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A Comparison of the Individualized and Traditional Approaches to Student Achievement in Photography at Churchland High School

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A COMPARISON OF THE INDIVIDUALIZED AND TRADITIONAL APPROACHES
TO STUDENT ACHIEVEMENT IN PHOTOGRAPHY AT CHURCHLAND HIGH SCHOOL

A Research Paper

Presented to

the Writer's Advisor and the Faculty
of the College of Education
Old Dominion University

In Partial Fulfillment
of the Requirements for the Degree
Masters of Science
in Secondary Education

by

James Earl Perkinson, Junior

July, 1976

This research paper was presented by James Earl Perkinson, Jr. under the direction of this researcher's advisor in Education 536, Problems in Education. It was submitted as partial fulfillment of the requirements for the degree of Master of Science in Education.

Date: _____

Graduate Program Director

Approved by: _____

David I. Joyner
Advisor

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A COMPARISON OF THE INDIVIDUALIZED AND TRADITIONAL APPROACHES
TO STUDENT ACHIEVEMENT IN PHOTOGRAPHY AT CHURCHLAND HIGH SCHOOL

BACKGROUND INFORMATION

The World of Communications I was not being offered at Churchland High School although plans were underway to include it in the 1976-1977 school year. One of the major reasons to include this course in the industrial arts curriculum is the large amount of student interest in this area.

During the period from January 1975 through January 1976 industrial arts students at Churchland High School organized an Industrial Arts Student Association and held fund raising activities to purchase photographic equipment for the industrial arts department. To date these students have converted a storage room into a darkroom, and have completely equipped the darkroom with the exception of two 35 mm. cameras which were purchased by the Portsmouth School Board in the summer of 1975.

Through the cooperation of the Churchland High School administration and with the permission of its principal, Mr. Jack Ryder, a six weeks unit in photography was included in a Mechanical Drawing I class during the second semester.

STATEMENT OF THE PROBLEM

The purpose of this study was to see if there is any significant difference in the achievement of industrial arts student who have been taught photography by a traditional approach as compared to similar industrial arts students who have been taught photography through individualized learning packets at Churchland High School.

STATEMENT OF THE HYPOTHESIS

There is no significant difference between the achievement of students taught photography by the traditional and "Individualized Learning Packets" approaches.

DEFINITIONS

World of Communications

The term, World of Communications, refers to an industrial arts orientation and exploration course in which the areas of drafting, electronics, graphic arts, and photography are studied.

Photography

The term, photography, refers to the section of the World of Communications that introduces the students to black and white still photography.

Control Group

The term, control group, refers to the group of students taught photography by the traditional approach.

Experimental Group

The term, experimental group, refers to the group of students taught photography by individualized learning packets.

Individualized Learning Packets

The term, individualized learning packets, refers to packets of information that contain a rationale, objectives, activities and test or tests. The purpose of these packets is to allow the students to select activities in order to meet the objectives. The students work at their

own pace and the instructor is available for help if needed.

Traditional Approach

The term, traditional approach, refers to the presentation of information to a group during daily lectures and/or demonstrations.

Mechanical Drawing I

The term, Mechanical Drawing I, refers to an introductory drafting course in which the correct care and use of the drafting equipment and the basic drafting concepts are taught.

Multiple Activity

The term, multiple activity, refers to dividing of a class into groups and teaching of different material to each group for a period of time. At the completion of the time period, the groups are rotated into another area until all groups have covered all of the material.

Orientation and Exploration

The term, orientation and exploration, refers to certain industrial arts courses in which basic skills and concepts in certain areas are learned by the students.

LIMITATIONS

This study was limited to two-thirds of a first period Mechanical Drawing I class and also limited to the available photography equipment at Churchland High School. The study was further limited in that no pre-established standardized test was available for use in comparison of achievement .

Many variables such as student attitudes, health and socio-economic backgrounds of the students were not considered in this study. A pre-test

was not used in order to eliminate the possibility of an interaction of learning by both of the groups. The Hawthorne effect¹ was not considered to be of any significance in this study because of previous exposure to individualized learning packets by the population involved in the study.

SIGNIFICANCE OF THE STUDY

In the fall of 1976 the industrial arts department at Churchland High School will offer The World of Communications I. The course will include major units in drafting, electronics, graphic arts and photography.² Because of the limitations imposed by the physical size of the room and the amount of available equipment, a multiple activity teaching approach will be employed in order to provide each student sufficient opportunity to use the equipment and facilities.

The author has developed individualized learning packets in photography. It was the contention here to provide both an experimental and a control group in order to compare the achievement of the control group to determine if there was any significant advantage of one method over the other.

Chapter 2

REVIEW OF LITERATURE

Research has shown that individualized instruction has different meanings. Individualized instruction can be interpreted to mean providing tutorial assistance for pupils or the planning and implementation of an individualized program of studies tailored to each student's learning.

³ There are several methods of individualizing instruction. The five basic ways are:

- . programmed learning
- . instructional packages
- . contracts
- . work-study experience
- . community contribution experience.⁴

Individualized instruction is not new; it is older than formal education. It began with the development of man when a father instructed his son in some skill or learning situation. Even as early as the latter part of the nineteenth century, attempts were being made to individualize instruction⁵ and in the early part of the twentieth century the activities that were done in the manual arts usually were done on an individualized basis.⁶ Today's education places greater emphasis on the individual and on instruction to meet the needs of the individual. Increasingly, schools and universities throughout the nation are developing or adopting improved and creative approaches to the teaching-learning process. Individualization receives more emphasis than *any* other instructional strategies.⁷ There are two main reasons why individualization of instruction is receiving more emphasis than other teaching methods. First, learning could take place more efficiently if the students are allowed to select the

instructional method.⁸ Second, the more the student is involved in self-direction and self-discovery, the better the learning.⁹

Research shows that no matter which method of individualized instruction is considered, there are major divisions or components that should be included. Many authorities feel that a rational statement should be included in individualized instruction. One such authority is Doctor Micha L. Kozak who states that if a module is to be included its value to the students should be pointed out.¹⁰ The second main item to be included is objectives. Objectives are simply statements of competencies that the students should obtain as a result of the instruction.¹¹ A list of varied learning activities is the third and most important aspect of individualized instruction. The final major division of individualized learning is evaluation. Evaluation occurs through pre-tests, post-tests, self-tests and mastery test.¹³

Research indicates many favorable aspects of individualized instruction and points out that advantages in individualized instruction fall upon two groups of people, the teachers and the students. A study by Oen and Sweany states that teacher effectiveness increases when the teacher knows the objectives of the course, when he understands his role, when he uses a wide variety of material presentation techniques, and when he has time to individualize his instruction.¹⁴ In a report on a model school project, Bonnie Daniel reports that, utilizing the individualized method of instruction, the teacher must assess his strengths and weaknesses and that he must also be involved in a continuous process of evaluating both the subject matter and student achievement.¹⁵ In an article describing what he has done in individualized instruction, Paul Smith points out that the teacher should be a resource person.¹⁶

William Mead, in a study comparing student achievement in traditional instruction to individualized instruction, found that positive differences were found in teacher and pupil attitudes.¹⁷ Several studies have pointed out many positive effects of individualized instruction upon students. A study by Taber, reports a higher percentage of students passed the course who were instructed by individualized instruction as compared to students who were taught by a traditional method.¹⁸ A study by Susan Sewell indicated a preference of individualized instruction by students over traditional instruction.¹⁹ Kenneth Moffett points out that the students engaged in individualized instruction are able to work at their own rate, at their own convenience, using their stronger points with which to learn and without the pressures of peer completion.²⁰

Other authorities describe several shortcomings of individualized instruction. One undesirable effect is that students' self-concepts actually go down.²¹ In a study used to determine if students prefer individualized instruction as opposed to traditional instruction it was found that students prefer the teacher controlled learning situations;²² and in a study comparing individualized and group instruction it was found that students reacted more to subject matter than teaching style.²³ Many of the other shortcomings of individualized instruction are summed up by Ferguson who says:

"Not all children are self-motivated, not all like the spotlight, not all are aggressive enough to express their need for help or even to ask questions. Security must be provided in individualized classrooms, as well as freedom."²⁴

Chapter 3

RESEARCH METHODS

POPULATION

The population for this research consists of one class of first year mechanical drafting students at Churchland High School. From this class of twenty-three, five students were eliminated from this study due to previous training in photography. The remaining eighteen students composed the experimental group and the control group.

A DESCRIPTION OF THE CONTROL GROUP

In the traditional approach the main emphasis was placed on the lecture/demonstration teaching method. In this method all material was presented through lectures, demonstrations and discussions to the group as a whole. The curriculum content of this unit was divided into four main areas which were:

- I. The camera and its accessories
- II. Development of film
- III. Print processing and enlarging
- IV. Finishing, mounting and displaying

Upon completion of each section, the group was given a test covering that information. At the completion of the six weeks period, the group was given a unit test covering all of the information. It should be noted here that, as with the experimental group, the control group was allowed to compose photographs and make enlargements on an individual basis.

A DESCRIPTION OF THE EXPERIMENTAL GROUP

In the individualized learning packets, the major emphasis was placed on each student setting his own learning pace. Each student was given a packet and upon the completion of this packet he was given a second packet. There were four packets in all. The curriculum content of this unit was divided into four main areas as with the control group. These areas were:

- I. The camera and its accessories
- II. Development of film
- III. Print processing and enlarging
- IV. Finishing, mounting and displaying

Upon completion of each section or packet, the student was given a test covering that section. At the completion of this entire unit, the student was given a test covering the information from the entire unit.

RESEARCH TECHNIQUES

The population for this study consisted of eighteen students from a first year mechanical drafting class at Churchland High School that had not previously been taught photography. These students were assigned to one of two groups by means of matching. The basis for matching was their first semester averages in Mechanical Drafting I. After the students were placed in a group, a flip of a coin was used to decide which group was the control group and which group was the experimental group. A second flip of the coin was used to decide which group would be taught photography during the fifth six weeks of school and which group would be taught photography during the sixth six weeks of school.

This method of sampling was conducted for two main reasons. First it was felt that, due to the small population, the random placement

of students in groups would not give a valid result. Second, the reluctance of some of the school personnel in the Portsmouth school system to allow information found in the permanent records of students to be used in individual research projects.

During each of the six weeks periods the students in both the control group and the experimental group were given five tests. Four of these tests were given after each of the sections are completed and the fifth test was given at the conclusion of the six weeks period or at the completion of the unit. These tests were identical for both groups. These tests have been examined by several persons and were found to be valid tests. The people examining the tests were Mr. James Doyle, an industrial arts teacher at Churchland Junior High School and an amateur photographer; Mr Tom Smithwick, World of Communications I and II instructor at Manor High School; and Mr. C. L. Snyder of Snyder Studios, Portsmouth, Virginia. In addition to the written tests the students were evaluated on the following skills that are needed in photography:

- . The ability to use and care for a camera and accessories
- . The ability to develop film
- . The ability to make a contact print
- . The ability to use an enlarger and employ different enlargement techniques when making a photographic print
- . The ability to finish prints in order to produce different types of finishes and to mount and group photographic prints for display.

At the completion of the six week period the evaluated skill results and the tests results were used to determine a six weeks grade. The six weeks grades from each of the groups were compared at the .05 level of significance using the t -test method in order to test the null

hypothesis that there is no significant difference between the achievement of the two groups.

