

## AUDIO VISUAL EDUCATION

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Module II

Non Projected Visual Aids.

Unit 5

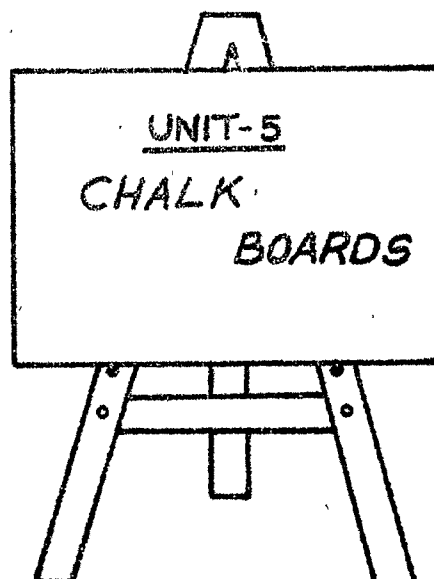
Chalk Boards  
-----Instructional Objectives:

1. Identify five types of chalkboards commonly found.
2. State five advantages of chalkboards.
3. Explain two needs of printing letters while writing on chalkboard.
4. Distinguish between progressive, strip and exploded diagrams.
5. List the four qualities of black board summary.
6. Draw diagrams combining horizontal, vertical, angular and curved lines using correct stroke techniques.
7. Identify and use correct techniques used for straight, horizontal, vertical and curved lines.
8. Organise and illustrate a topic with diagrams on chalkboard maintaining speed, legibility and correct layout.
9. State four essential characteristics of chalkboards.
10. Design and draw diagrams using (1) template and (2) pounce methods.
11. Plan a well organised chalkboard summary on a topic of the trade using colour and illustrate it on the chalkboard.

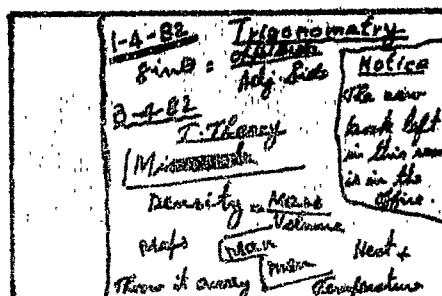
## CHALK BOARDS:

### INTRODUCTION

The least expensive, most readily available teaching tool to any instructor or teacher in our country today is the Chalkboard, or generally known to all of us as Blackboard. It is traditionally made with black coloured surface. Do you need any training or guidance in the use of the chalkboard? Or is it superfluous? As with any other tool, certainly skill is needed to obtain from the chalkboard maximum usefulness. Do you agree?



Is the chalkboard intended to be used as a scramble of irregular, unplanned scrawls, like the one shown in this figure? Is it to be a tool of showing dusty record of yesterdays assignments? Can you think of using the chalk board as an ever changing centre of dynamic communication, showing your creative skill and competence? Today, the chalkboard is still the most important tool available to any teacher in the classroom. In your school or institute, can you think of using the chalkboard in anyother situation than the classroom?



## TYPES OF CHALKBOARD

Let us see the chalkboards that are available in the Central Training Institute. You have the wallmounted chalkboard in most the rooms like the one in the POT Class & Audio Visual Room. This type of mounting is more suitable where adequate wall spacing is available, facing the class. You can even prepare a masonry wall chalkboard surface, as we have in most of our classrooms. However where the space is limited, the sliding chalkboard is used. We have the sliding chalkboard in the Drawing Hall, in S-7 - Hall, etc. The sliding chalkboard can have two or more chalkboards moving vertically in guided channels. While one chalkboard is used, the other moves up. If you want to have a drawing, you can make one in advance, raise the chalkboard, and use the other one, for writing explanations, calculations, etc., and trainees can continue to look at the drawing whenever reference is made to it.

If space is available, the chalkboard can slide sideways also. Another common chalkboard is the portable type which is mounted on a frame or an easel. You can see number of chalkboards outside the A.V. Workshop on which you will be practicing the chalkboard work, and the machineshop as well as old workshop in our Institute. These are movable, and used at convenient places, according to the necessity. Another fairly common type is the roll up type which can be used over an easel or at convenient places from where they can be hung. You might have seen a few of these in drawing section. Special boards for graph, drawing and isometric sketching are also available. These are available in the Electrical, Radio Television and Draughtsmen sections. Revolving chalkboards and chalkboard on wheels like the boards in the new workshop can also be used with advantage. These help

temporary arrangement in classroom, demonstration rooms or wherever necessary. Those of you who have not seen these, are advised to go and see for yourself all these types. Some of them are made of wood and some are made of glass. The roll up type is made of canvass. You may turn to next page of this unit, where some of the types mentioned here are drawn.

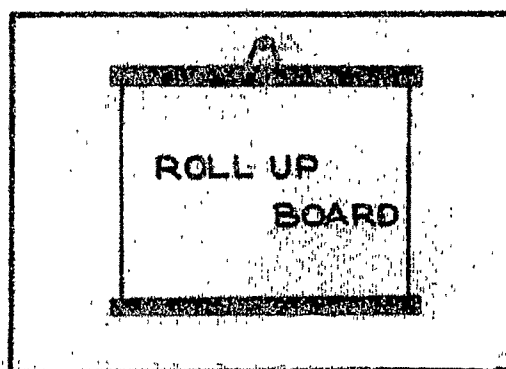
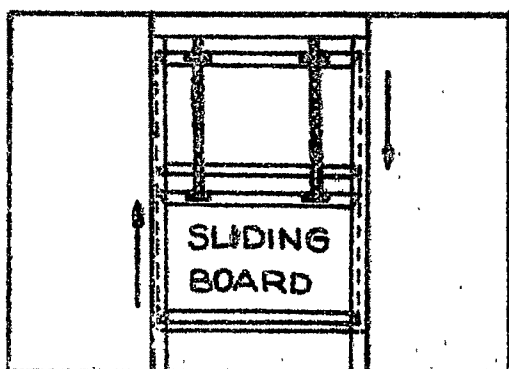
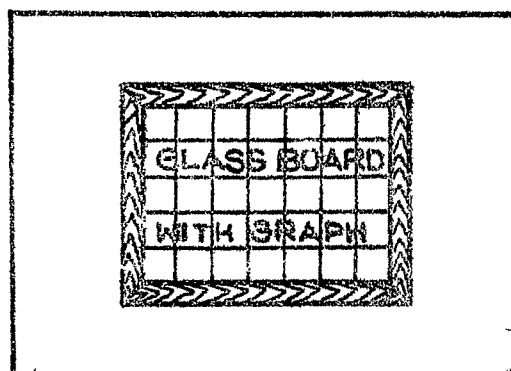
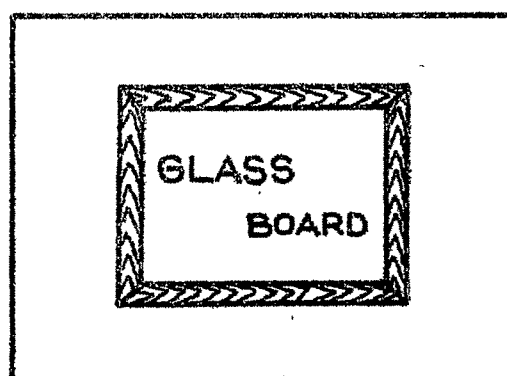
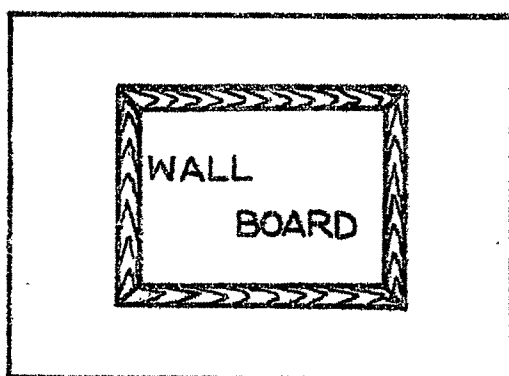
Can you from your experience, think of the specific applications of each type of chalkboard explained here? Discuss among yourselves and write and submit to your instructor the response as your first assignment of this unit.

#### COLOUR OF CHALKBOARD

Traditionally chalkboards are generally black in colour in many of our schools and colleges. We have green, yellow and white chalkboards in our Institute. We have also installed white enamel board recently in the Principal's room. A number of white boards are available in the Advanced Training Institute also. You are advised to go and see all these, if you have not already noticed them. In addition, you have also red, brown and blue chalkboards. Of all these the green or emerald green boards are recommended by experts, as they provide more contrast and less eye strain. They have also a pleasing look.

You cannot use the chalkboard without chalks. You also require an eraser or what we usually call as duster. Use different colour chalks on different chalk boards available in the Institute and experience for yourself, the difference. Now

the enamel boards that are available, in the market, are highly polished and you cannot use chalk on them. Hence we write with felt pens. Of course the white board provides you ample opportunity to use different colours, which will give exact and real colour effect. You may experience for yourself the different effects on these chalkboards. Can you think of any other use for the metallic chalk board?



## USE OF CHALKBOARD

Often, many teachers and administrators feel that no special knowledge or skill is required to use effectively the chalkboard. Chalkboard is not meant for writing what all you talk to your trainees. It is also not a sheet or scrap paper. Instructors can give better attention, and use the only commonly visual aid available to most of us. Chalkboard is a visual tool, and like any other tool there are specific areas where chalkboards' use is recommended.

- \* CHALKBOARD HELPS YOU BUILD YOUR EXPLANATIONS WITH POINTS WRITTEN ONE BY ONE, IN LOGICAL ORDER.

You can reduce your verbal explanations to the minimum, and add at the right time, the points or subheadings, each time you start on a new point.

- \* CHALKBOARD HELPS YOU WRITE THE STUDENT'S POINT OF VIEW, WHICH IS USEFUL FOR DISCUSSION AND CLARIFICATION.

During discussion, you may call for the student's views, write the salient point raised by them, and discuss one by one or at the end consolidate the discussion, to clear all related points.

- \* CHALK BOARD HELPS TO PRODUCE A PICTURE BY DOT DUSTING OR POUNCE METHOD.

Complicated diagrams can be made in advance on the Chalkboard by pounce or dot dusting method, which will be invisible to students when they assemble. The instructor can start drawing the diagram during the class hours, as if he is drawing a fresh.

- \* CHALKBOARD ROLL UP TYPE CAN BE USED TO WRITE IN ADVANCE AND USED AT THE APPROPRIATE TIME IN THE CLASS SESSION.

The instructor can write quizzes, diagrams, questions etc, on a roll up chalkboard in advance, and uncover it at the appropriate time during classroom session for use.

- \* CHALKBOARD PERMITS POSSIBILITIES OF THE TRAINEES BEING ASKED TO WORK PROBLEMS, DRAWINGS ETC., ON IT.

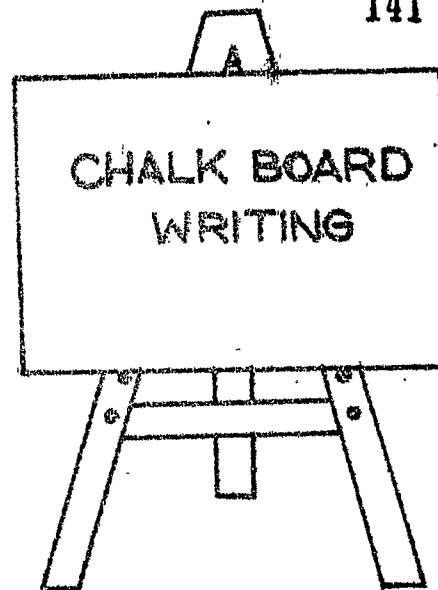
Trainees may be asked to do problems, draw drawings etc. on the chalkboard. Chalkboard work by trainees permits immediate feedback information on both accuracy of the work and knowledge of procedures.

