joiner involves shooting a series of images that make up the individual puzzle pieces of an entire scene and then joining all the photos together to create one big completed photo puzzle!

Up until now, you have spent the majority of your time taking photos outside using the **natural light** of the sun as your light source. But outdoor photos are just part of the total picture. Enter the world of **studio photography**. Did you know that many of the wonderful images you see online and in advertisements were actually shot indoors using **artificial light**? Studio photography allows you total control of lighting plus enables you to avoid unpredictable, unwelcome factors like a sudden downpour or freezing cold



Credits: Scott Wittenburg

temperatures. With little effort and minimal expense, you will learn how easy it is to set up your very own studio at home! Just by using simple photo lights and backgrounds, you can take impressive formal studio portraits. You can even use your home studio to photograph still life objects.

So are you ready to dive in and learn new skills? Great, let's get started!



YOU TAKE CONTROL – THE MODE DIAL

Letting light into a camera is called making an **exposure**. The amount of light is controlled by the **shutter speed** and the size of the lens opening, or the **aperture**. A camera's sensitivity to light is determined by the **ISO** or film speed. **Proper exposure** for a scene is determined by the relationship of these three factors. You can change these settings of a DSLR camera but most cell phones don't have this ability. Research your cell phone, looking for a **manual** setting. Sometimes you can add an app that will allow you to take control of light!



PHOTO SHOOT

1. Go outside with your camera and pen and paper.
2. Set the mode dial to AUTO or Program. As you compose a variety of scenes, look in your viewfinder or screen to see what the shutter speed and aperture is being set automatically for each scene. Take notes of the settings.
3. Refer to your owner's manual to learn how to set ISO. Set your ISO to 400 and turn the mode dial to M (manual). Set the shutter speed to 1/250 second and the aperture to f8. Take shots of bright scenes and dark scenes at this exposure setting. Take note of how this exposure setting affects the light of each scene.

NOTE: If you are using a cell phone without a manual setting, you may want to consider purchasing a smartphone camera app similar to the one in the diagram. You can learn tips on how to control exposure on smartphones without manual capability in the next section.

The relationship between shutter speed and aperture with regard to light. Each successive setting is considered a "stop."

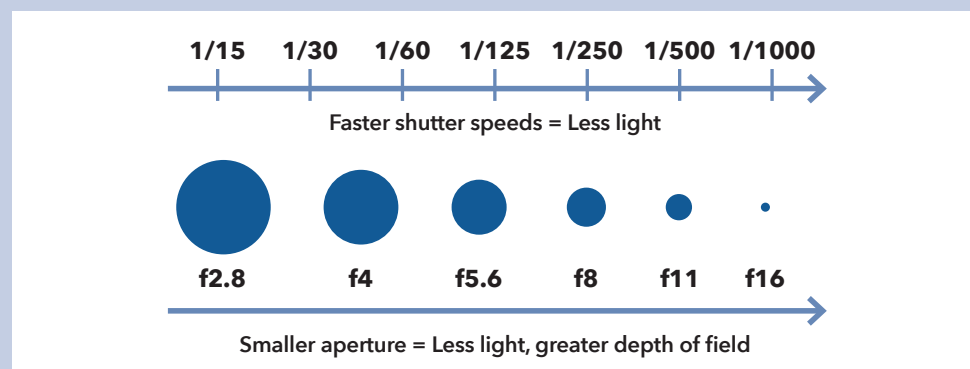


Diagram by Scott Wittenburg

Shutter Speed – Shutter speed controls how long light enters the camera. Think of the shutter as a door that opens and closes. The shutter opens and closes at speeds measured in fractions of a second; the higher the bottom number, the faster the shutter speed. Longer exposures involve the shutter opening for seconds, minutes or even hours!

Aperture – Aperture controls how much light enters the camera. The camera lens has an opening that is usually adjustable. The larger the opening, the more light enters the camera. Aperture settings are designated by units known as f-stops.