Chapter 4

TEST RESULTS

This study was done in an attempt to provide an answer to the question stated in the problem and to see if there were any statistical findings which would enable one to reject the null hypothesis: There is no significant difference between the achievement of students taught photography by the traditional and "Individualized Learning Packets" approaches.

Table 1 gives a listing of the averages based on the six weeks grades during which this study was conducted. The mean score for the experimental group was higher than the mean score of the control group, Table 2.

The null hypothesis was not rejected at the .05 level of significance. The computations of the t -test for nonindependent samples is shown in Table 3.

Table 1

Six Week Grade Averages

Subject Number	Six Week Grade Averages Control Group	Six Week Grade Averages Experimental Group
1	67	76
2	68	76
3	82	80
4	78	75
5	86	80
6	79	79
7	77	76
8	76	80
9	88	89

Table 2

Mean Scores on the Six Weeks Grade Averages

Control Group	Experimental Group
77.89	79.89

Computation of t -Test
for
Nonindependent Samples

Subject Number	Control Group Grades	Experimental Group Grades	D	D^2
1	67	76	+9	+81
2	68	76	+8	+64
3	82	80	-2	+ 4
4	78	75	-3	+ 9
5	86	88	+2	+ 4
6	79	79	0	0
7	77	76	-1	+ 1
8	76	80	+4	+16
9	88	89	+1	+ 1
			$\Sigma D=18$	$\Sigma D^2=180$

$$t = \frac{\frac{\Sigma D}{N} - \frac{(\Sigma D)^2}{N^2}}{\frac{\Sigma D^2 - \frac{(\Sigma D)^2}{N}}{N(N-1)}} = \frac{\frac{2.00}{9} - \frac{(18)^2}{81}}{\frac{180 - \frac{324}{9}}{9(9-1)}} = \frac{\frac{2.00}{9} - \frac{324}{81}}{\frac{180 - 36}{72}} = \frac{2.00}{72} = \frac{180 - 36}{72}$$

$$\frac{\frac{2.00}{9}}{\frac{144}{72}} = \frac{2.00}{2.00} = \frac{2.00}{1.42} = 1.42$$

d.f.	t Value
N-1	(.05)
8	2.31

$t = 1.42$, Accepted at .05 level

Chapter 5

SUMMARY AND CONCLUSION

This research study was conducted in order to provide information that would possibly answer the question stated in the problem: Is there any significant difference in the achievement of students taught photography through the use of individualized learning packets as compared with the achievement of similar students taught photography through the traditional approach. This researcher feels that several significant conclusions can be made from this study.

First, the mean score of the experimental group was higher than the mean score of the control group.

Second, the null hypothesis was accepted at the .05 level.

The results of this study will greatly aid the Industrial Arts Department at Churchland High School in making the decision concerning the teaching strategy that will be employed in The World of Communications I.

It should be noted that variables such as student attitudes, health and socio-economic backgrounds of the students were not considered in this study.

RECOMMENDATIONS FOR ADDITIONAL STUDY

It is recommended that each industrial arts teacher who is teaching the World of Communications I and using individualized learning packets in the photography section conduct experimental research to determine if the individualized learning packets have any significance on student achievement when compared with the traditional teaching approach.

It is also recommended that before any school system adopts wide spread use of individualized learning packets for use in any area that a pilot program be established and thoroughly studied before implementing the change system wide.

FOOTNOTES

¹ Edward H. White, Jr., "Contracts," Man/Society/Technology, XXXV (November 1975), 46.

² A. J. Rosser, "An Overview," Man/Society/Technology, XXXV (November, 1975), 48.

³ Rita Stafford Dunn, "Individualizing Instruction: Questions and Answers," NASSP Bulletin, LIX (April, 1975), 30.

⁴ Kenneth M. Moffett, "Making Individualized Instruction Work in Industrial Arts," Man/Society/Technology, XXXVIII (January, 1974), 117.

⁵ F. Coit Butler, Instructional Systems Development for Vocational and Technical Training (Englewood Cliffs, New Jersey: Educational Technology Publications, Inc., 1972), p. 37.

⁶ John O. Bolvin, "Implications of the Individualization of Instruction for Curriculum and Instructional Design," Audiovisual Instruction, (March 1968), 238.

⁷ Dunn, op. cit., p. 32.

⁸ Bernice J. Wolfson, "Teaching for Individuality and Personal Learning," Individualization of Instruction, ed. Virgil M. Howes (New York: MacMillan Company, 1970), p. 107.

⁹ Ronald D. Bro, "Individualized Instruction - Do It Now!," Man/Society/Technology, XXXVIII (January, 1974), 104-105.

¹⁰ Michael R. Kezok, "Instructional Modules: A Summary," Man/Society/Technology, XXXV (November, 1975), 40.

¹¹ *Ibid.*

¹² David L. DePue, "Implementing Individualized Instruction in Your Electronics Program," Man/Society/Technology, XXXVIII (January, 1974), 106-107.

¹³ *Ibid.*

¹⁴ Urban T. Oen and Paul H. Sweany, "The Effectiveness of an Individualized Learning Method of Instruction When Compared to the Lecture-Discussion Method," (East Lansing, Michigan: Michigan State University, September, 1971), p. 10.

¹⁵ Bonnie Daniel, "Individualized Evaluation Is Essential in Individualized Learning," NASSP Bulletin, LVIII (May, 1974), 57.

¹⁶ Paul G. Smith, "The Teacher as a Resource Person and Motivator," Industrial Education LXV (January, 1976) 21-22.

17 William F. Mead and Lawrence M. Griffin, A Comparative Study of Student Achievement and Other Selected Characteristics in a Program of Individualized Instruction in Mathematics and in a Program of Traditional Instruction in Mathematics in Grades 1-6, U. S. Educational Resources Information Center, ERIC Document ED 028 168, August, 1969, 156.

18 Margaret R. Taher, "A Comparison of Using Individualized Instruction and Conventional Lecture Techniques in the Lecture Section of Electric Circuits 540-125," (Doctoral dissertation, Nova University, 1974), compiled by Joel H. Magisos and Anne E. Stakelon, Individualization and Modularization of Vocational Education Instructional Materials: Bibliography Series No. 32, (Ohio State University, 1975), pp. 4-5.

19 Susan Sewell, "A Comparative Analysis of Student Attitudes Toward Individualized and Traditional Instruction. Final Report," compiled by Joel H. Magisos and Anne E. Stakelon, Individualization and Modularization of Vocational Education Instructional Materials: Bibliography Series No. 32, (Ohio State University, 1975), p. 23.

20 Moffett, op. cit., p. 117.

21 Sivasailam Thiagaragan, "Danger: Individualizing Instruction Can Be Hazardous to Learning," Audiovisual Instruction, XIX (May, 1974), 17-18.

22 John J. Connally and Thomas Sepe, "D Students Want Individualized Instruction," (Los Angeles: California University, July, 1972), p. 32.

23 Charles Anderson and David Butler, A Comparison of Individualized Verse Group Instruction in a Sixth Grade Electricity Unit, U. S. Educational Resources Information Center, ERIC Document ED 108 869, March, 1975.

24 Hugh D. Ferguson, "Pitfalls and Frustrations of Individualization," NASSP Bulletin, LIX (April, 1975), 29.

APPENDIX A

LEARNING PACKET #1

INTRODUCTION TO PHOTOGRAPHY
AND
THE CAMERA AND ITS OPERATION

Name: _____

Period: _____

The unit in photography will be taught through the use of individual learning packages. There will be four packages in the area of black and white still photography. This package, the first, will cover some general information on photography, some of the basic types of cameras and the operation of an adjustable camera. The second package will cover the development of film; the third package will cover the printing and enlarging of photographs; and the fourth package will cover the finishing and mounting prints. Each of the packages will contain a list of objectives that you are to meet and activities which will allow you to meet these objectives. If you feel confident in the information or area covered by any of the packages you may take the test on that unit without doing any of the activities, or you may complete some of the activities or all of the activities and take the test. You will have six weeks to complete the four packages. If you complete the packages in less than six weeks you may proceed to another unit or you may spend the remainder of the time on a special project of your choosing in the area of photography. You will be graded upon the quality of work that you do. The darkroom will be available for use certain days after school. See your instructor for the specific days and times.

GOOD LUCK!

RATIONAL:

Photographers must know the advantages and disadvantages of several types of cameras. They must also know how to correctly set and adjust a camera in order to be able to correctly expose film. Because different situations require different types of accessories, photographers must know about the accessories and how to use them. This package is designed to meet the needs of a student in the areas of camera types and operations of a camera and its accessories.

THE CAMERA AND ITS OPERATION

OBJECTIVES

At the conclusion of this package the student will be able to:

1. Identify several types of cameras and describe the advantages and disadvantages of each.
2. Identify basic parts of a camera and describe their functions.
3. Make adjustments and settings on a camera when using different films and under different conditions.
4. Load film into a camera and unload film from a camera.
5. Compose a shot for a photograph and expose the film.
6. Use a closeup lens and a copy stand.
7. Determine the proper camera settings by using an external light meter.
8. Use an electronic flash in order to correctly expose film under limited light conditions.
9. Mount a camera upon a tripod.
10. Load film into a film magazine from a bulk film loader.

THE CAMERA AND ITS OPERATION

ACTIVITY SHEET

This package covers the camera and its operations. If you feel that you know the information you may take the post test without doing any or with doing only part of the activities.

ACTIVITIES

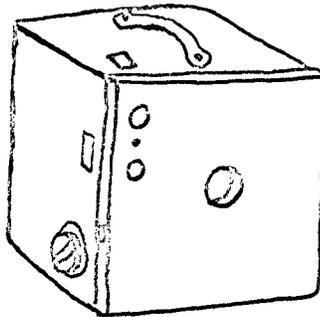
1. Read the sheet on types of cameras
or
View the slide/tape presentation (slides 1-1 through 1-5)
or
Read in Printing by Hartley Jackson, pages 226 through 236.
2. Read sheets on parts of Mamiya/Sekor 528 TL camera and adjustments on the camera
or
View slide/tape presentation (slides 2-1 through 2-22).
3. Read sheet on Honeywell Flash unit and other camera accessories
or
View slide/tape presentation (slides 3-1 through 3-14).
4. Read sheet on operation of external light meter
or
View slide/tape presentation (slides 4-1 through 4-8).
5. Read sheet on bulk film loader
or
View slide/tape presentation (slides 5-1 through 5-6).
6. Complete "Camera Operation Sheet."
7. Optional: Read job description of a photographer.
8. Take test on this package.

TYPES OF CAMERAS

A camera is used for taking photographs. All cameras have four basic parts; body, lens, shutter and film holder. There are many types of cameras but only four types will be covered here.

BOX

The box camera is the simplest type of camera. It is prefocused, has a fixed f/stop (usually between f/8 and f/11) and has a fixed shutter speed. A box camera is simple to operate: load, aim and expose the film.



INSTAMATIC

The instamatic camera has all of the advantages of the box camera plus the film comes in a film holder that is simply dropped into the camera. Any adjustment that must be made on the camera is done automatically.