#### LEARNER ACTIVITIES:

1. List the types of chalkboards available at the Central Training Institute, Madras.
2. From your own knowledge or experience, say which type of board, can be used as a magnetic board in addition to its being used as a chalkboard.
3. List at least three materials that can be used as chalkboard surface.
4. Which one of the following colours is best suited for the blackboard surface, and say why?  
a. Black   b. Green   c. Yellow   d. white.
5. Which of the above four colours will permit best colour visibility, when coloured chalks are used?
6. Among the different types of chalkboards which one permits advanced planning activity, yet not seen by trainees when they assemble in the class.

7. List five uses of chalkboard.
8. In what ways you could use the chalkboard for the trainee activity?
9. Think of an activity, for the demonstration of a job on the shop floor, and say in what way you propose to use the chalk board.
10. List any two ways of tracing images from complicated visuals on the Chalkboard.

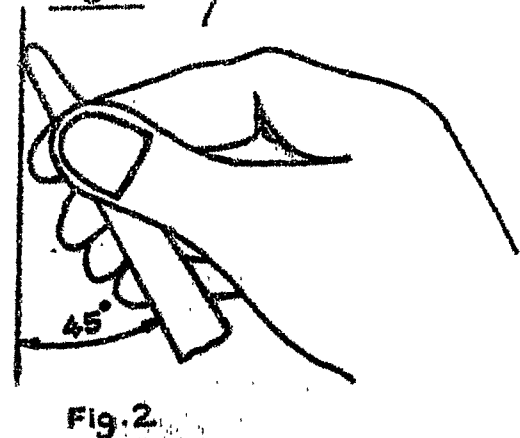




We propose to give you in this lesson few hints or points for chalkboard writing. Each of the points is very important, no one point less important than the other.

#### CHALK HOLDING

1. Hold the chalk between the thumb and the fingers. The non working or broad end of the chalk should be pointing towards the palm of the hand. fig.1.
2. The angle between the chalk and the chalkboard must be about  $45^\circ$ . If the angle is increased the chalk does not run over the chalkboard relatively free? fig.2.
3. The fingers and the thumb hold the chalk like a chuck, and do not contribute to forming the strokes.
4. The third and fourth finger-nails may be used as a steady for special lines.



## STROKE TECHNIQUE:

1. The strokes must be firm, and not wavy, faint or heavy. fig. 1..
2. Develop the habit of slightly rotating the chalk as the stroke proceeds. fig. 2 & 3..
3. Change to a new facet of the chalkface for a new stroke or word.
4. Rolling of the chalk permits intensity without excessive thickness. fig. 2 & 3.
5. Rolling helps in achieving an evenness of work. fig. 2 & 3.
6. Always place the chalk length in line with the stroke being drawn.

THISNOT THISFig. 1CHALK ROLLED

CHALK NOT ROLLED

Fig. 2*performance*

CHALK ROLLED

*performance*

CHALK NOT ROLLED

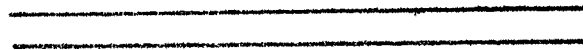
Fig. 3

## STRAIGHT STROKE

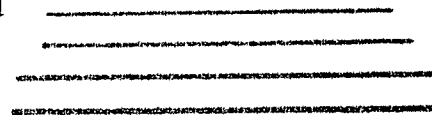
1. Start with horizontal lines. Feel the up and down movement of the shoulder.
2. Draw few horizontal lines of any length. fig. 3.
3. Try to place strokes close together. fig. 4:

Fig. 4Fig. 5

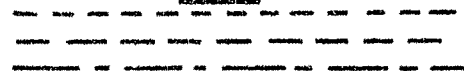
4. Try to lengthen the strokes to the limits of your reach and bend fig. 1.

Fig.1

5. Now you may try lines of varied intensity. You may use the third and fourth finger-nails as a steady. fig.2.

Fig.2

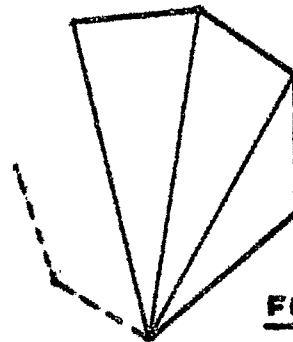
6. You may now try to draw broken lines. fig.3.

Fig.3

7. Repeat all the above - fig.1. to 3. for vertical lines. Keep the chalk in line with the direction of the stroke.

8. Repeat for diagonal strokes.

9. Now join two points with straight lines. After starting the stroke, you have your eye on the next point. Move your eye along the line. fig.4.

Fig. 4

10. You should now start more horizontal, vertical and diagonal lines. Make figures as in fig. 5 - 8

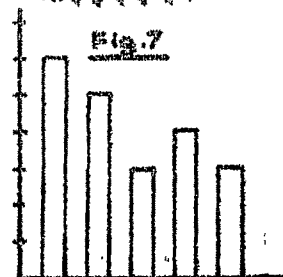
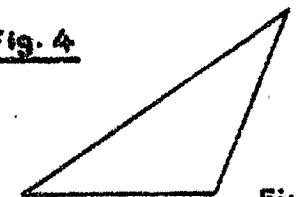
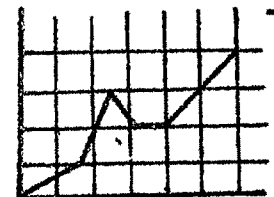
Fig.5

11. Use faint lines for the layout before lining in. Avoid use of duster in this exercise.

Fig.7

12. Now draw mass strokes as in fig. 7.

13. You may have to draw parallel lines while teaching. Now try to draw parallel lines. fig.9

Fig.9FigFig.8

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14. The best way to do this is to hold two pieces of chalks close together when making the stroke. fig. 1.

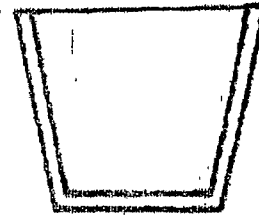


Fig. 1

#### CURVED STROKES

1. Small circles are formed by wrist work.
2. Larger ones are formed by a combination of elbow and shoulder movement.
3. Do not form curved strokes bit by bit. Avoid the habit of moulding curved strokes from the beginning.
4. Some draw a free hand circle in two parts. They start at 1-0' Clock point of a watch, and at 5-0' Clock point, and then join the two strokes. fig. 2.
5. Some draw a circle with a continuous stroke moving first the elbow and then the shoulder to complete the revolution. They start and end at 6-0' Clock point Fig. 3.
6. You can now form a number of curved strokes as in fig. 4.
7. Go ahead with a number of circles fig. 5.
8. During the process, you may discover new ways and easy method of drawing circles.
9. Try a few free curves as in fig. 6.

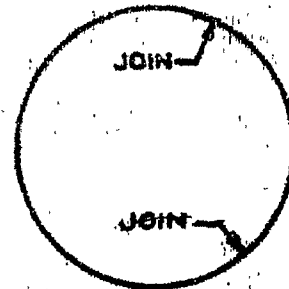


Fig. 2

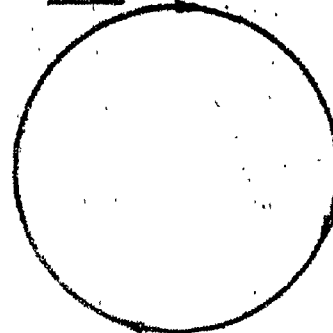


Fig. 3

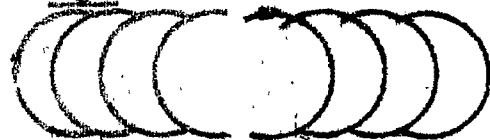


Fig. 4



Fig. 5



Fig. 6

10. You can now proceed to combine straight and curved strokes as in fig. 1.

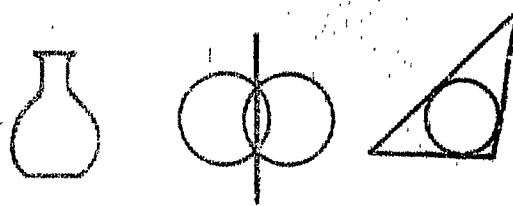


Fig. 1

11. Try to draw more circles with straight line figures. Make guide lines to achieve correct proportions and accurate placings. Fig. 2.

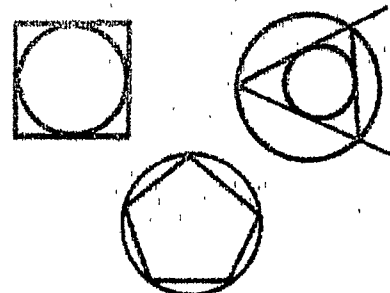


Fig. 2

12. Lastly try for free curved strokes. You may have to make such drawings in your classroom. Hence pay more attention to proportion and quality of work. fig. 3.

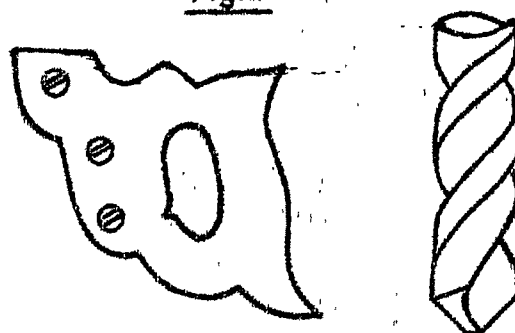


Fig. 3

#### STANCE AND MOVEMENT:

##### Stance:

1. Stand back so that the elbow is only slightly bent, yet the reach to the board is easy. fig. 4.
2. Start by working in front of the board. You will learn gradually that you must not stand directly in front.
3. Be comfortable and relaxed.

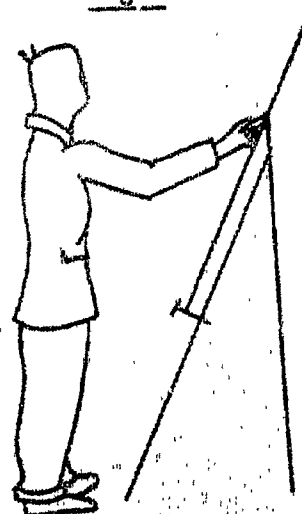
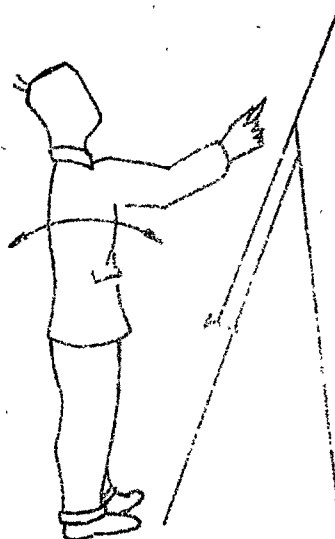
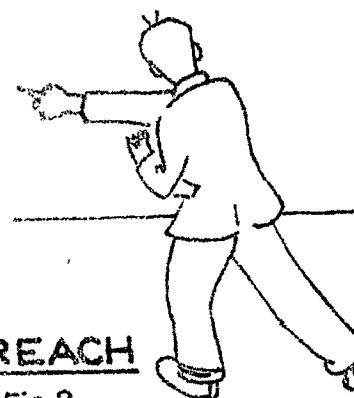
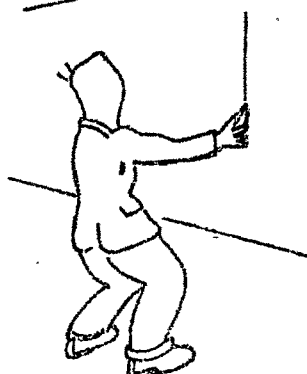
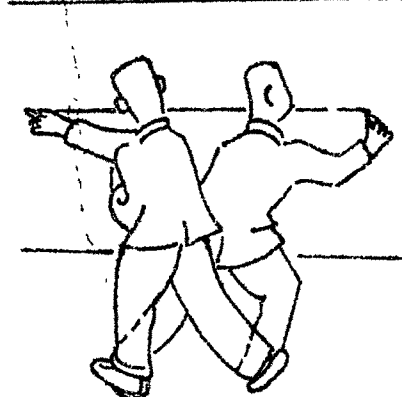


Fig. 4

## MOVEMENT

1. The stroke is made by you mainly through the shoulder-joint movement and to a less degree through the wrist, elbow and body movement.
2. Use body sway to and fro to accommodate for differences of distance. fig. 1.
3. Use side sway of the body to obtain horizontal reach. fig. 2.
4. Bend the knees for low reach in vertical strokes. fig. 3.
5. Remember not to use your balance. Good balance is essential. fig. 4.

