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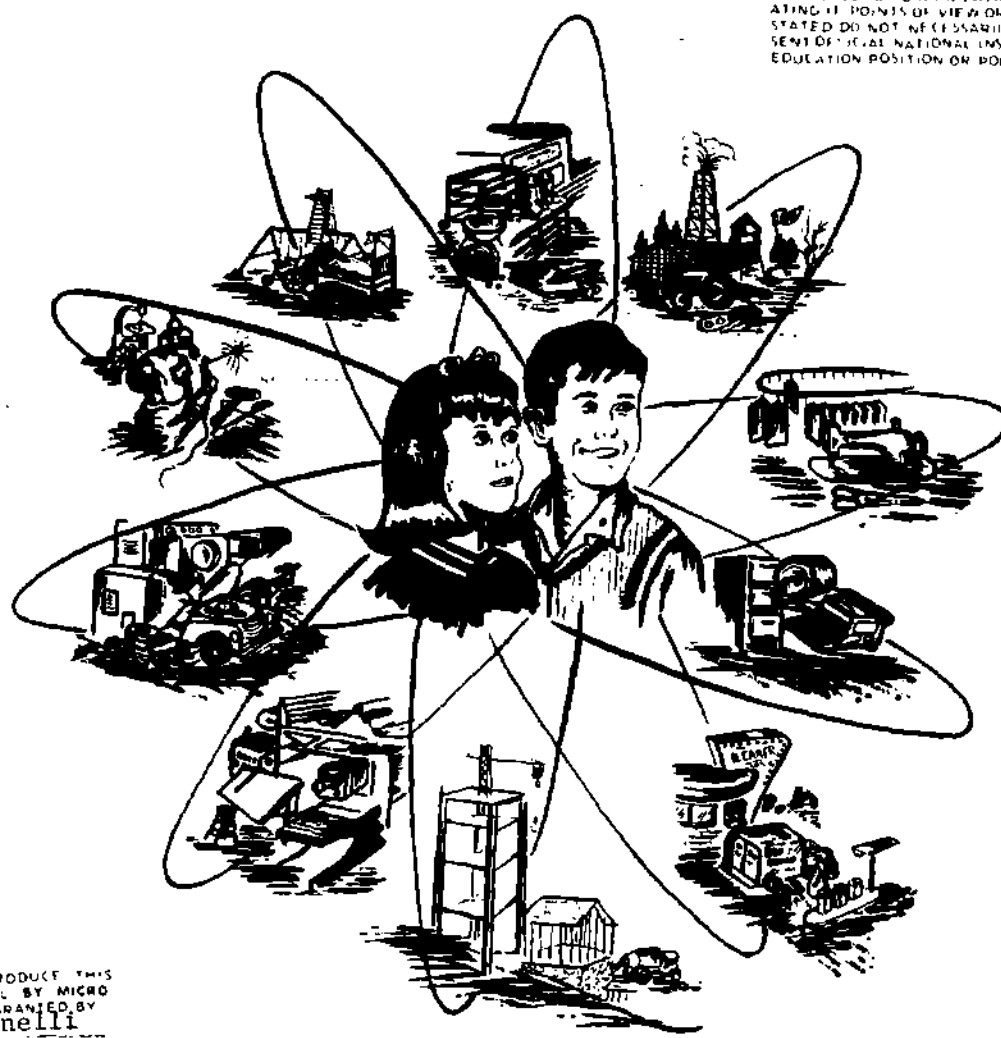
ABSTRACT

This teacher's guide is one of a series of publications focusing on the occupational preparation of persons with special education needs. The material was developed and tested by cooperating teachers over a period of three years. Task analysis information is presented using occupational descriptions from the Dictionary of Occupational Titles, covering entry level occupations generally available in Michigan. Instructional task modules are presented in detail under the headings: behavioral task knowledges/task skills, instructional methods, task-related competencies, instructional materials, basic information for cooperative teaching (language of the task and quantitative concepts), and suggestions. An instructional materials bibliography is included, followed by two appendixes, an instructional materials code indicating probable learning sensations, and a task-related competencies code. This guide describes 24 tasks common to the construction cluster, 25 tasks for four selected entry occupations for the building maintenance/service subcluster, and 51 tasks for seven selected entry occupations in the residential construction subcluster. (SA)

Cluster Guide

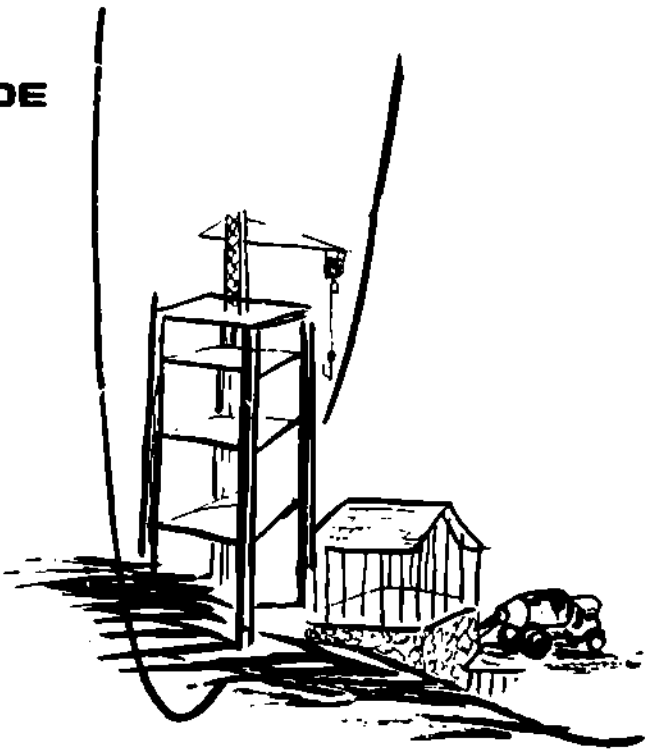
Construction



An Instructional Resource Guide to Enhance Cooperative Vocational Education / Special Education Teaching

Permission was obtained from The U. S. Department of Labor Manpower Administration to reprint selected portions of the "Dictionary of Occupational Titles" Volume 1 Third Edition.