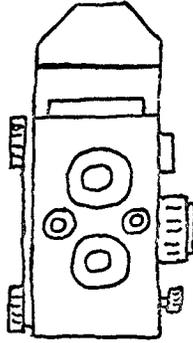
POLAROID

The polaroid camera is simple to operate. Different models have different features. The film is purchased in packs which are placed in the camera. The appeal of a polaroid camera is that the film, when advanced, develops itself so that the photographer can view his finished print usually in less than a minute.

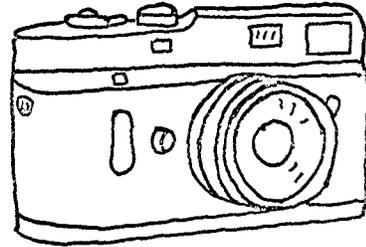
REFLEX

There are two types of reflex cameras, the twin lens reflex and the single lens reflex.

TWIN LENS REFLEX



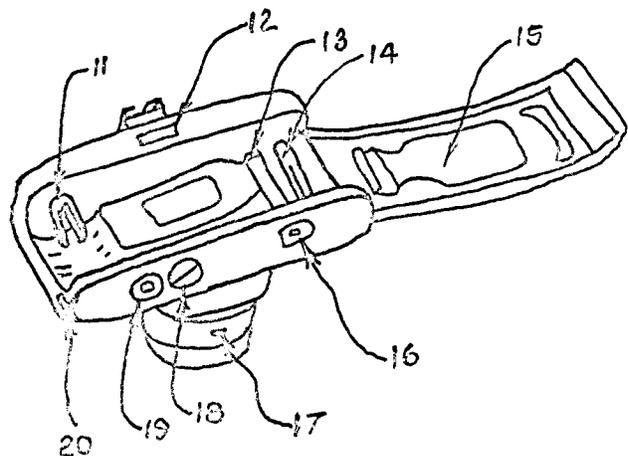
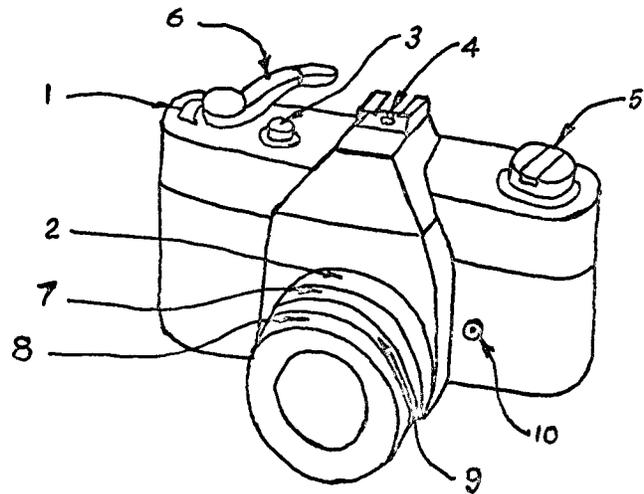
SINGLE LENS REFLEX



The reflex cameras are available in a variety of different models ranging from non automatic to completely automatic. Many accessories are available for these types of cameras.

PARTS OF THE MAMIYA/SEKOR 528 TL

1. Exposure Counter
2. Diaphragm Ring
3. Shutter Release Button
4. Accessory Shoe
5. Rewinding Crank
6. Rapid Film Advance
7. Shutter Speed Ring
8. Depth of Field Scale
9. Focusing Ring
10. Flash Terminal
11. Film Chamber
12. Viewfinder
13. Film Sprockets
14. Take-Up Spool
15. Pressure Plate
16. Film Rewind Release Button
17. ASA Film Speed Setting Lever
18. Battery Compartment Cover
19. Tripod Socket
20. Back of Cover Lock

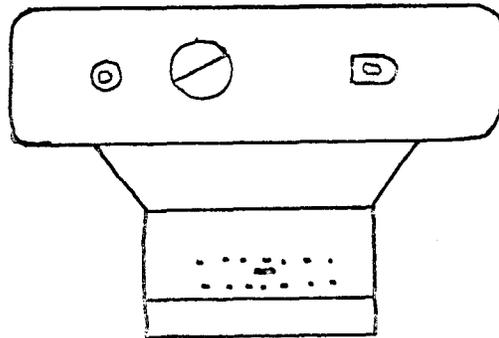


CAMERA ADJUSTMENTS

Setting Film Speed

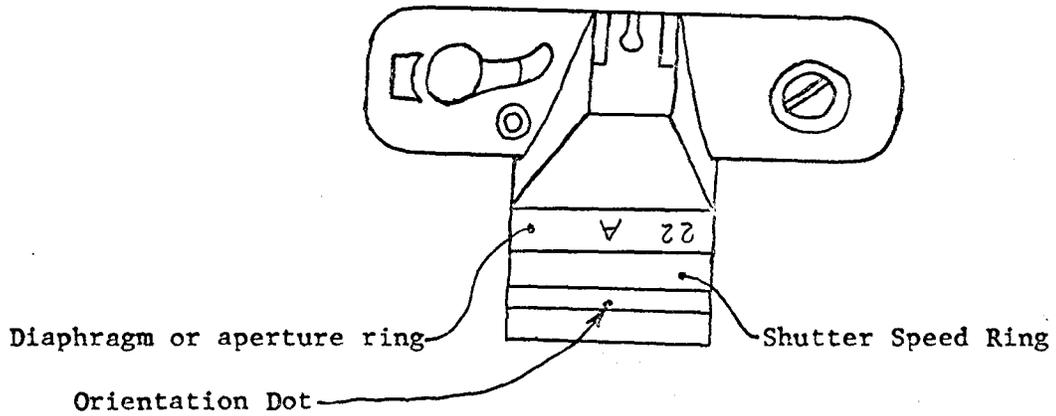
Sensitivity of film is rated by its ASA number. The higher the number the more sensitive the film is to light and the grainer the print will appear after enlargement. In order to set the camera for the ASA setting, press the ASA film speed setting lever and move it until it lines up with the desired ASA number. Below are the settings you will find on our camera.

	12	20	32	40	60	80	125	160	250	320
ASA 10	. 16	. 25	. . .	. 64	. <u>100</u>	. . .	. 200	. . .	. 400	
Din 11	. 13	. 15	. . . . .	. 19	. 21	. . .	. 24	. . .	. 27	
	12	14	16	17	18	20	22	23	25	26



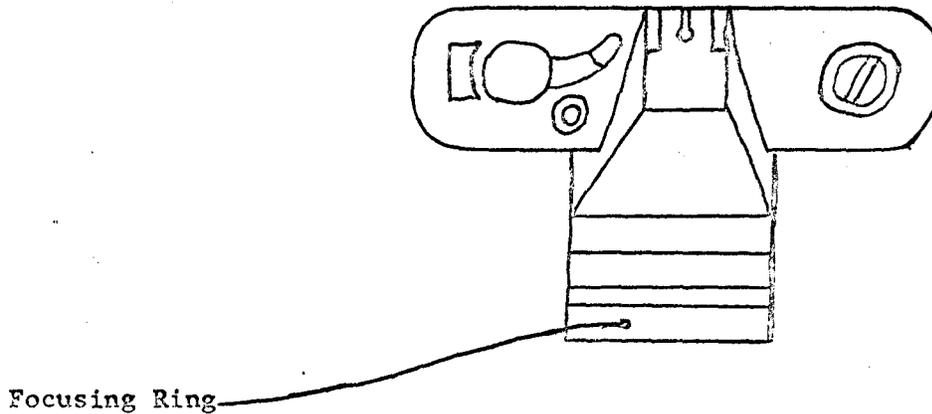
Automatic Photography

Turn the diaphragm ring until "A" is aligned with the orientation dot. Turn the shutter speed ring until the desired shutter speed is aligned with the orientation dot. A shutter speed of 1/125 may meet most requirements. Check the exposure meter pointer in the viewfinder. If the meter pointer is at the warning mark at the top, go to a slower shutter speed. If the meter pointer is at the lower warning mark go to a higher shutter speed.



Focusing

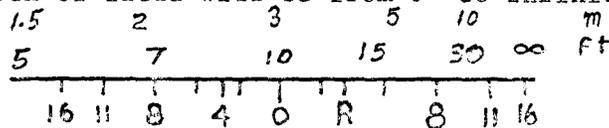
Turning the focusing ring until the image in the small circle of the viewfinder becomes sharp will focus the camera.



Depth of Field

The depth of field scale indicates how much of your picture will be in focus at different aperture openings. A small opening will increase the area between the nearest and furthest point that will remain in focus.

Example: If the aperture is set at f/16 and the camera is focused at 10' the depth of field will be from 6' to infinity.



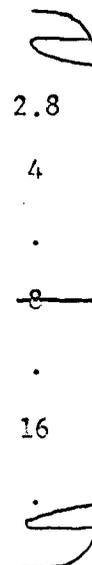
Holding the Camera

Place the left hand under the camera and the thumb and index finger on the focusing ring. Place the forefinger of the right hand on the shutter release button and the thumb on the film advance lever. Keep the left elbow as close to the body as possible. Do not use a shutter speed lower than 1/60 unless the camera is on a tripod or resting against something stationary.

Non-Automatic Operation

For manual operation of the camera check the pointer in the viewfinder in order to find the correct f/stop. Align the indicated f/stop up with the orientation dot.

Example: The needle is indicating the desired aperture opening, f/8.

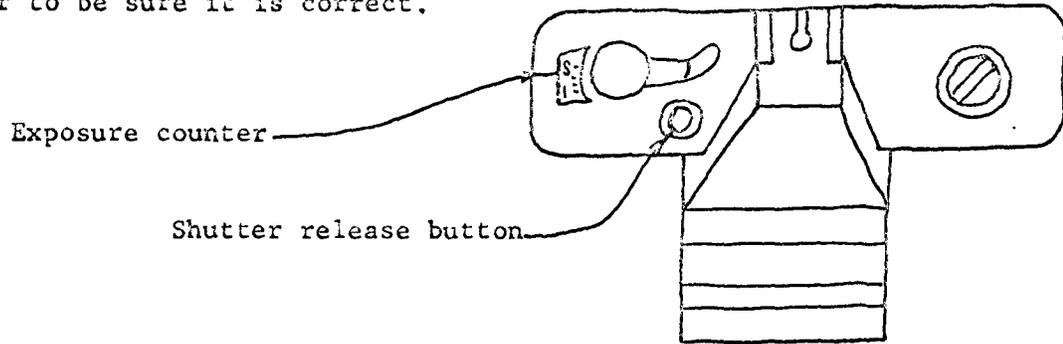


Loading the Camera

Do not load the camera in bright light. Open the back of the camera with the back cover lock. Pull the rewind crank knob up, put the magazine into the film chamber and return the rewind crank. Draw out the film leader and insert it into the take-up spool. The take-up spool may have to be turned in order to properly locate the slits. Turn the rapid film advance lever making sure that both sprockets properly engage the film perforations. Take up the film's slack by turning the rewind crank until the film is taut. Close and lock the

cover.

The letter "S" now appears in the exposure counter window. Advance the film and depress the shutter release button after each stroke until the figure #1 appears opposite the mark. Check your ASA setting in order to be sure it is correct.