SWAYFig. 1REACHFig. 2BENDFig. 3BALANCEFig. 4

## WRITING

Legibility and speed are the two qualities one must take care of in the effective use of chalkboard.

## LEGIBILITY

Consider the following for legibility.

1. Follow your present STYLE first. Omit all trimmings, flourishes and mannerisms. fig. 5.
2. Avoid compressed letters. FULL ROUNDED letters as in fig. 5 is desirable.

*Vocational Education*

*Vocational Education*

Fig. 5

3. SIZE is governed by the class strength. Only criterion is that it should be readable to the students in the back rows.
4. For SIZE it should neither be too big nor too small. Check your work under the classroom conditions.
5. Be generous in SPACING your words. This is the critical factor in your legibility standards. Do not pack the letters as in fig. 1.
6. Give spacing as in fig. 2.
7. Give attention to rotate the chalk or change the facet of the chalk periodically to get even and intense stroke.
8. Examine the working angle of the chalk. fig. 3.
9. Writing should be straight across the board. Maintain the levels of lines carefully from one end to the other, throughout.
10. Initially you may achieve this by putting spaced dots one for each line of writing. fig. 4.

#### SPEED

1. Certainly one must have SPEED.
2. Which is more important? SPEED or LEGIBILITY?
3. Speed is important, but not at the price of legibility.

*The essentials of good design are functional efficiency and aesthet appeal.*

Fig. 1

*The essentials of good design are functional efficiency and aestheti appeal.*

Fig. 2

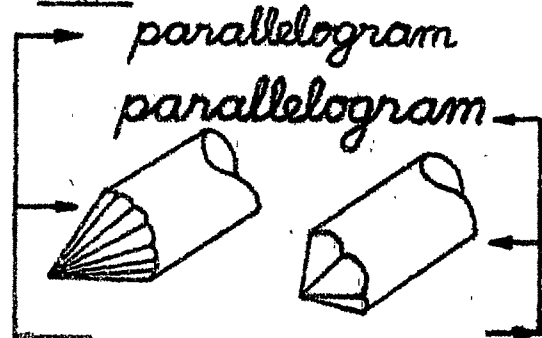


Fig. 3

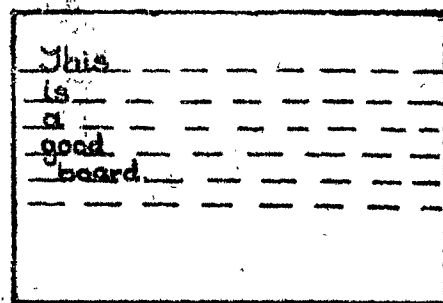


Fig. 4

4. Coordinate your talk with speed, but don't convert the chalkboard into a drawing board.

#### PRINTING

1. Printing is certainly slower than writing.
2. Use printing for headings and emphasis occasionally.
3. Develop a simple style of good form for both upper and lower case letters. Practice as in fig. 1 here.
4. Occasionally you may use ornamental lettering. Add thickness after each letter is formed. Fig. 2.
5. Sharpen chalk to a chisel point.
6. You may try strokes as in fig. 3 and
7. fig. 4 for different forms of lettering.
8. You can hold two chalks together as in fig 5 and try double lettering lines.
9. You require different shapes of chalks as in this fig. 6 for writing, drawing and art work. B helps you for single strokes like fig. 3 above, and C is particularly useful for chalkboard compass work.
10. PRINTING is important, but use occasionally. Adopt different styles. Try a number of methods.

ABCDEFGHIJKLMN OP  
QRSTUVWXYZ

abcdefghijklmnopqr  
stuvwxyz  
1234567890

Fig.1

THIS WAY

Fig.2



Fig.3

ABCDEFGH

Fig.4

THIS

Fig.5

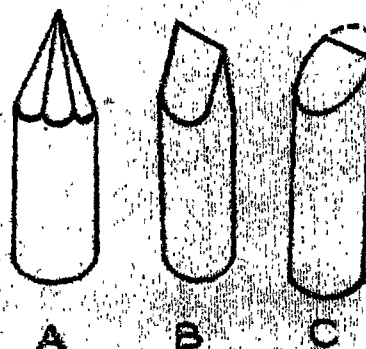
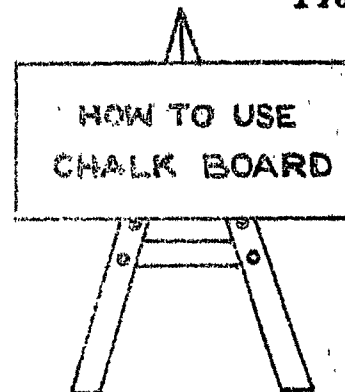


Fig.6

A B C





First and foremost quality of a chalkboard is clean area. The instructor should ensure that he has a minimum functional area and he should plan to work efficiently within the area available. However the quality of illustration on the board is more important than the area available. Another factor you must remember is that the chalkboard is an aid to your teaching and not an end in itself. Remember that sometimes excessive board area can work against clever planning and setting out.

Let us see now, the various ways of using the chalkboard.

1. MAKE SURE THAT THE CHALKBOARD IS CLEAN BEFORE YOU START WORK AND ALWAYS LEAVE THE BOARD CLEAN WHEN YOU FINISH.
2. PLAN LAYOUT OF THE PLACING AND ARRANGEMENT OF THE CONTENT BEFORE THE LESSON STARTS.
3. START THE WORK FROM THE TOP PORTION OF THE CHALKBOARD.
4. SEPARATE MAIN CHALKBOARD ILLUSTRATION FROM INCIDENTAL WRITINGS. PLACE INCIDENTAL WORK IN A COLUMN AT THE RIGHT HAND COLUMN.
5. EMPHASISE IMPORTANCE OF POINTS BY THEIR PLACING AND SPACING PROPERLY IN THE LAYOUT.
6. WHEN MATTER TO BE WRITTEN ON CHALKBOARD IS LARGE, DIVIDE INTO NUMBER OF STAGES, AND AT CHOSEN STAGES OF PRESENTATION ON THE CHALKBOARD, CLEAN IT.
7. UNFAMILIAR OR IMPORTANT TERMS MUST BE EMPHASISED BY INCREASING SPACING, PRINTING, OR USING COLOUR.

8. USE ROLL UP BOARDS OR ANCILLARY BOARDS, WHERE PREPARED WORK IS REQUIRED.
9. USE COLOUR PURPOSEFULLY AND JUDICIOUSLY. COLOUR INCREASES CLARITY IN CHALKBOARD DIAGRAMS.
10. HAVE MONTHLY WASH AND PERIODICAL PATTING OF THE CHALKBOARD. CLEAN THE CHALKDUSTER OFTEN TO BE EFFECTIVE DURING USE.

#### CHARACTERISTICS OF EFFECTIVE CHALKBOARD

Following are the most important characteristics of effective chalkboard:

1. It provides maximum contrast between background and line drawings or printed symbols. The surface holds a good chalk image.
2. It eliminates glare. Glare is a common problem with the traditional smooth ground surface or with surfaces that are poorly maintained.
3. It can easily be erased or cleaned without leaving 'ghosts'. This is true of both white and coloured chalk.
4. It is a versatile medium and various effects can be provided by using different colour chalks for diagrams.
5. It is coloured to blend with the interior of the room, but at the same time it must be efficient in terms of visual presentation. Chalkboards are available, in pastel green, yellow or in white.

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#### LEARNER ACTIVITIES

1. Practice with chalk on the chalk board for
  - a. chalk holding
  - b. strokes
  - c. writing
  - d. printing
  - e. drawings
  - f. sketches.

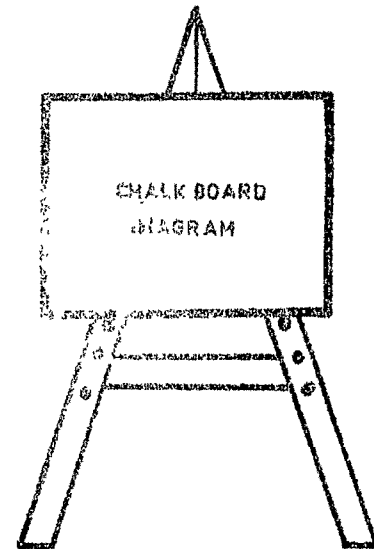
2. Practice rotating the chalk while writing.
3. Write lines right across the board, each one straight and parallel to the other.
4. Select a topic, and plan for the chalkboard work. Plan all the headings and sub-headings. Plan all the matter to be written on the chalkboard. Write down all the points on chalkboard emphasising with varying spacing, size, colour. Submit plans to your instructor.

ANSWER FOLLOWING QUESTIONS AND SUBMIT TO YOUR INSTRUCTOR.

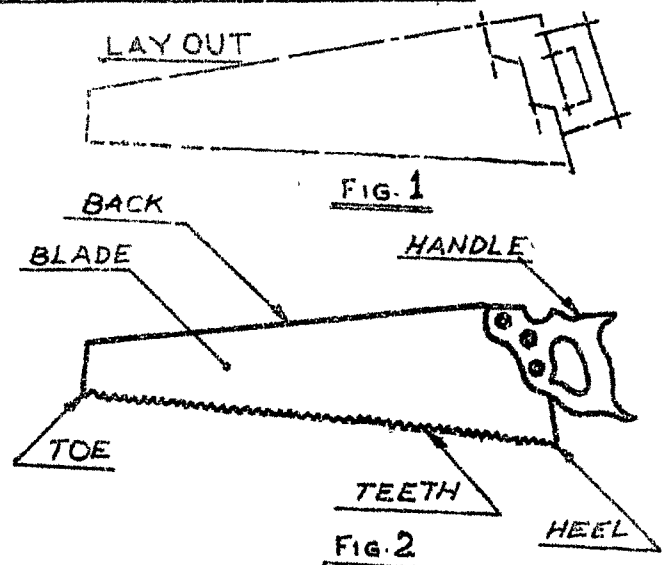
5. Answer the following; Write the alphabet and say T for true or F for false.
  - a. The main qualities required for chalkboard are speed and legibility. T/F
  - b. The size of the letter on the chalkboard should be strictly of 15 mm  $\pm$  5 mm T/F
  - c. Full rounded letter is always preferable for chalkboard writing. T/F
  - d. Packing of words promotes legibility. T/F
  - e. Mannerisms and trimmings are desirable characteristics of chalkboard writings. T/F
  - f. Rolling the chalk while writing gives even and intense stroke. T/F
  - g. Speed is more important than legibility. T/F
6. Fill in the following blanks with correct words(s):
  1. Before you start the classwork make sure that the chalkboard is \_\_\_\_\_.
  2. Incidental work should be \_\_\_\_\_ from the main work on the chalkboard.