ISO (or sometimes called "Film Speed") – ISO controls how sensitive your camera's light sensors are. The higher the ISO number, the more sensitive your camera is to light.

BACKGROUND

The Mode Dial – The mode dial controls the different ways you can set exposure. The most important settings are AUTO, P, S (or Tv on some cameras), A (or Av on some cameras) and M. Refer to your owner’s manual to learn how to set shutter speed and aperture for your particular camera model. Here are what the mode dial settings are used for:

- **AUTO or P (Program):** Use either of these settings when you want the camera to automatically set the exposure for you.
- **S (or Tv):** This is the shutter priority setting, used when you want to set the shutter speed manually and allow the camera to set the proper aperture automatically.
- **A (or Av):** This is the **aperture priority** setting, used when you want to set the aperture manually and allow the camera to set the proper shutter speed automatically.
- **M:** This is the manual setting, used when you want total control over exposure by setting both the shutter speed and aperture manually.

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CHALLENGE YOURSELF AS A PHOTOGRAPHER!

- ★ Memorize the mode dial settings discussed here and what each one does. Test your knowledge by talking to a professional photographer.

LEARNER OUTCOMES

Project Skill: Get to know your camera’s capabilities using the mode dial

Life Skill: Mastering technology

Educational Standard:
Anchor Standard #2
Organize and develop artistic ideas and work.
VA:Cr2.1.5a Experiment and develop skills in multiple art-making techniques and approaches through practice.

Success Indicator:
Creates high-quality photos that demonstrate appropriate use of advanced equipment through practice

NOTE! Words in **bold** throughout this book are defined in the glossary.

This Mode Dial is set on Shutter Priority.



Credit: Scott Wittenburg

ACTIVITY 1

YOU TAKE CONTROL – THE MODE DIAL (continued)

A photo shot at the correct exposure of 1/250 second at f8



Credit: Adelaide Baldwin

The same shot that overexposed by two "stops." A slower shutter speed (1/60 second) or smaller f-stop number (f4) would cause this to happen.



Credit: Adelaide Baldwin

The same shot that is underexposed by two stops. A faster shutter speed (1/1000 second) or larger f-stop number (f16) would cause this to happen.



Credit: Adelaide Baldwin

The screen on this 25LR indicates an exposure of 1/100 second at f5.6



A screenshot of a smartphone camera app that allows you to make manual exposure adjustments



Credit: Scott Wittenburg

Here is an exposure setting of 1/250 second at f5.6 as seen through the viewfinder.



Credit: Scott Wittenburg

SUMMARY OF LEARNING OUTCOMES

National Visual Arts Education Standards: <http://nationalartsstandards.org/sites/default/files/Visual%20Arts%20at%20a%20Glance%20-%20new%20copyright%20info.pdf>