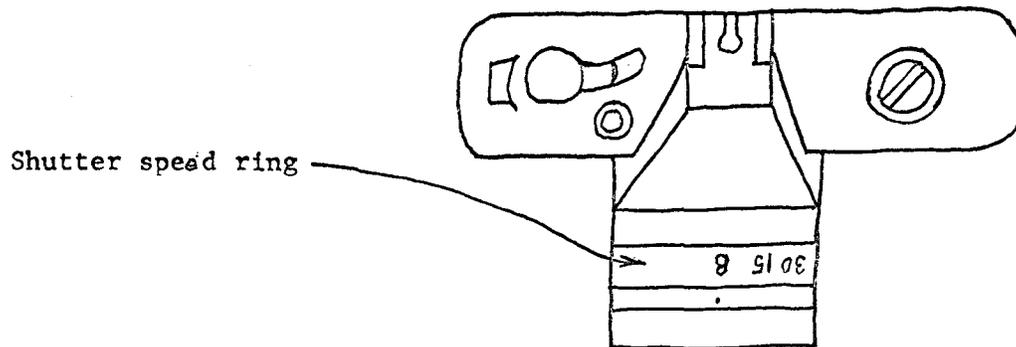


Taking the picture

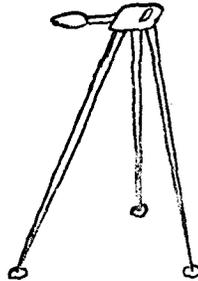
The curtain behind the lens is removed when the shutter release button is depressed. The amount of time is controlled by adjusting the shutter speed ring. After the film has been exposed each time the film advance lever will have to be moved in order to advance the film to the next frame. When the rapid film advance lever is moved the rewinding crank should turn. This indicates that there is film loaded in the camera. Once the film becomes hard to advance it is time to rewind the film.

Time Exposure Photography

Place the shutter speed ring on "B". The shutter will remain open as long as the shutter release button is depressed. The camera must be held on a tripod.

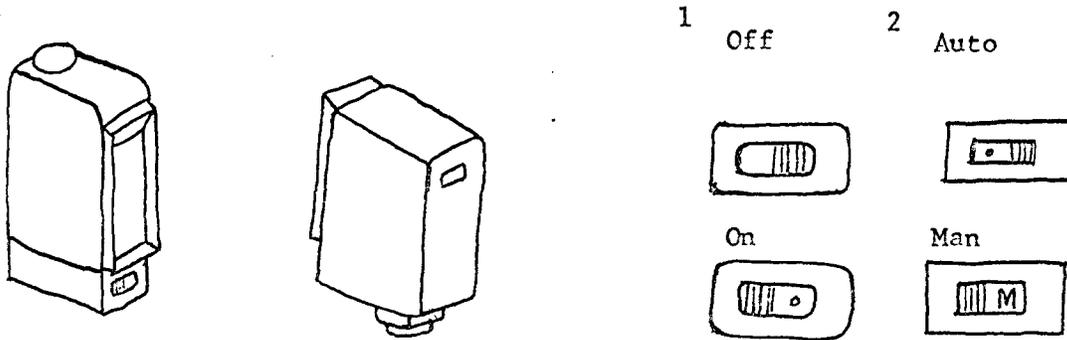


Tripod



Rewinding Film

In order to rewind your film, push the film rewind release button and turn the film rewind crank until the tension lessens. Open the camera and remove the magazine. Avoid direct sunlight!

HONEYWELL FLASH UNIT MODEL 115Flash Photography

The unit we have will synchronize at all shutter speeds.

Automatic

Set the unit for automatic, (part #2)

Set the calculator for the correct ASA setting.

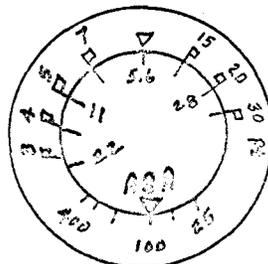
Set the f/stop for the number opposite the silver triangle on the outer ring.

For the best exposure use a range from 7 to 15 feet.

Manual

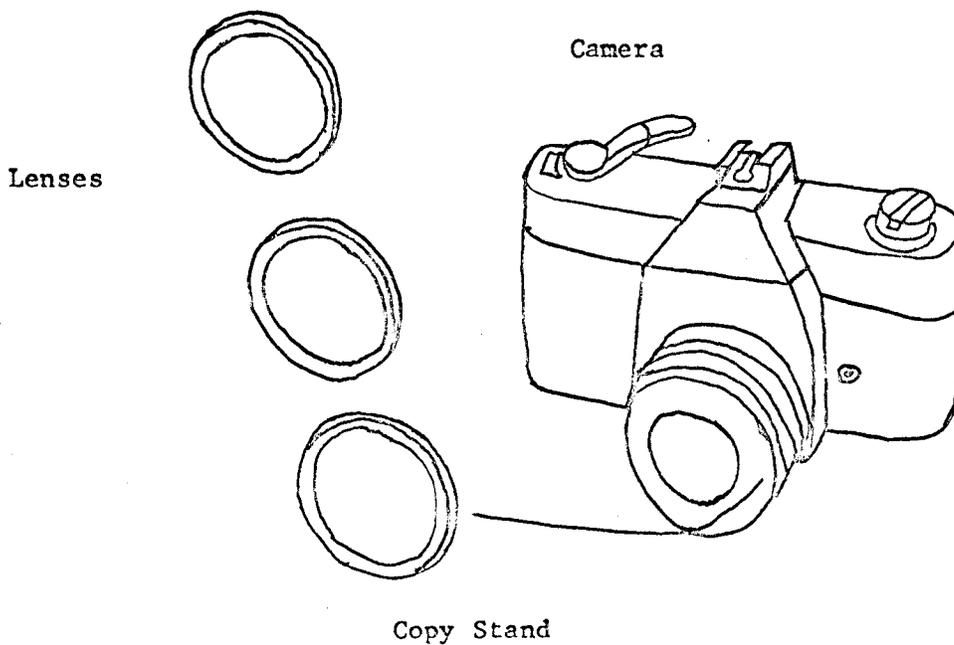
Set the unit for manual operation. Set the calculator for the correct ASA setting. Check the distance from the camera to the subject (camera range finder may be used). Set the f/stop on the camera to that opposite the flash-to-subject distance on the calculator. Turn the unit on and allow the ready light to come on.

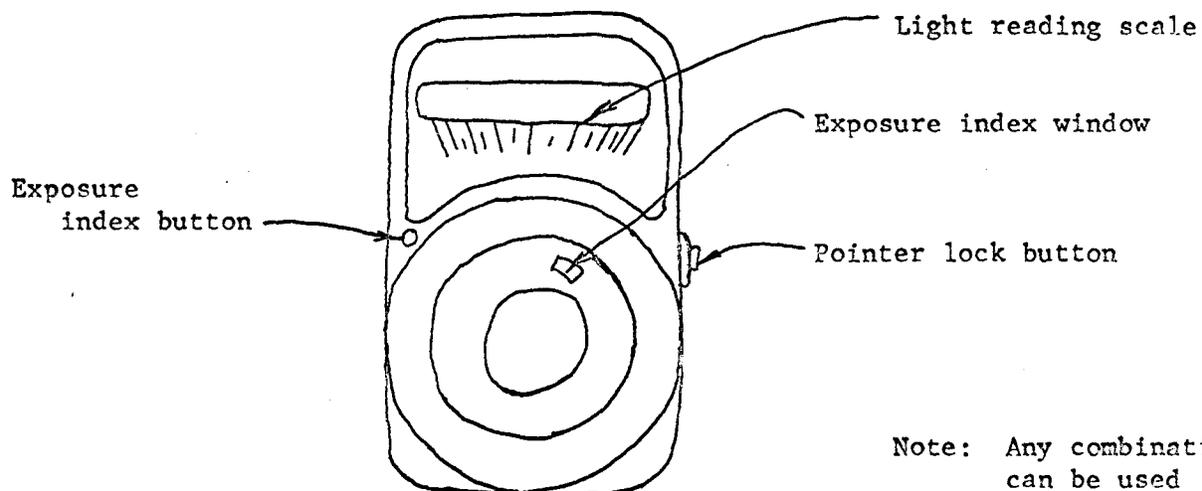
Example: Using a film with an ASA of 100 we set the calculator. If we are using automatic, the indicated f/stop to use is f/5.6. If we are using manual, the indicated f/stop to use for a distance of 5 feet is f/11.



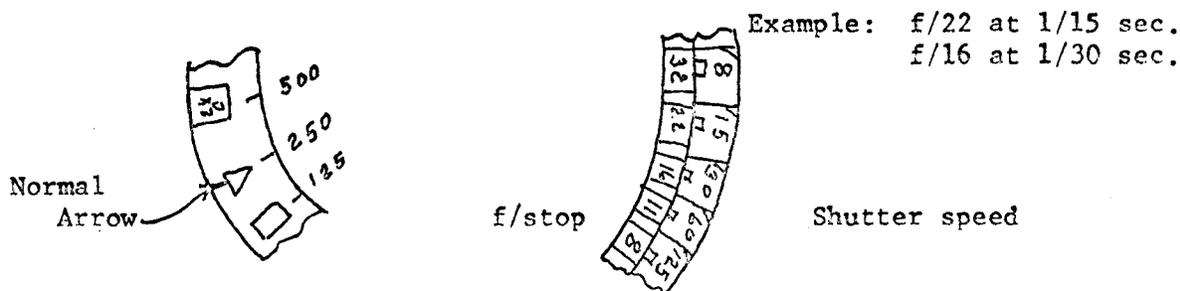
Close Up Lenses

Close up lenses are used when the distance from the camera to the subject is so short that the camera cannot focus on the subject. These lenses are often used on a camera that is held in position on a copy stand. The lenses are simply screwed onto the lens of the camera. There are three different lenses. Each lens will allow a different focal length and the lenses may be used in combination with each other. When using the lenses be careful of the fingerprints and of dropping.



EXTERNAL LIGHT METER

Note: Any combination
can be used

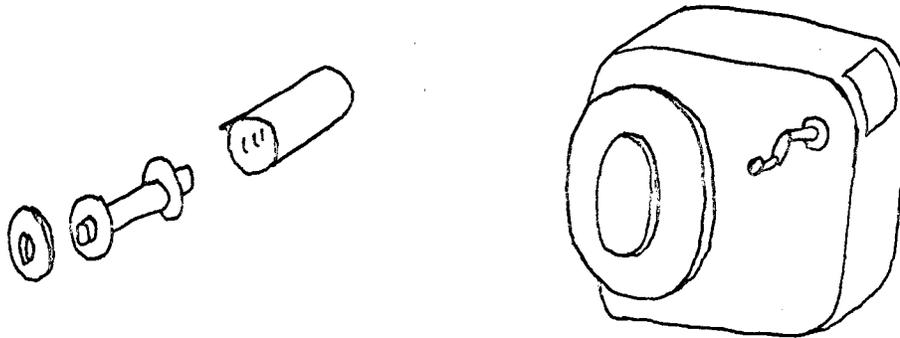


The Weston Master 6 external light meter is used to determine the f/stop and shutter speed to use in order to have the correct film exposure. The meter has two scales that are used for different degrees of light. The baffel, which is located on the back of the meter, when open sets the meter for the low scale, 125-32. The baffel, when closed sets the meter for the high scale, 16-2K. When using the meter for outdoor scenes tilt the meter downward slightly so your line of sight passes over the front edge of the pointer lock in order to exclude light sky areas.