3. The tendency is to start writing on the chalkboard at the \_\_\_\_\_. Start from the \_\_\_\_\_ of the chalkboard.
4. The layout of the chalkboard must bring out \_\_\_\_\_ by the \_\_\_\_\_ and \_\_\_\_\_ of the illustration.
5. Erase the chalkboard at \_\_\_\_\_ interval.
7. Answer the following questions:
  1. What are the ways of giving emphasis to important points.
  2. Judicious use of colour aids communication. How and why?
  3. Why is a pre-lesson practice in chalk illustration essential?
  4. What is the advantage of erasing the chalkboard at chosen interval?
  5. Why is it necessary to paint the chalkboard at regular intervals necessary?

For most of you, the chalkboard diagram is a necessary part of your lesson and for some of you, it may be incidental work. It may also be a complete lesson record in itself. Many instructors plead their inability to draw diagram on the board. Diagrams are very important for a vocational training instructor and with a little practice you can improve on your abilities. Your skill to draw diagrams can be developed to that point of excellence necessary to communicate with your trainee. You may find it little difficult in the initial stages, but the way the diagram is used in the exposition is of high importance and the progressive diagram, ie. the diagram which grows as the lesson develops, has the greatest impact value on your trainees. Let us now examine, how you can develop your skills for making diagrams on the chalkboard.



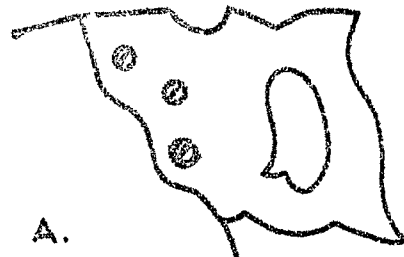
1. Use light layout lines or guide strokes first. These lines help you to fix proportions and placings required. fig. 1.
2. Use clean, bold lines for your final strokes.
3. Label the diagram with neat lettering. Provide accurate connecting arrows. fig. 2.



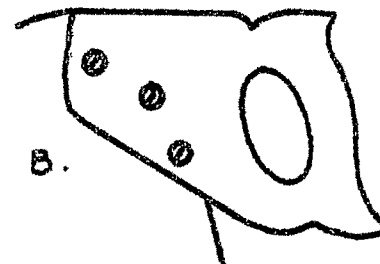
4. You may use colour for clarity and emphasis.
5. Do not aspire for photographic effects.

6. Be simple and symbolise to the needs of your instructional situation.

7. Fig. 1 shown two forms of a handle of a saw. A is photographic and B is simplified.



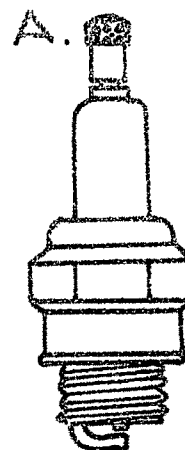
A.



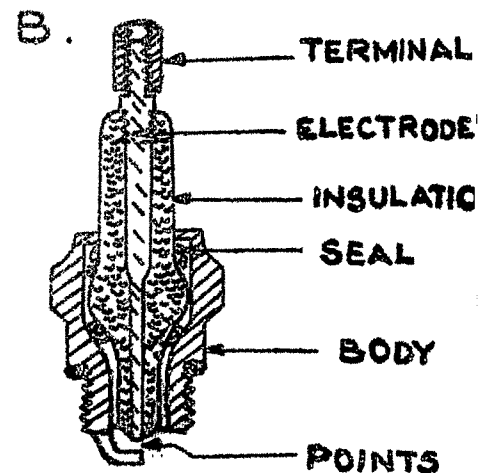
B.

Fig. 1

8. A diagram must give maximum information in a clear manner.
9. For getting this done, you must have the correct picture, correct arrangement and neat execution. Which of the diagrams given here lacks the information? fig. 2.



A.



B.

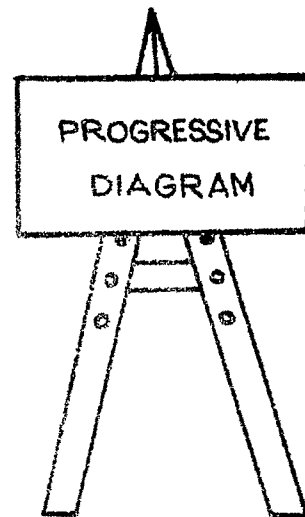
10. If you are to make a number of diagrams, you must leave enough spacing between them. If not you may cause confusion.

Fig. 2

11. One of the main reasons for making diagram on the chalkboard is to fulfil your instructional requirement as per the objective.
12. The trainee must be able to reproduce the diagram in his notes and also
13. in the examination.
14. Therefore keep to essential principles and use the simplest forms.
15. If you cannot create a diagram on the chalkboard, do not expect your trainee to produce one.

The progressive diagram is developed as a lesson proceeds and it is valuable in craftsmen training. Every instructor must acquire skill to make a progressive diagram concurrently with his exposition of the subject matter.

- \* Progressive diagram can be controlled to fit the rate of presentation.
- \* It offers a working from the simple to the complex.



- \* It focusses attention of the individual point under discussion.
- \* It incorporates only the material selected for the lesson and
- \* it shows the student how the diagram may be produced.

#### CONSTRUCTING A PROGRESSIVE DIAGRAM

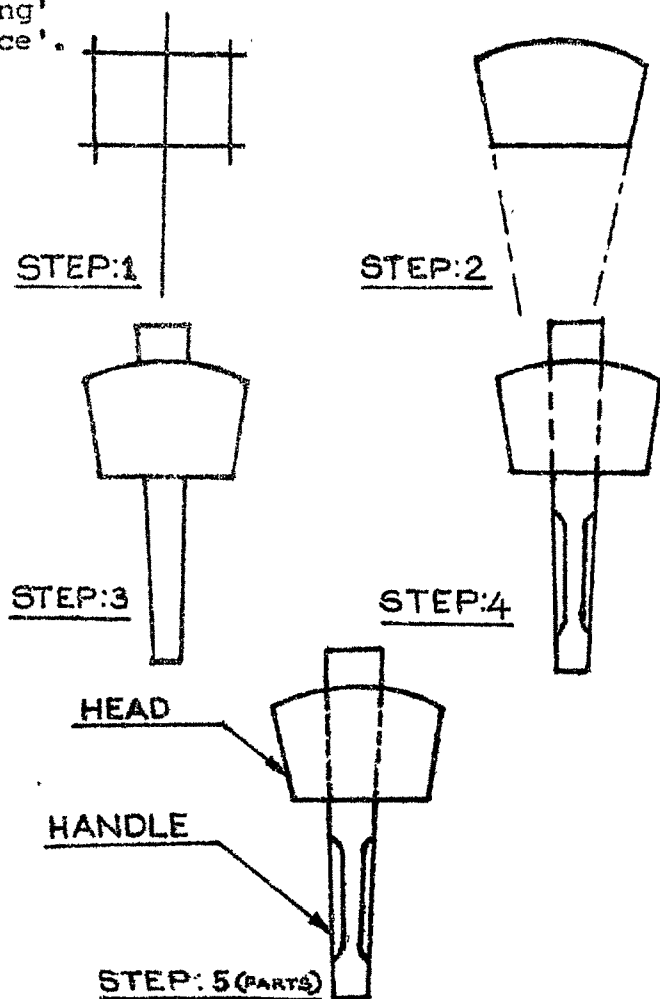
##### Hints:

1. Know the material.
2. Know the proportions.
3. Know the spacings.
4. Work the essential principles.
5. Balance the chalk & talk.
6. Always follow 'pre-thinking' and 'pre-practice'.

##### A MALLET

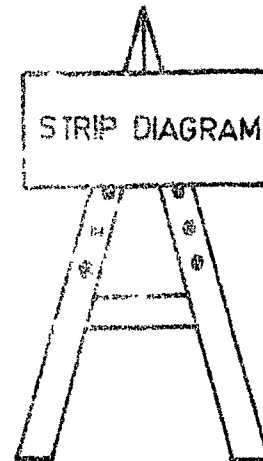
1. Lightly sketch the essentials. step 1.
2. Develop the head step 2.
3. Draw the handle-step 3.
4. Add final details step 4.
5. Label the parts. step 5.

Be on your own and produce few diagrams.





In the case of strip diagram, as against the progressive diagram where you produced one diagram 15 stages at the end of the lesson, you produce a series of diagrams, each one developing from or connected with the previous one. Yet each will have a distinct feature for itself.



The shaping of a lathe tool is an example given in fig. 1

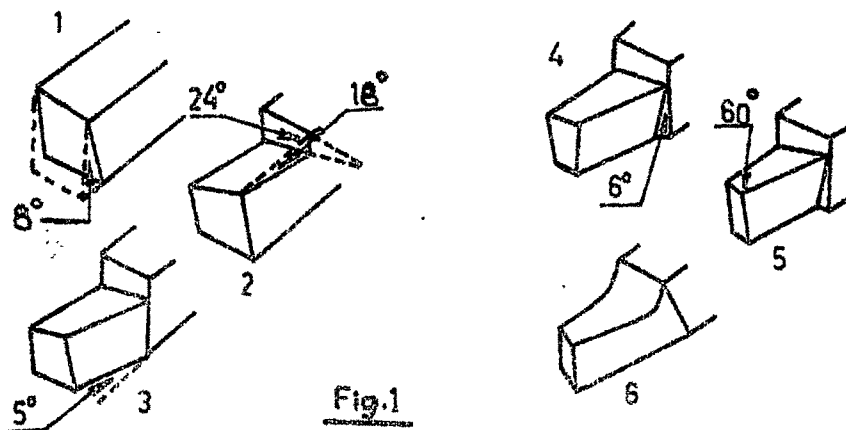
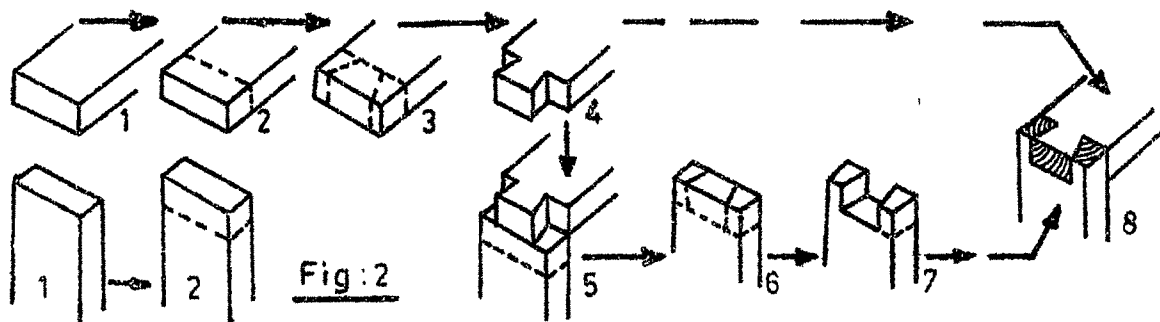


Fig. 2 gives the making of a dovetail joint. This kind of progression in stages is very useful for the job-analysis about which you have learned in Module 1. It is necessary to develop such concepts in your trainees to enable them, later to transcribe into skills.