ACTIVITY	PROJECT SKILL	LIFE SKILL	EDUCATIONAL STANDARD	SUCCESS INDICATOR
Equipment				
1 You Take Control - The Mode Dial	Get to know your camera's capabilities using the mode dial	Mastering technology	Anchor Standard #2 Organize and develop artistic ideas and work. VA:Cr2.1.5a Experiment and develop skills in multiple art-making techniques and approaches through practice	Creates high-quality photos that demonstrate appropriate use of advanced equipment through practice
2 What's in Focus?	Practice capturing a focal point understanding how camera equipment and depth of field effects the photo	Mastering technology	Anchor Standard #2: Organize and develop artistic ideas and work. VACr2.2.3a: Demonstrate an understanding of the safe and proficient use of materials, tools, and equipment.	Demonstrates how to capture a particular focal point using equipment appropriately.
Lighting				
3 Low Light Challenges	Practice taking photos in low-light situations	Practicing creativity	Anchor Standard #2: Organize and develop artistic ideas and work.VA:Cr2.1.7a: Demonstrate willingness to experiment, innovate and take risks to pursue ideas, forms, and meanings that emerge in the process of art-making or designing.	Demonstrates an ability to capture a high-quality, creative photograph in a low light situation.
4 You Take Control - Smartphone Exposure Tips	Practice taking photos that help you get the correct exposure	Decision making	Anchor Standard #2: Organize and develop artistic ideas and work. VA:Cr2.1.7a: Demonstrate persistence in developing skills with various materials, methods, and approaches in creating works of art or design.	Demonstrates the ability to choose the proper exposure to create a high-quality photo
5 Shooting Silhouettes	Practice taking silhouettes	Project planning and organizing	Anchor Standard #1: Generate and conceptualize artistic ideas and work. VA:Cr1.1.4a Brainstorm multiple approaches to a creative art or design problem (back lighting) through practice.	Chooses appropriate lighting and content to create high-quality silhouettes, inside and outside
Composition				
6 Through the Lens	Practice composing photos that include geometric shapes and interesting framing	Decision making	Anchor Standard #8: Interpret intent and meaning in artistic work. VARE9.1.6a: Develop and apply relevant criteria to evaluate a work of art	Creates photos that demonstrate composition themes of geometric shapes, good frames and perspective
7 Harmony or Discord?	Practice composing photos that break the photography "rules."	Thinking critically	Anchor Standard #8: Interpret intent and meaning in artistic work. VARE9.1.6a: Develop and apply relevant criteria to evaluate a work of art	Creates photos that show an understanding of "discord" and demonstrably "break the Rule of Thirds."

ACTIVITY	PROJECT SKILL	LIFE SKILL	EDUCATIONAL STANDARD	SUCCESS INDICATOR
8 Still-Life Photography	Practice taking still-life photos	Decision making	Anchor Standard #10: Synthesize and relate knowledge and personal experiences to make art. VA:Cn10.1.3a: Develop a work of art based on observations of surroundings.	Creates a series of still-life photos that demonstrate similar themes, colors, lighting, interests.
9 Studio Portraits at Home	Practice capturing portraits showing a person's character and personality	Planning and organizing	Anchor Standard #2: Organize and develop artistic ideas and work. VA:Cr2.3.7a Apply visual organizational strategies to design and produce a work of art, design or media that clearly communicates information or ideas.	Captures a special person's portrait, including character and personality
Skill Building				
10 Testing Your Skills	Practices taking photos of interesting shapes, patterns and textures	Practicing creativity	Anchor Standard #1: Generate and conceptualize artistic ideas and work. VA:CR1.25a: Identify and demonstrate diverse methods of artistic investigation to choose an approach for beginning a work of art.	Creates abstract photos demonstrating an understanding of symmetry/asymmetry, patterns and textures, shapes and forms, and rhythms
11 Freeze the Moment	Practice capturing photos where the subject is in motion	Decision making	Anchor Standard #2: Organize and develop artistic ideas and work. VA:Cr2.1.7a: Demonstrate persistence in developing skills with various materials, methods, and approaches in creating works of art or design	Demonstrates ability to capture motion happening at high speed in a photo
12 How Did They Do That?	Practice taking photos that are outside of normal limits: astrophotography, underwater, infrared.	Mastering technology	Anchor Standard #2: Organize and develop artistic ideas and work. VACr2.2.3a: Demonstrate an understanding of the safe and proficient use of materials, tools, and equipment.	Creates photographs that are outside the normal limits of regular camera equipment
13 Make a Joiner!	Practice creating creative joiners	Practicing creativity	Anchor Standard #1: Generate and conceptualize artistic ideas and work. VA:CR1.25a: Identify and demonstrate diverse methods of artistic investigation to choose an approach for beginning a work of art.	Demonstrate an ability to create interesting joiners photographs
Exhibiting Your Work				
Exhibiting Your Work	Evaluates photos that represent body of work	Making decisions	Anchor Standard #4: Select, analyze and interpret artistic work for presentation. VA:Pr4.1.3a: Investigate and discuss possibilities and limitations of spaces, including electronic, for exhibiting artwork.	Creates online photo portfolio for sharing, deciding which photos are the best representation of work.