When taking a reflected light reading, set the exposure index (ASA of the film) by depressing the exposure index button. Aim the meter and take the reading by depressing the pointer lock button. Point the normal arrow to the reading of the light meter by turning the outer dial. The camera's shutter speed and f/stop settings are found on the exposure dial.

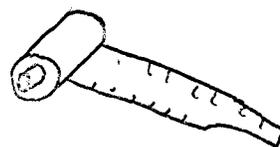
Bulk Film Loader

Buying film in a roll 100' long will not cost as much per roll as buying film one roll at the time from a store. The bulk film is loaded into a bulk film loader in complete darkness. The film can now be loaded in reuseable magazines or cassettes for use in the camera. In order to load film on a magazine you will need the bulk film loader loaded with film, a magazine, and a strip of tape. The magazine consists of three parts: the outer case, the removable cap, and the center spool. The parts are assembled as shown below.



When loading a magazine, first place a strip of tape on the spool and tape the end of the film to the spool. Slide the spool into the case and place the end cap on the open end of the magazine. With the bulk film loader located with the crank toward you and the door at your right and the extension end of the cassette located away from you. Place the handle into the bulk loader and turn 20 turns for 20 exposures. Open the door on the bulk film loader and cut the film. Cut the end of your film to form a leader for loading.

Cut notch in the side that has the extension on the magazine



ACTIVITY SHEET
The Camera

Set ASA setting for 400. Check light meter pointer and record reading at 1/25 sec.

Change ASA setting to 125 and recheck light meter reading: _____
What has happened and why?

Set ASA setting for 400 and shutter speed at 1/250 sec. Check and record reading: _____

Change setting of shutter speed to 1/60 sec. Check and record light meter reading: _____

Why did the needle point to a different f/stop?

Select an ASA setting and set the camera. Record ASA setting: _____

Select shutter speed #1 and record setting: _____

Check and record your meter pointer reading: _____

Adjust the aperture opening on the diaphragm ring until the f/stop indicated in the viewfinder lines up with the orientation dot. Change and record your shutter speed: Shutter speed #2: _____

Check in the viewfinder. Did the meter pointer change? _____

If so to what: _____

Why? _____

Load a camera with film. Set the ASA lever to the correct ASA setting. Have the instructor check the setting.

Set the diaphragm ring to "A" and check the viewfinder to determine if the meter pointer is in the warning areas. If in the safe zone proceed.

Select a subject and photograph it several times at different shutter speeds, recording each setting.

Frame No.	Shutter Speed	Indicated Depth of field	f/stop	Subject
1				
2				
3				

Select a subject and adjust the diaphragm ring for manual. Photograph the subject several times testing and recording different f/stops and shutter speeds.

Frame No.	f/stop	Shutter Speed	Indicated Depth of field	Subject
4				
5				
6				
7				
8				
9				
10				
11				

Attach flash unit to camera and adjust calculator for ASA setting: _____

Record f/stop as indicated by calculator: _____

Set shutter speed for 1/125 and photograph subject.

f/stop	Depth of Field	Subject
--------	----------------	---------

Frame #12

Set shutter speed for 1/60 and photograph same subject

f/stop	depth of field
--------	----------------

Frame #13

Select a different subject and set flash unit for non-automatic. Set and record ASA setting: _____ Has it changed? _____

Determine distance subject and record subject distance: _____

Determine f/stop and record and set camera: _____

Set shutter speed for 1/125 sec. and photograph, repeat at 1/60.

f/stop	Indicated depth of field	Subject
Frame #14		
Frame #15		

Using light meter, determine correct camera setting and photograph subject.

f/stop	Depth of Field	Shutter Speed	Subject
Frame #16			

Stop Action: Select a moving subject (ex. car, and attempt to stop it.)

f/stop	Depth of Field	Shutter Speed	Subject
Frame #17		1/250	
Frame #18		1/500	

Setting camera on a tripod, photograph a subject to determine the results. Example: moving objects, cars at night, stars

	f/stop	Depth of Field	Shutter Speed	Subject
Frame #19			B	

Using close-up rings and copy board, select a subject and photograph it.

Frame #20 Shutter Speed: _____ f/stop: _____

Your film should now have reached its end. The rapid film advance lever should be hard to advance. Do not attempt to advance it if it is hard or the film will come off of the take-up spool. Rewind the film back on the take-up spool and remove cassette.

JOB DESCRIPTION
PHOTOGRAPHER

A photographer takes and develops pictures of people, places and objects. He must have experience in taking pictures with different cameras and films, in developing enlarging and retouching of prints. A photographer's work is both artistic and technical. He must possess manual dexterity, artistic ability, creativity and a pleasing personality. The working conditions for a photographer may vary from an air conditioned studio to the middle of a war or natural disaster. Many times a photographer must travel and work long hours. He may be under pressure to reach a completion date on time and he may be in competition with other photographers for a job or assignment. Once established, a photographer's earnings are above average and a free-lance photographer has no earnings limitations.

A photographer usually has at least a high school education. Courses in math, art, physics, chemistry, business and industrial arts are recommended. After high school, a vocational school or college may be attended. However, a photographer is not required to take any post secondary education. He may leave high school and start his own business or be hired by a company as a photographer's helper and then work his way up. There are many types of photographers. Some of these types are portrait, commercial, industrial, press-photo, aerial, educational, scientific; biomedical communications, news, missile, astro, free-lance, motion picture and television photographer.

APPENDIX B

LEARNING PACKET #2

DEVELOPMENT
OF
BLACK AND WHITE FILM

Name: _____

Period: _____

Rational:

Photographers need to know how to develop film. They need to know the characteristics of different films and how the image is formed on the emulsion side of the film. They need to know how to prepare a darkroom and the chemicals for developing. They need to know how to roll film on a reel and to determine its developing time. They need to know how to reduce or increase the density of a negative if it is needed. This packet was designed to meet the needs of developing film.

Objectives:

At the completion of this packet the student will be able to:

1. Select film for use in different situations.
2. Identify the characteristics of the following types of film:
Pan X
Plus X
Tri X
3. Describe how the sensitivity of film is rated.
4. Describe how the image is formed in the emulsion of black and white film.
5. Identify the emulsion side of undeveloped and developed film.
6. Prepare a darkroom for use in development of film.
7. Prepare chemicals for use in the development of film.
8. Properly load a developing reel with exposed film.
9. Describe the effects of light and temperature on undeveloped film.
10. Properly develop a roll of exposed film.
11. Describe the purposes of the chemicals used in film development.
12. Improve the quality of a negative through increasing or decreasing its density.

DEVELOPMENT OF BLACK AND WHITE FILM

ACTIVITY SHEET

This packet covers the development of black and white film. If you feel that you understand the information you may take the post test without doing any or by doing part of the activities.

Activities:

1. Read the sheet on developing
or
Read in Exploring Careers in Industry, pages 97 through 99.
or
View the slide/tape presentation, (slides 8-1 through 6-15).
2. Practice loading exposed film on a reel until you can do it in the dark.
3. Load your exposed film on a reel and develop the film.
4. Read the sheet on Improvement of Negatives.
5. Improve your negatives if needed.
6. Take post-test on developing.

DEVELOPMENT OF BLACK AND WHITE FILM

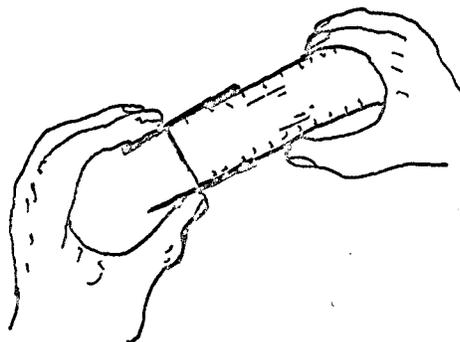
The latent image, the image that is on exposed but undeveloped film, is brought out by the process of developing. After developing, the area that has been exposed to light turns black. An area unexposed to light remains clear. There are six basic steps in developing. The first step is loading the film onto a reel. Because loading of a reel must be done in complete darkness, it is best to practice loading before attempting it in the dark.

The reels that we have are both plastic and metal. The plastic reel is a self-loading reel in which the film, after it has been removed from a magazine, is fed in from the outside grooves. Once the film is past the two ball rollers, the reel can be operated by moving the sides of the reel in a back and forth motion. This procedure is continued until the film is completely rolled onto the reel.

Plastic Reel



The other type of reel is metal. The metal reels are available in two types, a 20 exposure and a 36 exposure. The 36 exposure reel is just like the 20 exposure reel with the exception of a prong which extends to the side. When loading a metal reel, the reel is held in the left hand with the end of the wire forming the sides to the front. The film is slightly cupped in the right hand and slid into the center where it is held in place.

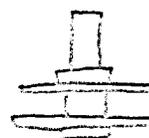


The reel is now rotated while the film is cupped. Remember to handle the film by its edges! The film should fit in the grooves formed by the spiral wire. Once the reel has been loaded, it is placed in a tank and covered with the light proof lid. The lights can now be turned on. Use the plastic tank for a plastic reel and the metal tank for a metal reel. If a plastic reel is used, be sure to place the reel around the center support and slide the ring in place in order to hold the reel in place.

Tank



Plastic reel around center support with clip in place.



The remaining steps can be done in the light. These steps are:

Developing: (See below for times)
 Stop Bath: 20 seconds
 Fixing: 5 minutes
 Washing: 20 minutes
 Photo Flo: 1 minute
 Drying: -----

The developing time for film is determined by:

1. Type of film
2. Type of developer
3. Temperature of developer

Developing chart:

Film	Developer	Index Number	Average time at 68° F.
Tri-X	Microdol-X	40½	10½ minutes
	D-76	37	7-¾ minutes
Plus-X	Microdol-X	38	8½ minutes
	D-76	34	5-¾ minutes
Pan-X	Microdol-X	38½	9 minutes
	D-76	36	7 minutes

If you need to check for a different temperature or film, see page #9 in Kodak Darkroom Dataguide.

Developing Procedure:

Check the temperature of the developer in order to determine the developing time for your film. Pour in developer and agitate tank by rotating it for the first 30 seconds. After the initial agitation, agitate for 5 seconds every 30 seconds. Allow 10 seconds for pouring your chemicals back into their containers. After using the developer, the stop bath is used for 20 seconds and then the film is fixed for 5 minutes. After fixing, the lid of the tank can be removed and the washing is done at the sink using running water.

After washing, pour 1/2 of a capful of Photo Flo into the tank containing the film and water and agitate. After 1 minute, take the reel out of the tank, remove the film and hang the film up in the darkroom to dry. Rinse the tank and reel and return all equipment and supplies to their proper places. After the film has dried, cut it into lengths of 6 exposures and place into negative envelopes. You received 4 negative envelopes with your learning activity packet.

IMPROVEMENT OF NEGATIVES

Intensification of Negatives

Sometimes through incorrect exposure or developing the density of a negative may need to be increased. A light negative will produce a dark print. Chromium Intensifier is used to increase the density of negatives. If you need to increase the density of negatives, follow the directions on the package. If you have any questions, see your instructor.