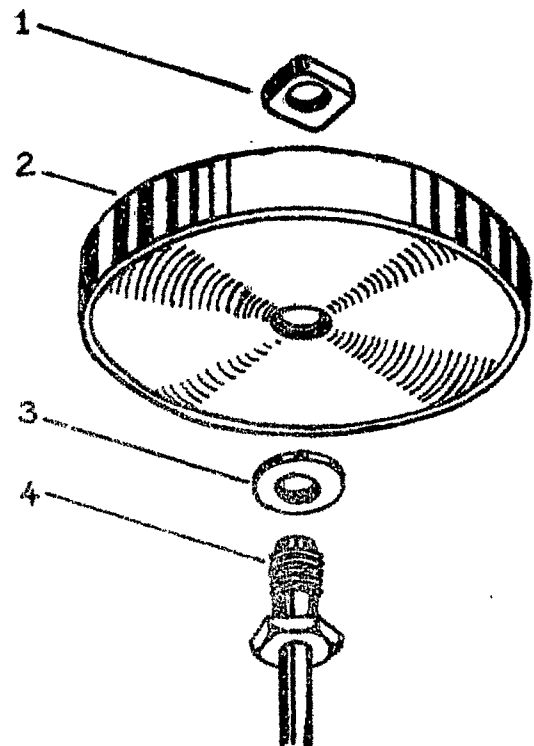
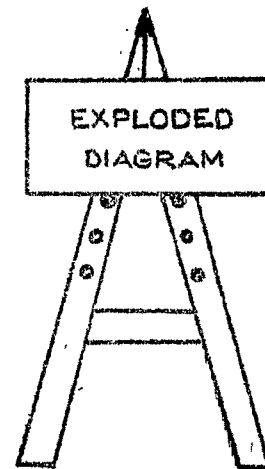


The exploded diagram is one that is very useful to the craftsman trainee. Parts of a tool or machinery such as the one shown in the figure here, or a sawing machine, or any part of the automobile engine are all examples. To know about an engine or any machine you should develop the concept in the minds of the trainee and for this the exploded diagram is the best.

Often the complexity of the parts when fitted together makes clarity of seeing very difficult. This difficulty can be overcome by drawing apart or exploding the component parts.

For optimum effect keep a relationship between the exploded placing and the original position, thus obtaining a separation for clarity and a sense of connection for understanding.

The spacing out of the parts in the diagram is very important, otherwise, you will create confusion in the minds of your trainees.



For complicated exploded diagrams you may prepare the same in advance in roll up boards and bring to the class.

When you draw diagram as the lesson is developed by you, in the class you can call this progressive exploded diagram.

You all know that shading and colouring are no less important than all the topics you have already covered. But mind you, before you take up to shading, you must ask yourself a question. 'Is shading required?' and before colouring, 'Is colouring essential?'

So when you do SHAPING it must serve some purpose. It may be

- a. To clarify information. See difference between A, B, & C in fig. 1
- b. To distinguish one part from another fig. 2.
- c. To achieve moulded forms fig.3



CLARITY

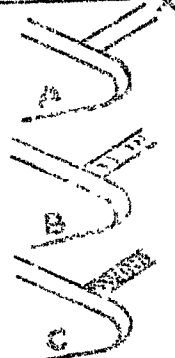
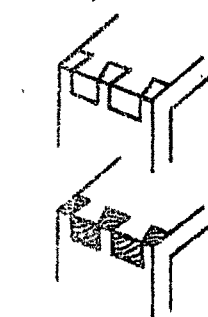


Fig.1



DISTINGUISHING

Fig.2

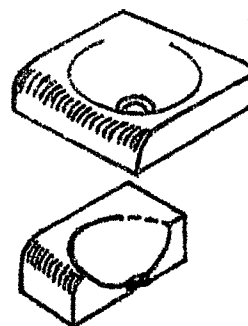
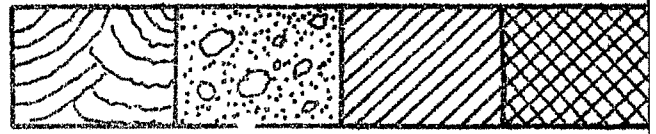


Fig.3

FORM

- d. To achieve some conventional practice or usage, which carries meaning. fig. 4.



- e. To attract an exhibition work. fig. 5.

FIG:1  
CONVENTIONAL USAGE

There are a number of ways of shading. By cross hatching, and by placing the strokes close together opaqueness can be achieved. Double cross hatching will give greater intensity. Quick coverage of shading is obtained by either greater pressure or a second coat by using chalk flatwise.

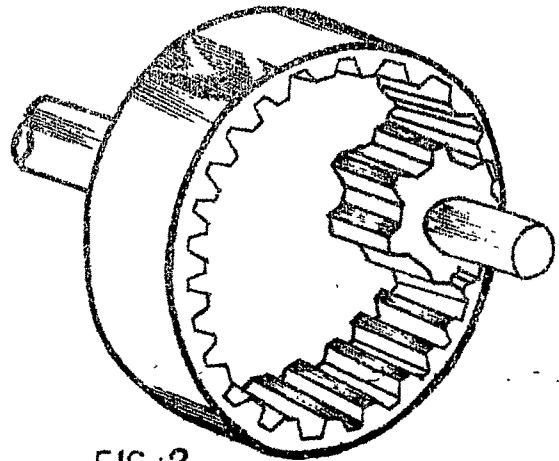


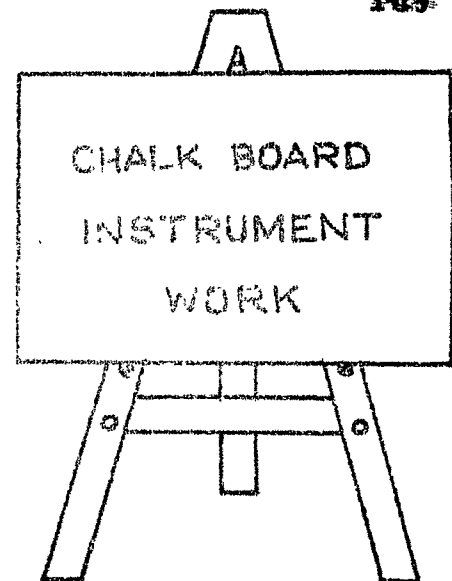
FIG:2  
EXHIBITION WORK

COLOUR WORK must be used purposefully, to emphasise, to differentiate to follow convention (ISI) or to provide attraction. One part can be separated from other by change of colour. Attention can be drawn by colour. Fluid motion can be shown by different colour. The emphasis gained from the use of colour rests when you use colour rarely.

Why do you require chalkboard instruments?

When there is a need for one or more of the following, you need chalkboard instruments.

1. Accurate proportions
2. Exact dimensions
3. Precise construction
4. Specific draughtsmanship technique.
5. Intricacy of details.



When the standard of work required is to match the trainees standard of pencil work, the instructor uses the chalkboard instruments. How shall we use the chalkboard instruments?

1. You must make sure that the instruments and the left hand edge of your chalkboard are in good condition.
2. Have plenty of sharpened chalk. See for reference the section on PRINTING.
3. Ensure that you have enough practice for drawing various types of lines. You must have practiced broken lines, dimension lines, and all lines of graded intensity.
4. Use straight edge and draw few lines. Then broken lines. Then other lines. Ref. fig. 1 on page of this unit.
5. Now use compass and draw circles - fig.
6. Drawing of vertical lines according to the drawing board practice presents difficulty. You may use a tail set square and a T square.
7. Always keep construction lines light, and make pre-practice for best positioning.

8. You must set the example for your trainees. Do practice well before you go to the class.
9. For isometric work, it is useful to have part of the board scored with an isometric grid. Fig. 3 on page 163 If your board is not having one grid, make one. Otherwise, use the chalkdusting method and make a grid.
10. You may use plywood or transparent templates.
11. Fig. 4 on page 163 shows an example of chalkboard instrument work.
12. Practice with the instruments and templates.

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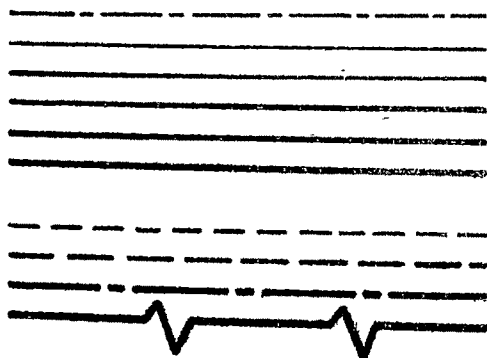