Reduction of Negatives

Sometimes, through incorrect exposure or developing, the density of a negative may need to be reduced. A dark negative will produce a light print. Farmers Reducer is used to reduce the density of negatives. If you need to decrease the density of negatives, follow the directions on the package. If you have any questions, ask your instructor.

APPENDIX C
LEARNING PACKET #3

PRINT PROCESSING AND ENLARGING

Name: _____

Period: _____

Rational:

Photographers need to know how to make a contact print or proof sheet. They need to be able to determine the exposure time when making prints, to be able to use the enlarger to make prints and to be able to make improvements in prints through different techniques which can be employed while enlarging. They need to be able to improve the quality of prints through using a polycontrast filter kit. They also need to develop photographic paper and have at least a working knowledge of the steps and chemicals involved in this developing. This packet was designed to meet the needs of the students in the making of prints and the enlarging of prints.

Objectives:

At the completion of this packet, the student will be able to:

1. Set up a darkroom for the processing prints.
2. Expose and develop a contact print.
3. Demonstrate the correct care, adjustment, and operation of an enlarger.
4. Determine the exposure time needed for a print through the use of a projection print scale.
5. Expose, enlarge and develop a print.
6. Make improvements in prints through different techniques.
7. Use a polycontrast filter kit and polycontrast paper in order to improve the quality of a print.
8. Describe the purpose of the chemicals and steps used in paper development.
9. Describe the relationship of light and dark areas on a negative to light and dark areas on a print.

PRINT PROCESSING AND ENLARGING

ACTIVITY SHEET

This packet covers print processing and enlarging. If you feel that you understand the information you may take the post-test without doing any of the activities or after doing some of the activities.

Activities

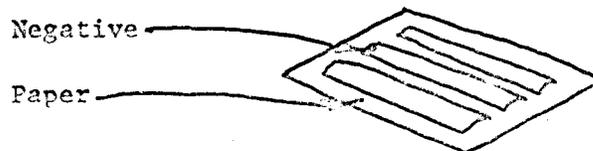
1. Read the sheet on Contact Printing
or
View the slide/tape presentation, (slides 7-1 through 7-3).
2. Read the sheet on the Enlarger
or
View the slide/tape presentation, (slides 8-1 through 8-17).
or
Read in Exploring Careers in Industry pages 101 through 102.
or
Read in Graphic Communications pages 284 through 286.
3. Read the sheet on Darkroom Preparation and the Projection Print Scale
or
View the slide/tape presentation, (slides 9-1 through 9-9)
or
Read in Graphic Communications pages 287 through 288.
4. Set up a darkroom for print processing.
5. Make a contact print.
6. Select one exposure and take a scale of it using the projection print scale.
7. Make a print of the same negative, record setting: f/stop: _____
time: _____
8. Read the sheet on Print Improvements
or
View the slide/tape presentation, (slides 10-1 through 10-5).
9. Use a #2½ polycontrast filter and polycontrast photographic paper. Expose and develop a print using the same settings as #8.
10. Use a #1 polycontrast filter and polycontrast photographic paper. Expose and develop a print using the same settings as #8.
11. Use a #4 polycontrast filter and polycontrast photographic paper. Expose and develop a print using the same settings as #8.

12. Expose and develop a print burning-in an area.
13. Expose and develop a print dodging an area.
14. Expose and develop a print cropping an area.
15. Take post-test on Print Processing and Enlarging.

CONTACT PRINTING

Contact printing is the process of producing a proof from placing the negatives in contact with the photographic paper and allowing light to pass through the negative onto the paper. The quality of the proofs will vary because the exposure period and the developing period for all of the proofs will be the same. The proofs will also be the exact same size as the negatives. The purpose of the contact print is to allow you to see the quality of your negatives and to choose which ones you would like to print.

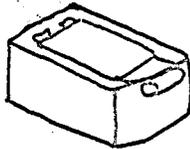
There are several methods of exposing contact prints: such as on a contact printer, with the enlarger, using natural or room light. In all of the methods the emulsion side of the negatives should be next to the emulsion side of the paper. The emulsion side of a negative can be determined by looking at the end of the negative. The negative will curl () and the emulsion side of the negative will be down. The emulsion side of the paper is the shiny side.



When using the contact printer, plug the printer into the clock and expose for 3 seconds. When using the contact printer the negatives are placed down on the top of the printer, emulsion side up, and the paper is placed into the contact printer, emulsion side down, and on top of the negatives. Note the safe light built into the contact printer. This safe light will come on when the top of the printer is raised and will go out when the top is closed. Take note of the effect of the contact printer being connected to the clock as compared with the

connection of a regular receptacle.

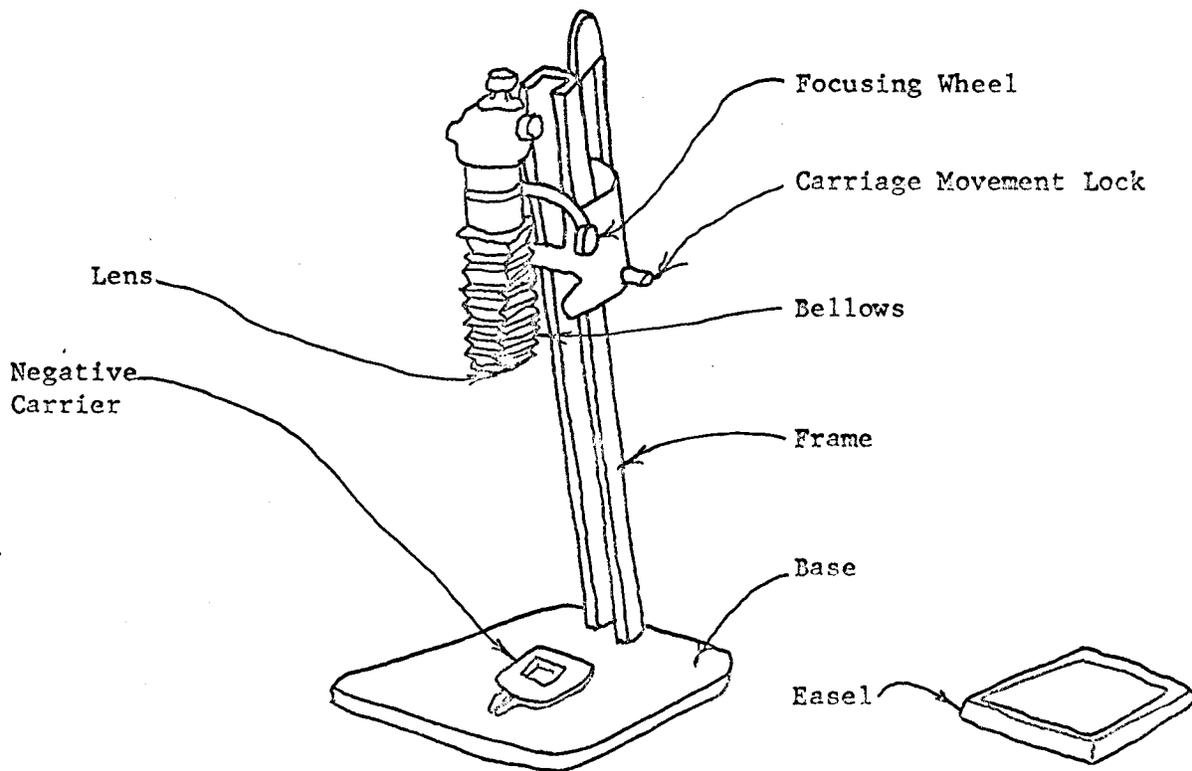
Contact
Printer



When using the enlarger as a source of light place the paper down first with the emulsion side up. Place the negatives on the paper emulsion side down. Place the glass covering over the paper and the negatives.

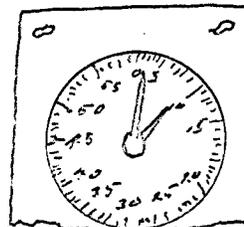
After the paper has been exposed it is developed in Dektol; the average time for good developing is 90 seconds, but this may not be the case for you. After developing, the paper is next placed into the stop bath for 20 seconds; the paper can be further developed at this point if desired. After the stop bath, the paper is placed in the fixer for five minutes. It is now safe to turn on the lights. After the print has been fixed, it is placed into hypo clearing agent for 2 minutes and then washed for 10 minutes. Drying for different finishes will be covered later.

THE ENLARGER



The enlarger is used to hold and pass light through a negative and lens onto the base which holds the easel and photographic paper. The head may be raised or lowered to produce different sized prints. The bellows may be moved by turning the focusing wheel in order to bring the image into focus. The enlarger is usually hooked into a timing clock to turn off automatically.

Timing Clock



The clock can be set for one second through one hour. It can also be set to focus in order to focus the enlarger. Only have the clock on when you want to expose the paper. When the clock is used on time, turn the clock off after the enlarger goes out. This will prevent an accidental exposure of paper.

DARKROOM PREPARATION

Arrange your trays on the counter as shown below:

Developer Stop Bath Fixer Hypo Wash

Our wash tray will be simply a holding tray. Your prints will have to be taken out to the sink and washed in running water. Do not allow your prints to build up in the wash tray.

Mix the liquid Dektol with water. The ratio is 1:1.

Pour stop bath, fixer, hypo and water in the appropriate trays.

Position easel, negatives, negative carrier, paper, polycontrast filter kit, and projection print scale near the enlarger. Turn on the safe light and turn off the white lights.

PROJECTION PRINT SCALE

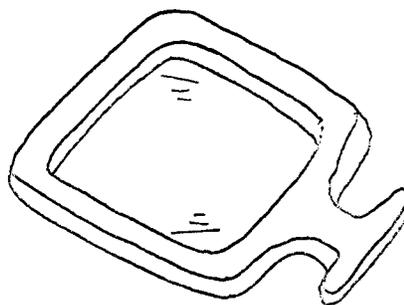
The projection print scale is a sheet of plastic divided into wedge sections. These sections vary in density. In order to use the scale, place a negative in the negative carrier and the negative carrier into the enlarger. Focus the enlarger, using the largest lens opening. Select a lens opening and place the photographic paper under the projection print scale. Expose for 60 seconds and develop for 90 seconds. After developing, place in stop bath and fixer for the required amount of time. The best exposure time is obtained by a visual examination of the print. The best looking wedge section will contain the best exposure time. If the print scale is ~~to be~~ saved it should be placed in hypo and then washed. When developing print from this information the developing time should be 90 seconds; however, it may be allowed to vary somewhat.

PRINT IMPROVEMENTS

Prints may be improved by several methods. The methods include varying the contrast of the entire print, removing distortion, removing an undesirable portion and increasing or decreasing the amount of exposure to a certain portion of the print.

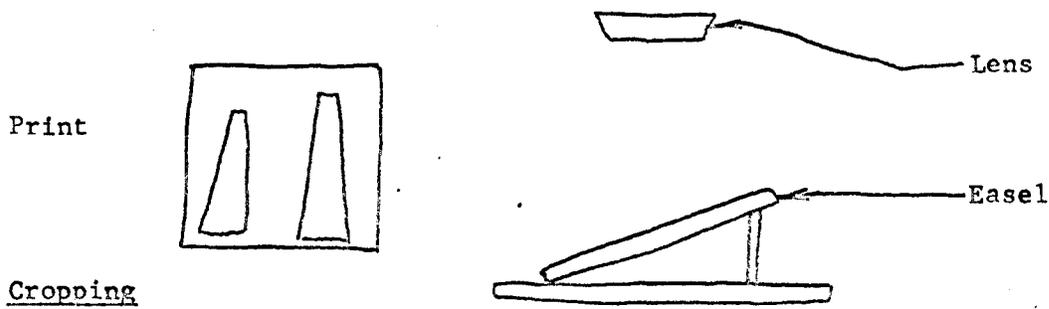
Contrast

The contrast of a print can be improved by using polycontrast paper and a polycontrast filter kit. Use a #2 or #2½ filter first and, from the results, decide if you need to go up or down with the filters. There are 7 filters in the kit which range from a #1 to a #4 by halves. We do not have an exposure time so make a projection print scale with the filter. The filter is placed under the lens on the enlarger. Do not touch the faces of the filter. After using the filter, return it to its place in the box.



Distortion

Distortion appears as converging lines in a print. Distortion can be removed by setting the easel at an angle to the lens of the enlarger. When this is done, the lower portion of the print will need a longer exposure period than the top.

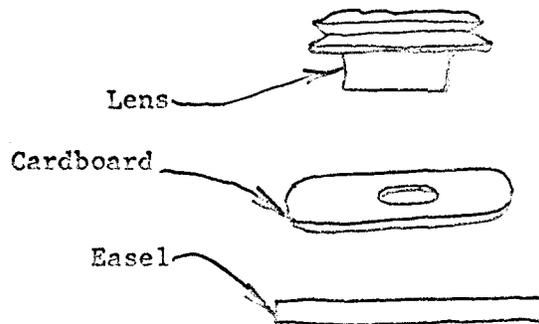


Cropping

Cropping is the process of enlarging the negative until the undesirable portions of the image are located off the photographic paper. The enlargement is done by raising the head of the enlarger along the frame.

Burning-in

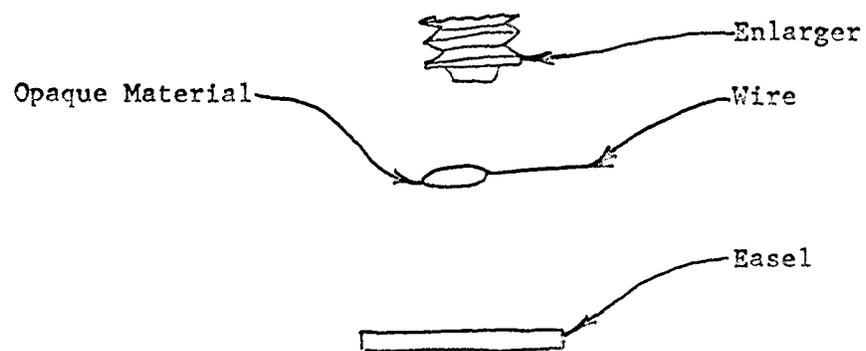
Burning-in is the process of exposing a lighter area on the photographic paper to more light than the rest of the print. In order to burn-in an area, cut a hole of the needed size and shape in a piece of cardboard. The cardboard is held between the lens and the paper allowing the light to fall on the area needing additional exposure. Move the cardboard around to allow the burned-in area to blend into the remainder of the print.



Dodging

The process of dodging is the reverse of burning-in. Dodging is used to hold back local shadow areas that would normally print too dark. In order to dodge, cut a piece of opaque material to approximately the shape of the area to be dodged and about one-half the size. The shape is attached to a piece of wire. When dodging, the device must be in constant motion in order for the dodged area to blend in with the remainder

of the print.



APPENDIX D
LEARNING PACKET #4

FINISHING AND DISPLAYING PRINTS

Name: _____

Period: _____

Rational:

Finishing, toning, touching-up, mounting, and displaying prints are very important to photographers. Through these and previous activities, the photographers produce finished products. It is the purpose of this packet to provide the student with the activities needed to meet these needs.

Objectives:

At the conclusion of this packet the student will be able to:

1. Dry prints to a matte finish.
2. Dry prints to a gloss finish.
3. Tone prints.
4. Mount prints.
5. Display prints.

FINISHING AND DISPLAYING PRINTS

ACTIVITY SHEET

This packet covers finishing, toning, mounting and displaying of prints. If you feel that you understand the information you may take the post-test without completing any of the activities or after completing only some of the activities. After completing all of the necessary activities in this unit there is a unit test that covers all of the information contained in the four learning packets. After completing the test you may go to another unit or you may continue in photography for the remainder of the six weeks by completing activity number 10.

Activities

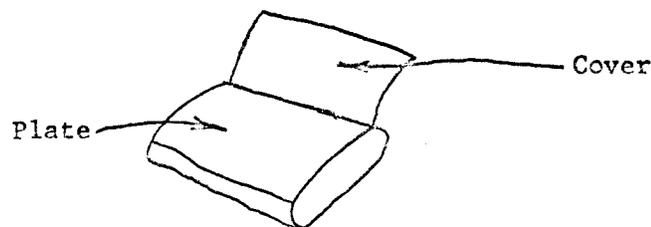
1. Read the sheet on Toning Prints.
2. Read the sheet on Finishing Prints and Mounting Prints
or
View slide/tape presentation, (slides 11-1 through 11-4).
or
Read in Graphic Communications pages 297 through 298.
3. Tone a print.
4. Dry a print to a matte finish using a blotter.
5. Dry a print to a matte finish using the print dryer.
6. Dry a print to a glossy finish using the print dryer.
7. Mount a print using rubber cement.
8. Select and arrange several prints for display.
9. Take post-test.
10. (Optional) Read and complete the sheet on Photo Essay.

TONING PRINTS

Prints are toned to produce different effects to a print (such as a feeling of warmth or to touch up an area). When the entire print is to be toned it should be toned after it has been washed and before it has been dried. Commonly used toners are sepia, blue and brown tones. When toning a print, follow the instructions included with the toner. When touching up or spot-toning a print, the print should be dry. The touch up material is water based and must be blended into an area. This is usually done when a spot appears on the print which does not belong, such as those produced by dust on the negative when enlarging.

FINISHING PRINTS

Photographic prints may be dried in different manners in order to produce different finishes. The prints may be dried to a matte or dull finish or to a glossy or shiny finish. There are two methods we use to dry prints to a matte finish. In the first method, the wet but well drained prints can be placed between the blotter and allowed to dry. In the second method, the drained prints are placed in the print dryer with their faces toward the canvas cover. When using an electric print dryer, the prints remain in the dryer until they pop loose when the cover is opened. We can use both sides of our print dryer.



In order to dry a print to a glossy finish, the print should be soaked in a glossy solution before being placed in the print dryer with their faces away from the cover. The easiest method of producing glossy

prints is to use the RC photographic paper which, when dried in air, will produce glossy finishes.

Mounting Photographs

At the present time we are only equipped to mount photographs to mounting boards by the use of rubber cement. Before displaying any prints, first use a mock layout in order to determine the best locations. Mark off their locations and attach them.

PHOTO ESSAY

A photo essay is the presentation of a message or story through the use of photographs. Very few, if any, words are used in a photo essay.

Rational:

This activity is really a learning packet in itself. The rational behind this packet is to provide an opportunity for further exploration into the field of photography if desired.

Objective:

At the completion of this activity the student will be able to demonstrate with at least 90 percent accuracy, skills used in and understanding of, processes used in photography which have been covered in previous activities.

Activities:

There is no post-test in this activity or packet. The undertaking of this activity is optional and will not be used to lower a grade.

1. Select a topic for a pictorial essay and have it approved by the instructor. After approval, compose, photograph, develop, print, finish and display the prints needed to cover the topic.

Film Used:

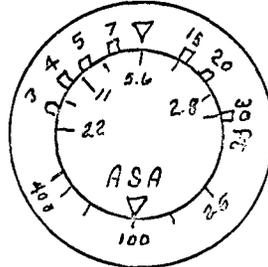
ASA:

Frame #	Shutter Speed	f/stop	Subject
1.			
2.			
3.			
4.			
5.			
6.			
7.			

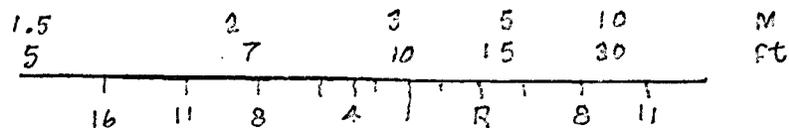
APPENDIX E
LEARNING PACKET AND UNIT TESTS

10. _____ A camera should be placed on a tripod when its shutter speed is:
A. 125. B. 250. C. 2.8. D. 15.
11. _____ For a time exposure the shutter speed ring is placed on:
A. "A". B. "B". C. 2.8. D. 100.
12. _____ A camera is set for automatic photography and the light needle is pointing to the upper warning mark. This indicates that there is:
A. enough light. C. an excessive amount of light.
B. not enough light. D. the subject is not in focus.
13. _____ If the camera is set for automatic photography and the light needle is pointing to the lower warning mark, this indicates that there is:
A. enough light. C. an excessive amount of light.
B. not enough light. D. the subject is not in focus.

For #14 and #15, use the sketch of the calculator found below.



14. _____ The f/stop to use if the unit is set for automatic is:
A. f/5.6. B. f/8. C. f/11. D. f/16.
15. _____ The f/stop to use if the flash is set for manual operation if the distance from the camera to the subject is 4 feet is:
A. f/5.6. B. f/8. C. f/11. D. f/16.
16. _____ An f/stop of f/8 when compared to an f/stop of f/11 will admit:
A. twice as much light. C. three units more light.
B. half as much light. D. three units less light.
17. _____ Using the setting found below, the indicated depth of field for an f/stop of f/4 is:
A. 6'-∞. B. 7'-30'. C. 8'-17'. D. 9'-14".



18. _____ Using the setting found above, the indicated depth of field for an f/stop of f/16 is:
A. 6'-∞. B. 7'-30'. C. 8'-17'. D. 9'-14".

19. _____ If a camera is correctly set and the f/stop is lowered (by number) the shutter speed should:
- A. be increased.
 - B. be decreased.
 - C. remain the same.
 - D. be set for 500.
20. _____ When an exposure is desired and the distance from the camera to the subject is less than 2 feet, the accessory to be used with the camera's lens is:
- A. a tripod.
 - B. flood lamps
 - C. a set of close-up lenses.
 - D. a bulk film loader.

THE CAMERA AND ITS ACCESSORIES
Post-Test
Answer Sheet

1. A
2. B
3. C
4. C
5. B
6. A
7. D
8. D
9. A
10. D
11. B
12. C
13. B
14. A
15. D
16. A
17. D
18. A
19. A
20. C

CHURCHLAND HIGH SCHOOL
 Industrial Arts Department
 World of Communications I
 Photography
 Development of B/W Film
 Post-Test

Name: _____

Date: _____

Directions: In the space to the left of the following statements place the letter of the word or the words that best completes the statements.