FIG : 1

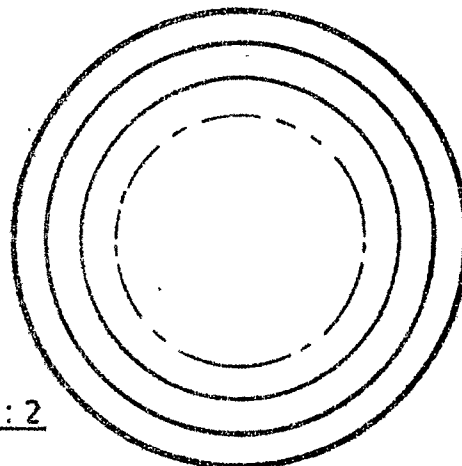


FIG : 2

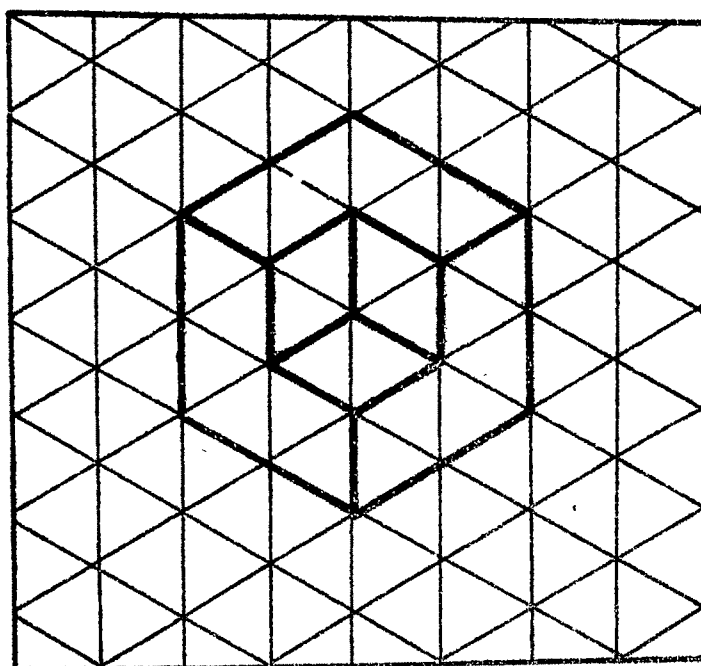


FIG : 3

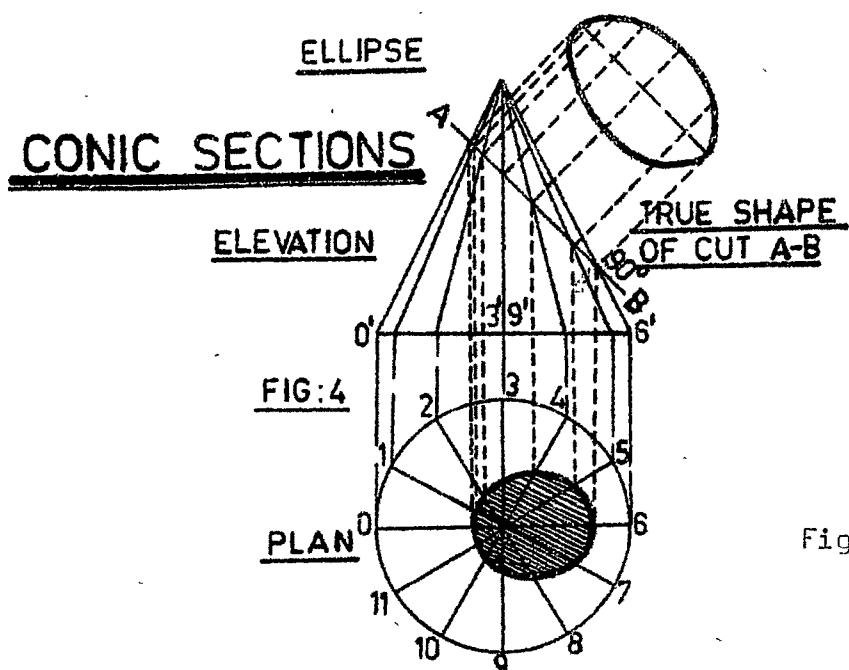
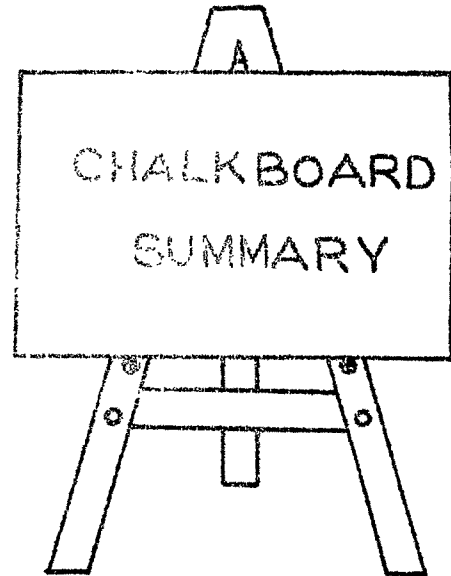


Fig. 4.

The chalkboard summary is the best way of making the lesson record at the end of a topic. As an Instructor you prepare a number of lessons after referring to various sources of information and then present it in the class. You adopt different media and methods to illustrate different aspects. Your main aim is to help the trainee to form a mental picture of everything you instruct.

You have seen us using Overhead Projector, Slide and Film strip Projectors, epidiascope, Charts, etc. to aid our presentation. As

an instructor, you can use various methods and media, but the chalkboard and talking still is the single medium used in many of the schools and colleges. In your lesson plan, you have an item "summary". As an instructor, you will have to leave a record of the lesson, for future reference of your trainee. It is also necessary to bring all the important teaching points, sub-points, on chalkboard, systematically, to form a cohesive chalkboard record of lesson, known as chalkboard summary. It's contributions are:



1. It forms a non text book record of the salient points of the lesson.
2. It forms a basic for student notes.
3. It consolidates the lesson by appealing through the visual senses.
4. It clarifies points.
5. It offers an easy form of recapitulation.



The qualities of chalkboard summary are:

1. It should be complete in its coverage.
2. It should be concise.
3. It should be well analysed.
4. It should be well set out.
5. It should emphasise important points.

Types of setting out of chalkboard summary are:

1. The essay form is not desirable. Instead use information sheets.
2. Note form. Highly desirable. This one is the example.
3. The tree form. Example - fig. 1 on page 166.
4. The tabulation form. Example - fig.2 on page 166.
5. The cycle form. fig. 3 on page 166.
6. The flow form. fig. 4 on page 166.

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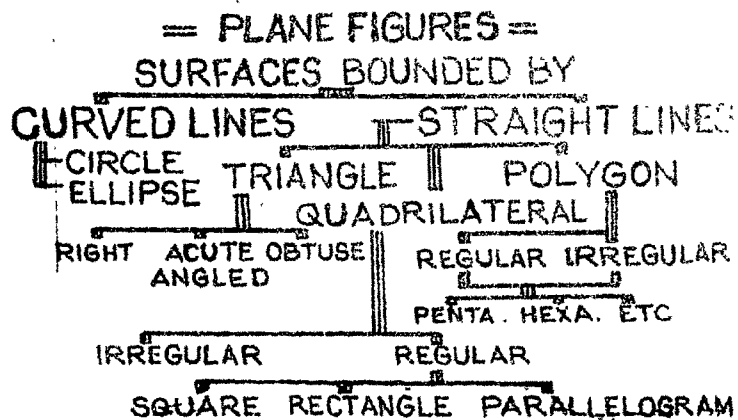


Fig.1

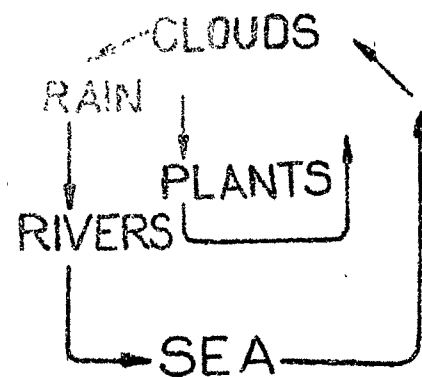


Fig.3

	HOT COLD	TACKY NON-TACKY	MOISTURE RESISTANCE	MOULD RESISTANCE	GAP FILLING	STRENGTH
ANIMAL	HOT	TACKY	LOW	LOW	LOW	VARIABLE
VEGETABLE STARCH	COLD	TACKY	LOW	LOW	LOW	FAIR-GOOD
VEGETABLE PROTEIN	COLD	TACKY	FAIR	LOW	LOW	GOOD
CASEIN	COLD	NON-TACKY	GOOD	LOW	LOW	HIGH
SYNTHETIC RESINS	COLD	NON-TACKY	HIGH	HIGH	HIGH	VERY HIGH
RUBBER	COLD	TACKY	HIGH	HIGH	HIGH	HIGH
CELLULOSE	COLD	TACKY	HIGH	HIGH	HIGH	HIGH

ADHESIVES: COMPARISON OF PROPERTIES

Fig.2

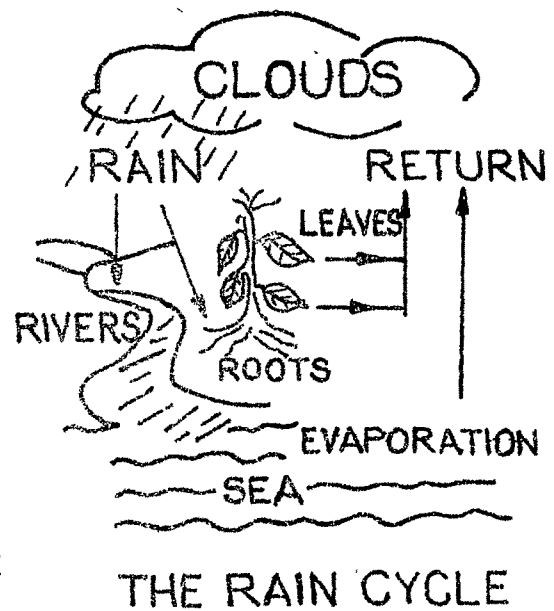


Fig.4

1. Prepared Summary      This is a summary given at the beginning of the class. It is not widely used in our teaching.
2. Final Summary        This summary is compiled at the end of the lesson, often through recapitulation questions and answers.
3. Pregressive Summary.      This summary is compiled as the lesson progresses. It emphasises the particular fact under discussion, it is adjustable to the rate of class acceptance and it offers a change in teacher activity.

Examples of chalkboard summary

## CHALKBOARD SUMMARY

## Types of Chalkboard:

1. Wall mounted      - Where wall face is available facing class.
2. Sliding            - Where wall face not available facing class.
3. Portable           - Supported by easel (Temporary)  
                         - Mounted on wheels (Temporary)  
                         - Roll up board For Pre-preparation.  
                         - Ancillary 3' x 2'      -do-

## ROLE OF CHALKBOARD

1. To reduce verbalism.
2. To make simple illustration.
3. To consolidate points under discussion.
4. To help participation of trainees.
5. To present information at different stages of instruction.
6. To present lesson record for class notes for the students.

## LEARNER ACTIVITIES

1. Select a topic and prepare the logical sequence of presentation with headings, sub-headings and points under sub-headings and submit the same.
2. Plan a schematic summary, and submit to your instructor.
3. Workout incidental work separately and submit the plan to your instructor.
4. What are the special techniques required to produce repeated technical drawings?
5. During your practice teaching class, plan a blackboard summary and submit the plan to your instructor.
6. Name the different forms of chalkboard summary.
7. Differentiate progressive summary and prepared summary.
8. Fill in the blanks -
  - a. Chalk length should be \_\_\_\_\_ with the line being drawn.
  - b. Do not hesitate in \_\_\_\_\_ the knees for low reach.
  - c. Body sway towards the back is to accommodate hand movement when you make \_\_\_\_\_ stroke.
9. Select the correct answer :
  - a. The chalk piece when rolled should be \_\_\_\_\_. (felt, perceived, both).
  - b. For drawing horizontal stroke chalk length should be kept \_\_\_\_\_ (inclined, horizontal, vertical).
  - c. When you draw horizontal stroke, the line at the end bends up. The reason is \_\_\_\_\_. (Body sway towards back not given; right leg is not bent as the line progressed; taking the body close to the chalkboard).
10. Chalk need not be rolled when you make \_\_\_\_\_. (straight strokes, curved strokes, horizontal strokes).

11. Templates and pounce pattern are used for \_\_\_\_\_  
(prepared diagrams, progressive diagrams, helping the students to draw).
12. Answer True or false.
- a. Note form of chalkboard summary is writing salient points. T/F
  - b. The quality of chalkboard summary lies in its complete coverage. T/F
  - c. The chalkboard diagram forms part of chalkboard summary. T/F
  - d. Note form of chalkboard summary has very limited use in practice. T/F

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## AUDIO VISUAL EDUCATION

Module II : Non Projected Visual Aids.  
Unit 5 : Chalkboard

Practical Exercise - 17 : Use of Template and Chalkboard Instruments.

A. PROBLEM : Drawing a hexagon with the chalkboard template and circle with chalkboard instrument (compass).

1. Use sharpened chalk.
2. Use furnished template.
3. Draw briskly the hexagon, closing it carefully.
4. Using the compass, draw the circle with a radius of 10 cm.