1. ____ You have to make a portrait of someone. The film to use is:
 A. Tri-X. B. Plus-X. C. Pan-X. D. Royal Pan-X.
2. ____ You have to photograph a baseball game. The film to use is:
 A. Tri-X. B. Plus-X. C. Pan-X. D. Medallist.
3. ____ You have to photograph an outdoor, daylight parade. Some of the shots will have to be enlarged somewhat. The film to use is:
 A. Tri-X. B. Plus-X. C. Pan-X. D. Medallist.
4. ____ The film that is the most sensitive to light is:
 A. Tri-X. B. Plus-X. C. Pan-X. D. Ortho.
5. ____ When film curls up in the center, , the emulsion side is:
 A. up. B. down. C. on the side. D. in the center.
6. ____ The ASA of Tri-X is:
 A. 32. B. 100. C. 125. D. 400.
7. ____ The ASA of Plus-X is:
 A. 32. B. 100. C. 125. D. 400.
8. ____ The ASA of Pan-X is:
 A. 32. B. 100. C. 125. D. 400.
9. ____ The developer that can be used for the developing of film is:
 A. Microdal-X. C. Hypo.
 B. Dektol. D. P. F. S.
10. ____ The chemical or solution that hardens the emulsion on the film in order that the negative can be exposed to light is:
 A. stop bath. C. Microdal-X.
 B. fixer. D. Photo Flo.
11. ____ The chemical or solution that stops the action of the developer is:
 A. stop bath. C. Microdal-X.
 B. fixer. D. Photo Flo.
12. ____ The chemical or solution that helps to prevent water spots on the negative is:
 A. stop bath. C. Microdal-X.
 B. fixer. D. Photo Flo.

13. _____ After being developed, the film should be fixed for a period of:
A. 20 seconds. C. 5 minutes.
B. 1 minute. D. 20 minutes.
14. _____ After fixing, the film should be washed for a period of:
A. 20 seconds. C. 5 minutes.
B. 1 minute. D. 20 minutes.
15. _____ If the developing time for a certain film is 8 minutes at 68 degrees, and the temperature of the developer is 70 degrees, the developing time will be:
A. increased. C. remain the same.
B. decreased. D. 10 minutes.
16. _____ When developing film, the film is rolled onto a:
A. tank. B. rod. C. canister. D. reel.
17. _____ When loading film for developing, the film must be loaded:
A. in the light. C. in a cool area.
B. in the dark. D. under water.
18. _____ After the negatives have dried, they should be:
A. rolled on a reel. C. placed in negative envelopes.
B. placed in a film magazine. D. placed on an easel.
19. _____ The time required for washing of film is:
A. 20 seconds. C. 5 minutes.
B. 1 minute. D. 20 minutes.
20. _____ The time required for Photo Flo is:
A. 20 seconds. C. 5 minutes.
B. 1 minute. D. 20 minutes.

DEVELOPMENT OF BLACK AND WHITE FILM
Post-Test
Answer Sheet

1. C
2. A
3. B
4. B
5. B
6. D
7. C
8. A
9. A
10. B
11. A
12. C
13. C
14. D
15. B
16. D
17. B
18. C
19. D
20. B

9. ____ If a negative is slightly out of focus and you wish to make a print, the print:
A. can be made sharp by adjusting the enlarger.
B. can be made sharp by using a polycontrast filter.
C. can be made sharp by cropping it.
D. cannot be made sharp.
10. ____ The process of restricting the amount of light that reaches a certain area of the paper during exposure is called:
A. burning-in. C. dodging.
B. cropping. D. toning.
11. ____ The process of allowing extra light to reach a certain area of the paper is called:
A. burning-in. C. dodging.
B. cropping. D. toning.
12. ____ The process of enlarging a negative in order that some undesirable aspect of the negative falls off of the paper is called:
A. burning-in. C. dodging.
B. cropping. D. toning.
13. ____ When negatives that are flat or are producing no contrast are to be used, the accessory that can be used on the enlarger with a certain type of paper is the:
A. polycontrast filter. C. O. C. filter.
B. Venetting tool. D. graduate.
14. ____ The chemical solution that sets the emulsion on the photographic paper is:
A. hypo. C. fixer.
B. Dektol. D. stop bath.
15. ____ The chemical solution that develops the paper is:
A. hypo. C. fixer.
B. Dektol. D. stop bath.
16. ____ The chemical solution that stops the action of the developer is:
A. hypo. C. fixer.
B. Dektol. D. stop bath.
17. ____ The chemical solution that helps to remove the fixer and thus reduce the washing time is:
A. hypo. C. Photo Flo.
B. Dektol. D. stop bath.
18. ____ Arrange the following into their correct order:
A. hypo. B. stop bath. C. develop. D. wash. E. fix.
1.
2.
3.
4.
5.

19. _____ The amount of time a print remains in the hypo is:
A. 20 seconds. C. 2 minutes.
B. 60 seconds. D. 5 minutes.
20. _____ The amount of time a print remains in the wash after going
through a hypo solution is:
A. 10 minutes. C. 30 minutes.
B. 20 minutes. D. 60 minutes.

PRINT PROCESSING AND ENLARGING
Post-Test
Answer Sheet

1. C
2. C
3. A
4. A
5. D
6. B
7. D
8. A
9. D
10. C
11. A
12. B
13. A
14. C
15. B
16. D
17. A
18.
 1. C
 2. B
 3. E
 4. A
 5. D
19. C
20. A

CHURCHLAND HIGH SCHOOL
Industrial Arts Department
World of Communications I
Photography
Post-Test
Finishing and Displaying Prints

Name: _____

Date: _____

Directions: After carefully reading the following statements, place the letter of the word or words that best completes them in the space provided to the left.

1. _____ Prints may be toned in two manners, one is by complete toning and the second is by using:
A. rubber cement. C. spotting colors.
B. water. D. crayons.
2. _____ Prints that are to be dried to a glossy finish in an electric print dryer are placed:
A. face to the cover. C. face to face.
B. face away from the cover. D. back to back.
3. _____ Prints that are to be dried to a matte finish in an electric print dryer are placed:
A. face to the cover. C. face to face.
B. face away from the cover. D. back to back.
4. _____ Prints that are to be dried to a matte finish when an electric print dryer is not used are placed in a:
A. blotter. C. silk screen.
B. brayer. D. draft.
5. _____ Prints that are to be dried to a glossy finish when an electric print dryer is not used should be on _____ paper:
A. Medallist. C. RC.
B. AZO. D. Polycontrast.
6. _____ The cement to use when prints are to be mounted by this method is:
A. contact. C. paste.
B. "Elmer's". D. rubber.
7. _____ Prints that are to be mounted are usually mounted on:
A. mounting boards. C. construction paper.
B. plywood boards. D. glass.

FINISHING AND DISPLAYING PRINTS
Post-Test
Answer Sheet

1. C
2. A
3. B
4. A
5. C
6. D
7. A

CHURCHLAND HIGH SCHOOL
Industrial Arts Department
World of Communications I
Photography
Unit Test

Name: _____

Date: _____

Directions: After reading the following statements carefully, place a T in the provided spaces if the statements are true and place a F in the provided spaces if the statements are false.

1. _____ The simplest of all cameras is the box camera.
2. _____ The instamatic camera received its name because it develops its own prints instantly.
3. _____ One of the most versatile types of cameras is the pin hole.
4. _____ The opening in a lens is referred to as the aperture opening.
5. _____ All film has the same ASA number.
6. _____ The larger the lens opening on a camera, the shorter the depth of field will be.
7. _____ The shutter speed of a camera has a direct relationship to the aperture opening.
8. _____ A f/stop of f/11 has a larger opening than a f/stop of f/8.
9. _____ A shutter speed of 125 is one-half as long as a shutter speed of 250.
10. _____ If a camera is correctly set and the shutter speed is raised, the f/stop should also be set on a higher number.
11. _____ The accessory that is attached to the camera's lens when taking close ups is a copy stand.
12. _____ Film can be loaded on a film magazine from a bulk film loader.
13. _____ When the shutter speed on a camera is 1/15th of a second, the camera should be attached to a tripod.
14. _____ The instrument that is used to determine the f/stop for a camera is a light meter.
15. _____ A flash unit is used to provide light for outdoor, daytime pictures.
16. _____ When loading film onto a reel, the film can be loaded under safe light conditions.
17. _____ The emulsion side of film is the dull side.

18. _____ The developer that can be used when developing film is D-76.
19. _____ A good film to use when taking action shots is Pan-X.
20. _____ A good film to use when taking shots in restricted or limited light is Tri-X.
21. _____ After film has been developed, stop bath is used to stop the developing action.
22. _____ Once stop bath has been added to film, the film can be taken out of the tank and examined.
23. _____ Fixer is used to harden the emulsion of the film.
24. _____ If the fixer is used to harden the emulsion on film, it should be washed off.
25. _____ Fixer that is left on film will turn a yellowish color in time.
26. _____ Negatives are placed in negative envelopes for protection.
27. _____ After the film has been completely developed, it is a positive of the print that you can make.
28. _____ When developing film, the temperature of the developer is an important factor in the developing time.
29. _____ Developer that is below 68°F. will decrease the developing time of the film.
30. _____ The type of filter that should be used with photographic paper is an O. C. filter.
31. _____ A proof sheet is another name for a contact print.
32. _____ When making a contact print, the emulsion side of the negative should not touch the emulsion side of the paper.
33. _____ The negative, when placed in an enlarger, is placed in the easel first.
34. _____ The time required for an exposure can be determined by using a projection print scale.
35. _____ When using a projection print scale, the exposure time is 90 seconds.
36. _____ A dark area on a negative will produce a dark area on the print.
37. _____ The developer to use when developing prints is Microdol.
38. _____ The purpose of using hypo clearing agent when developing prints is to reduce the washing time.

39. _____ After a print has been placed in stop bath, the print can be developed further.
40. _____ A good average time for developing of prints is 90 seconds.
41. _____ A polycontrast filter can be used on Medallist paper.
42. _____ Dodging is a process that allows more light to fall on a limited area.
43. _____ Burning-in is a process that allows less light to fall on a limited area.
44. _____ It is possible to remove certain undesirable aspects from a negative by cropping.
45. _____ If a negative is out of focus, it can be brought into focus on the enlarger.
46. _____ When an entire print is to be toned, the print should be wet.
47. _____ When a small area is to be touched up on a print, the print should be dry.
48. _____ A matte finish can be produced on the print dryer by placing the print with its face away from the canvas cover.
49. _____ A glossy finish can be produced on the print dryer by placing the print with its face toward the canvas cover.
50. _____ A good method to use in order to produce a glossy finish on a print is to use RC paper.

BLACK AND WHITE STILL PHOTOGRAPHY
Unit Test
Answer Sheet

- | | |
|-------|-------|
| 1. T | 26. T |
| 2. F | 27. F |
| 3. F | 28. T |
| 4. T | 29. F |
| 5. F | 30. T |
| 6. T | 31. T |
| 7. T | 32. F |
| 8. F | 33. F |
| 9. F | 34. T |
| 10. F | 35. F |
| 11. F | 36. F |
| 12. T | 37. F |
| 13. T | 38. T |
| 14. T | 39. T |
| 15. F | 40. T |
| 16. F | 41. T |
| 17. T | 42. F |
| 18. T | 43. F |
| 19. F | 44. T |
| 20. T | 45. F |
| 21. T | 46. T |
| 22. F | 47. T |
| 23. T | 48. F |
| 24. T | 49. F |
| 25. T | 50. T |

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