B. MATERIALS & EQUIPMENT

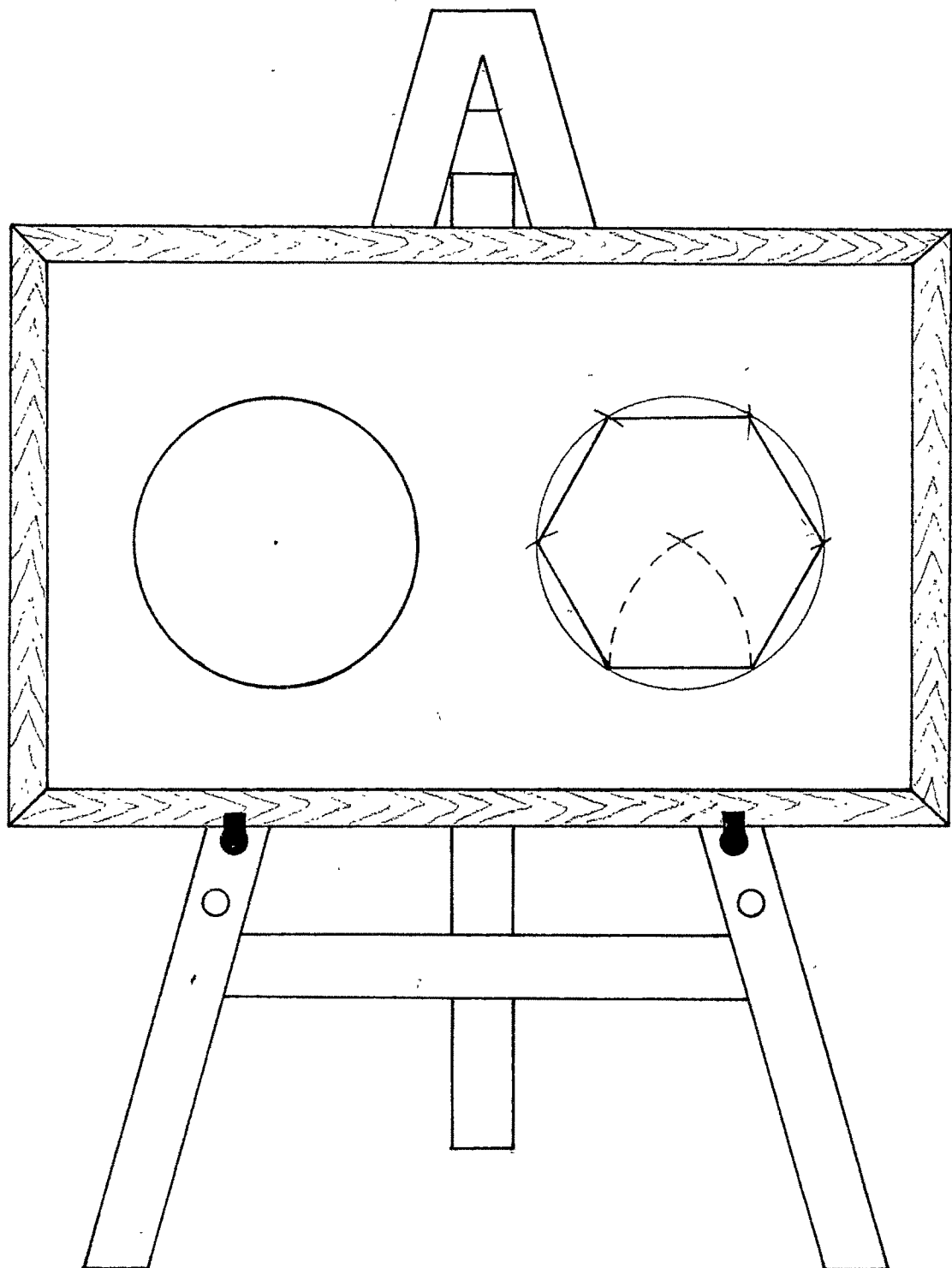
1. Chalkboard
2. Chalk and Duster
3. Template
4. Compass

C. POINTS FOR GRADING

1. Evenness of lines
2. Cleanliness
3. Closing point
4. General overall appearance.

D. DEADLINE FOR PROJECT : May 23rd.

# CHALK BOARD EXERCISE 171



## AUDIO VISUAL EDUCATION

Module II : Non Projected Visual Aids.

Unit 5 : Chalkboard

Practical Exercise - 18 : Free hand sketching & use of colour.

A. PROBLEM : Free hand Drawing of a common tool.

1. Draw the ballpane hammer with while chalk on the board.
2. Make the handle.
3. Colour and shade the drawing appropriately.

B. MATERIALS & EQUIPMENT

1. Chalkboard
2. Chalk & Duster

C. POINTS FOR GRADING

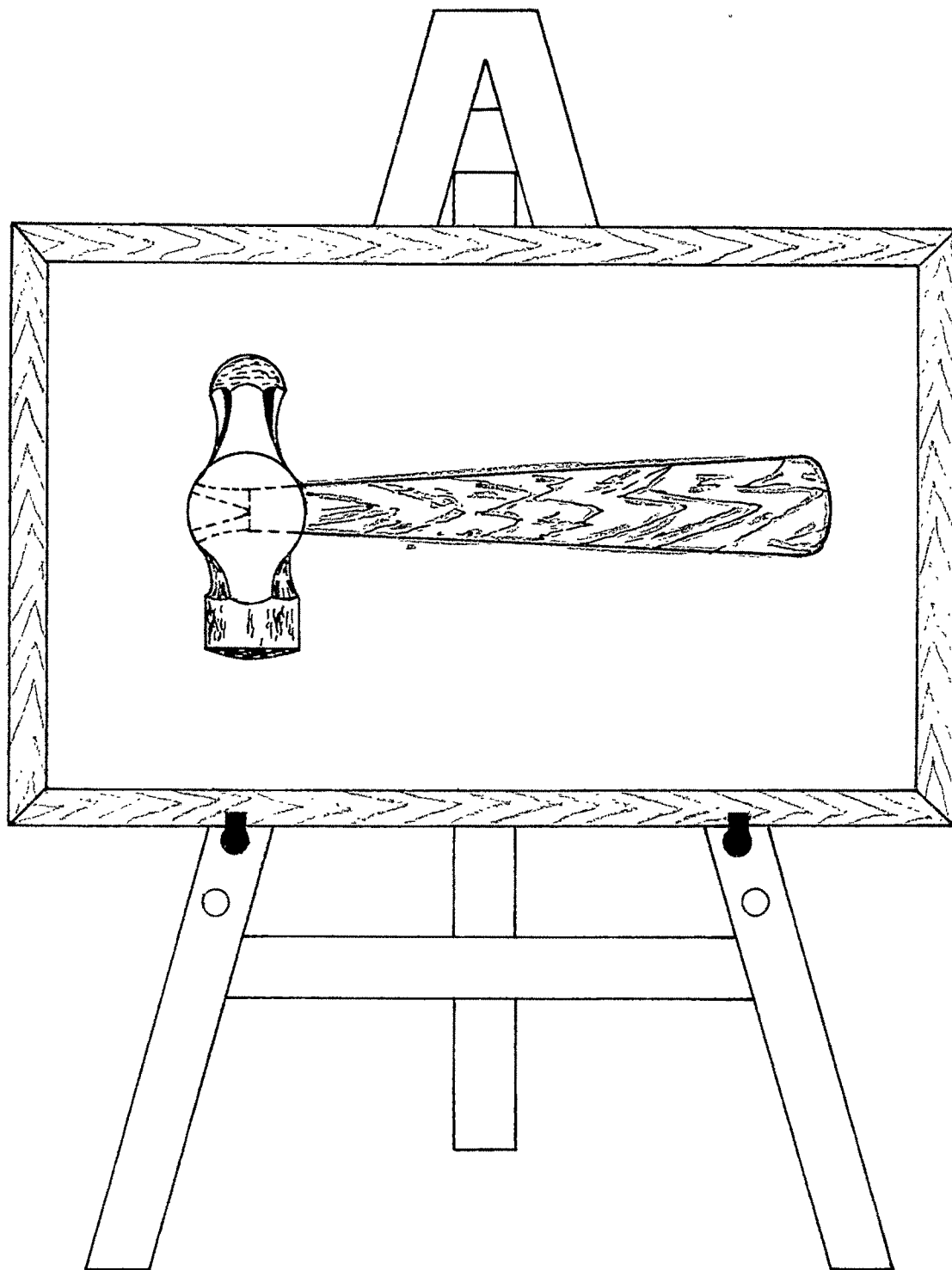
1. Evenness of lines
2. Appropriateness of the sketch
3. Proportionate dimension
4. Cleanliness
5. General overall appearance.

D. DEADLINE FOR THE PROJECT : May 23rd.



# CHALK BOARD EXERCISE

173



## AUDIO VISUAL EDUCATION

Module II : Non Projected Visual Aids.

Unit 5 : Chalkboard.

Practical Exercise - 19 : Drawing exploded view diagram.

A. PROBLEM : Draw the exploded view diagram of the given drawing.

1. Use any instruments, free hand sketching or templates.
2. Plan the layout.
3. Draw the diagram on the Chalkboard.
4. Print the caption.
5. Name the parts.

B. MATERIALS & EQUIPMENT.

1. Chalkboard.
2. Chalk and Duster.
3. Chalkboard instruments and templates.
4. Furnished illustration.

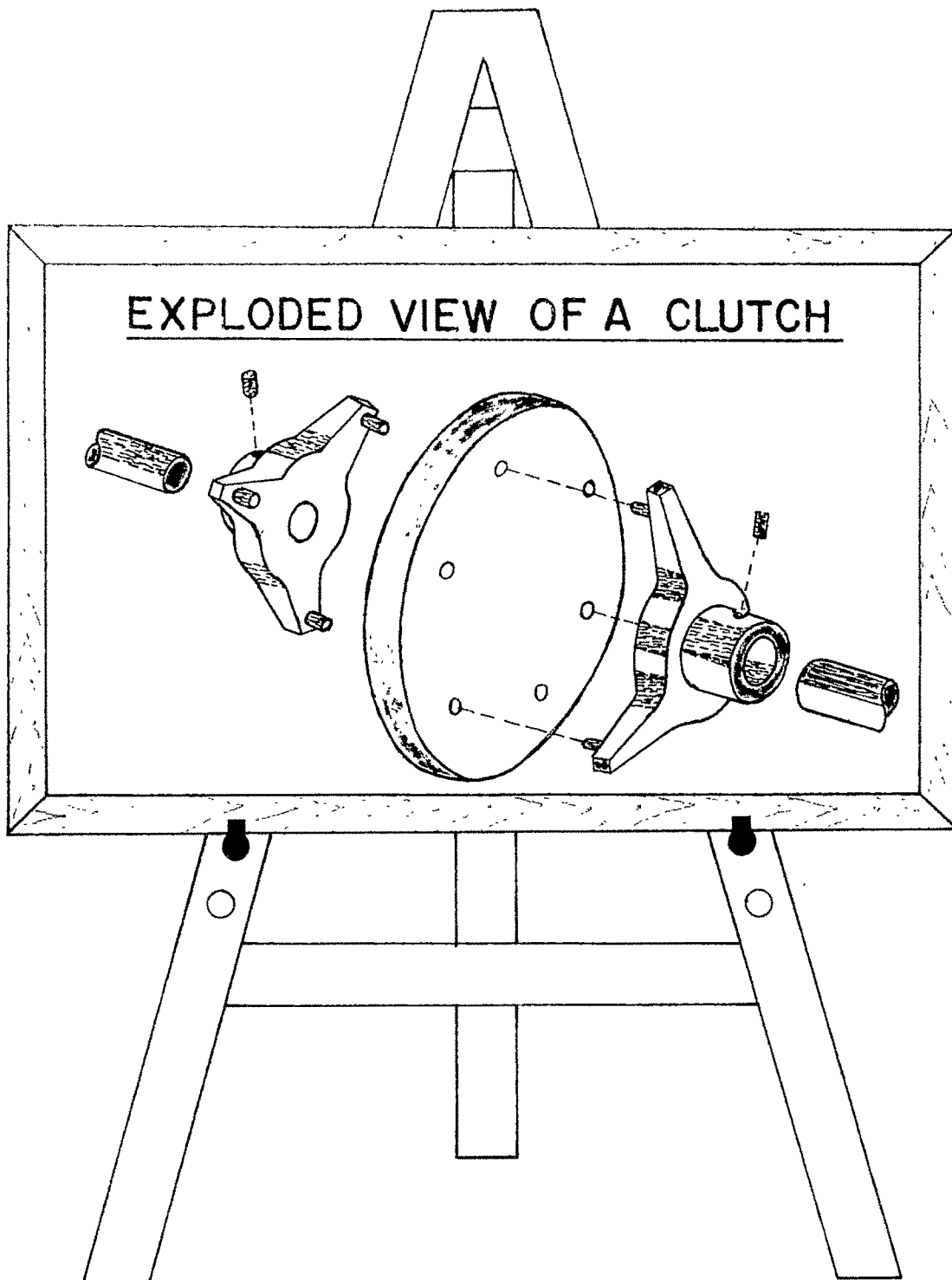
C. POINTS FOR GRADING

1. Evenness of lines.
2. Cleanliness.
3. Appropriateness of the sketch & parts.
4. Proportionate dimension.
5. Overall appearance.

D. DEADLINE FOR THE PROJECT : May 23rd.

# CHALK BOARD EXERCISE

175



## AUDIO VISUAL EDUCATION

Module II : Non Projected Visual Aids.  
Unit 5 : Chalkboard

Practical Exercise - 20 : Writing a paragraph on the chalkboard keeping level.

A. PROBLEM : Paragraph writing across the chalkboard keeping the level.

1. Use dot for the starting and ending point.
2. Use the furnished paragraph.
3. Adopt capital and lower case letters.
4. Use punctuations as per the illustration given.
5. Maintain size for readability at the back of the class 10M deep.

B. MATERIALS & EQUIPMENT

1. Chalkboard.
2. Chalk and Duster.
3. Scale/T square.

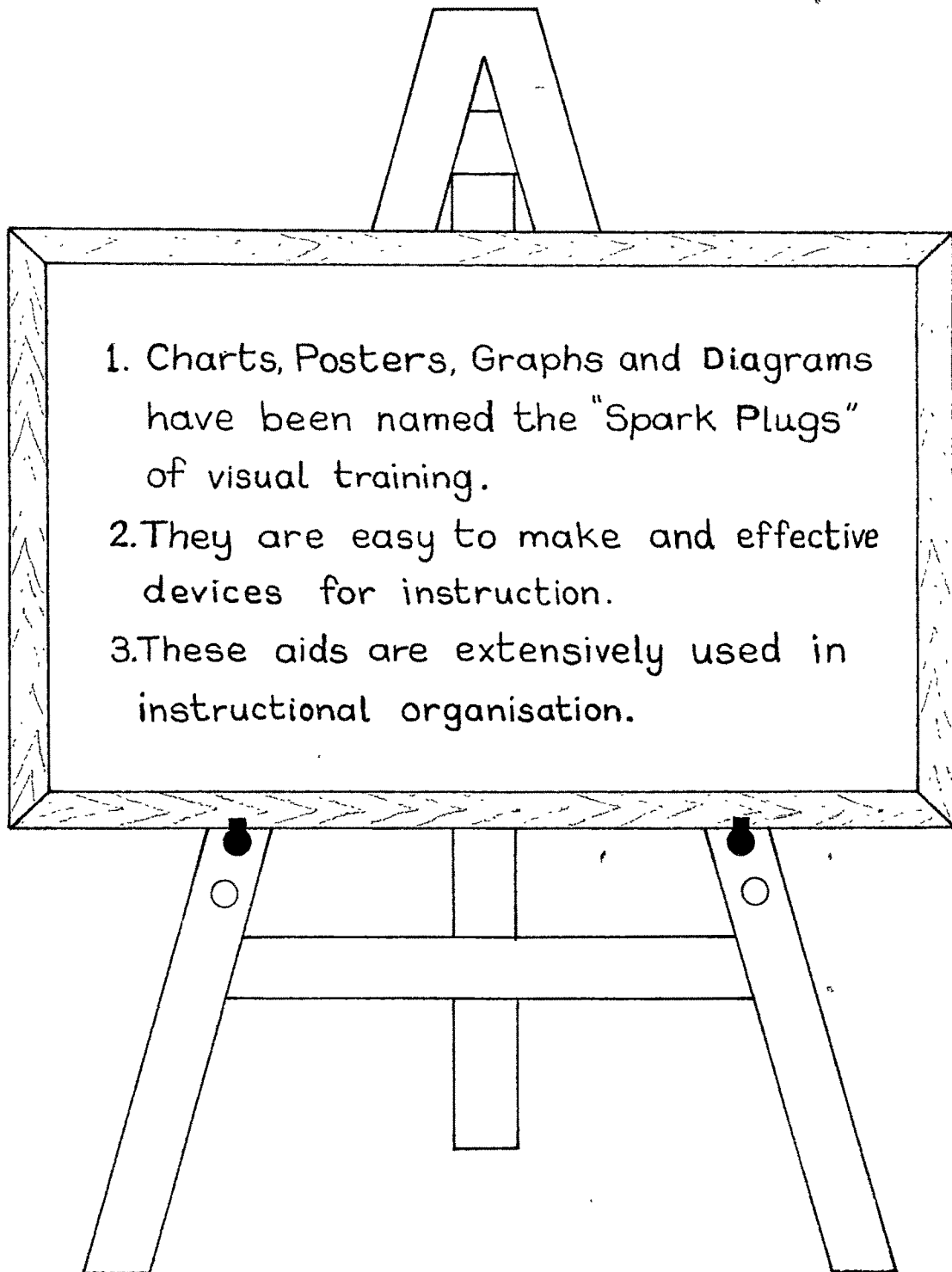
C. POINTS FOR GRADING

1. Evenness of letters.
2. Cleanliness.
3. Proper size for the class to read.
4. Straight line writing
5. Overall appearance.

D. DEADLINE FOR THE PROJECT : May 23rd.

# CHALK BOARD EXERCISE

177



## AUDIO VISUAL EDUCATION

Module - II : Non Projected Visual Aids.

Unit - 5 : Chalk Board.

Practical Exercise - 21 : Use of Chalk Board Instruments to Draw Diagram Combining horizontal, vertical, angular and curvedline.

## PROBLEM:

Using Chalkboard instruments draw a regular cone (150 mm high and 50 dia). A line AB inclined at  $45^\circ$  to base cuts the cone at 100 mm from base on the axis of the cone. Draw the cone, plan from Top and also the plan of the cut section (conic Section) at a plane parallel to the cut section.

## MATERIALS &amp; EQUIPMENT

1. Chalkboard.
2. Chalkboard instrument.
3. Duster, Chalk.

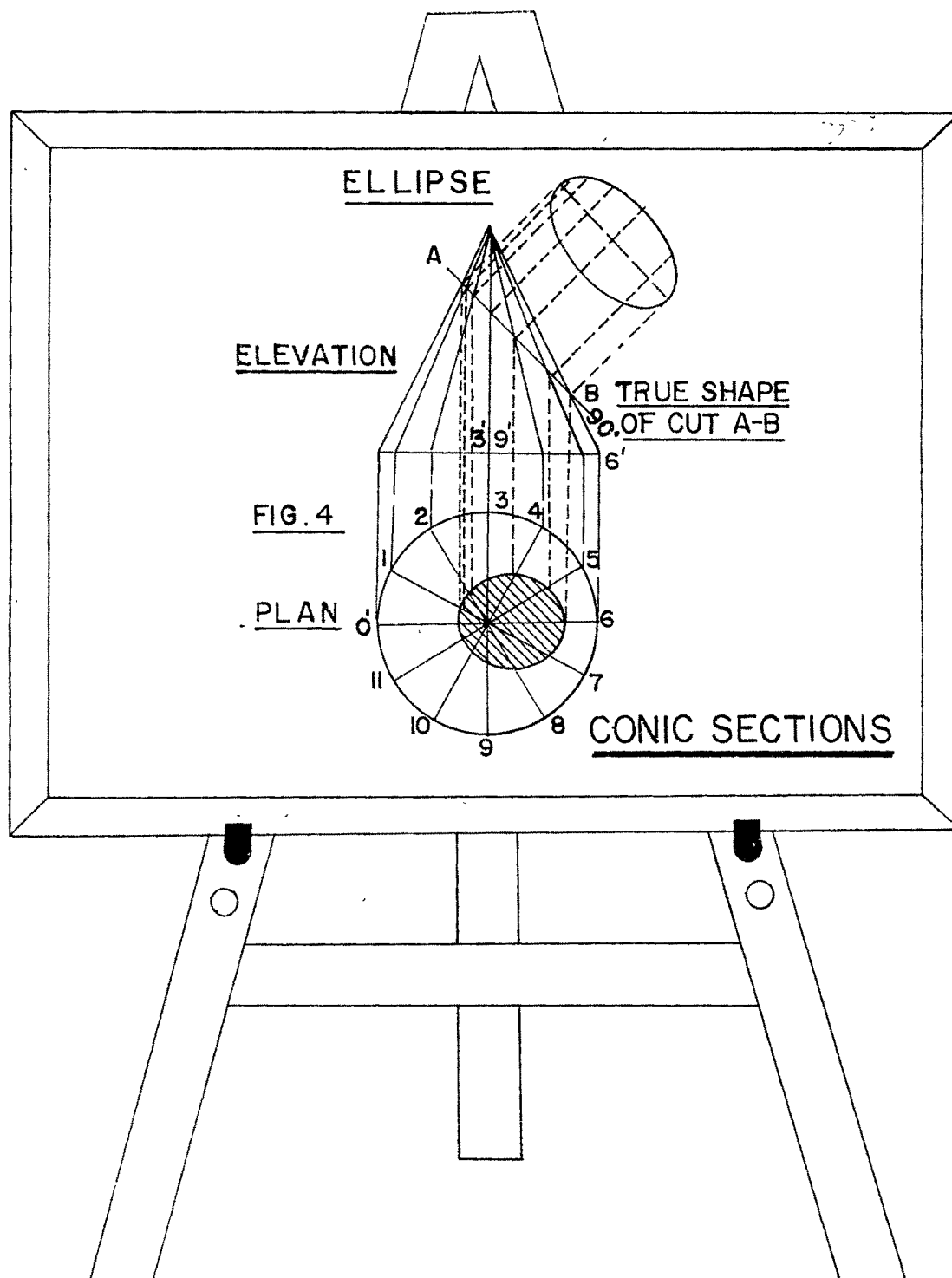
## POINTS FOR GRADING

1. Evenness of lines; horizontal, vertical and curved.
2. Cleanliness.
3. Accuracy of the Drawing.
4. Overall performance.

DEADLINE FOR PROJECT: May 23rd.

# CHALKBOARD EXERCISE

173



## AUDIO VISUAL EDUCATION

Module - II : Non Projected Visual Aids.

Unit - 5 : Chalkboard.

Practical Exercise - 22 : Chalkboard Summary.

A. PROBLEM : Making use of the chalkboard-  
Write summary of the given lesson.

1. Submit lesson plan with the chalkboard summary.
2. Plan the layout for the chalkboard summary.
3. Adopt note form to present the chalkboard summary.
4. Do not omit important points.
5. Provide an information sheet for students future reference.

B. MATERIALS & EQUIPMENT

1. Chalkboard.
2. Chalk and Duster.
3. Chalkboard instruments, template or other aids as required.

C. POINTS FOR GRADING

1. Evenness of lines & writing.
2. Cleanliness.
3. Inclusion of all points.
4. Overall appearance.

D. DEADLINE FOR PROJECT : May 23rd.



# CHALKBOARD EXERCISE

181