CONSTRUCTION CLUSTER GUIDE



VOCATIONAL EDUCATION/
SPECIAL EDUCATION PROJECT

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PREFACE

This teacher's guide is one of a series of publications focusing upon the occupational preparation of persons with special education needs. It is intended to be used jointly by concerned teachers as they work collectively to serve students with unique educational problems. Developed and tested by cooperating teachers, these materials represent the culmination of three years of intensive listening, communication, cooperation, and positive action between vocational and special education teachers. If the exciting ideas in these pages are actively and cooperatively implemented, the impact upon our young people could well be tremendous.

ACKNOWLEDGEMENTS

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The occupational task analysis data/information for the Construction Cluster was obtained from the Ingham Intermediate School District. In early 1973, this Intermediate School District completed a comprehensive task analysis project covering 50 different occupations in a three-county area. The key analysis occupations selected for this cluster were identical to those construction occupations identified and analyzed by the project.

Acknowledgement is due the Ingham Intermediate School District and the Michigan Department of Education for arranging for the release of this data.

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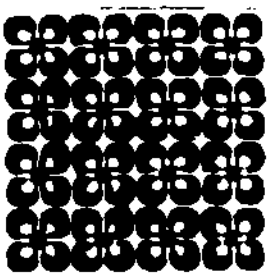


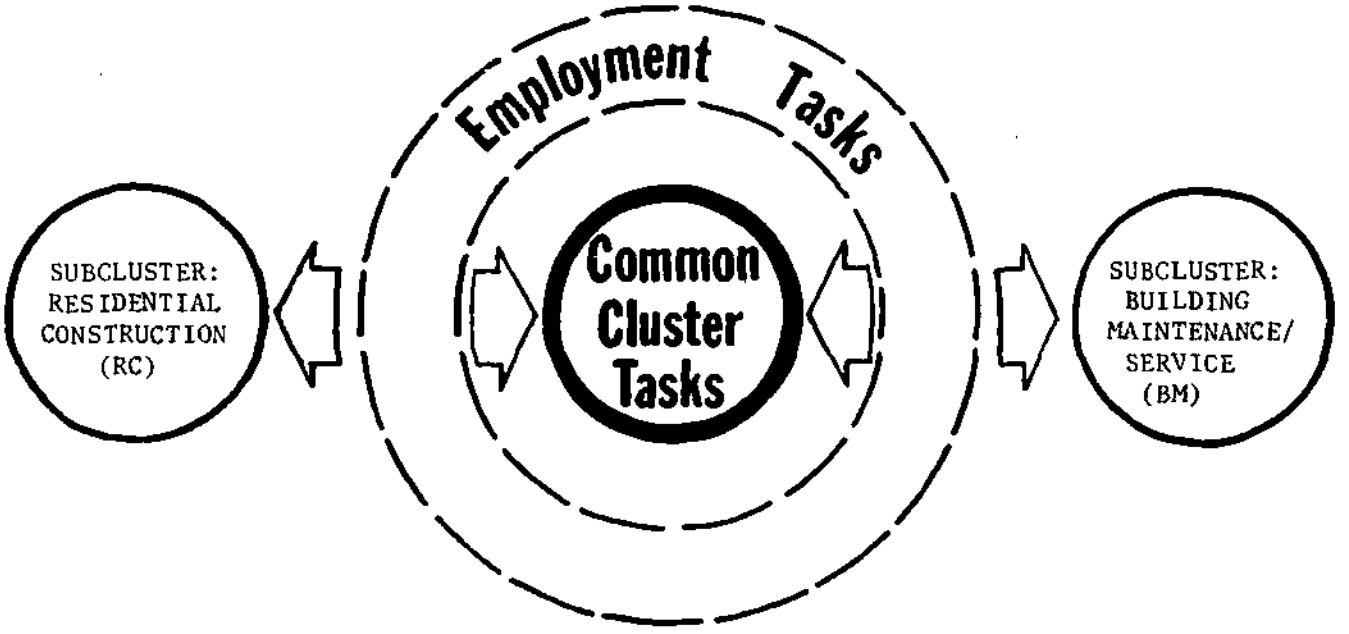
TASK ANALYSIS INFORMATION

CONSTRUCTION CLUSTER

- CLUSTER ORGANIZATION
- CLUSTERED OCCUPATIONS
- DICTIONARY OF OCCUPATIONAL TITLES
- CLUSTER COMMONALITY ANALYSIS
- SUBCLUSTER COMMONALITY ANALYSIS:
  BUILDING MAINTENANCE/SERVICE
- SUBCLUSTER COMMONALITY ANALYSIS:
  RESIDENTIAL CONSTRUCTION

CLUSTER ORGANIZATION

CONSTRUCTION CLUSTER (CON)



CLUSTERED OCCUPATIONS

C L U S T E R : CONSTRUCTION

OE PROGRAM CODE	SUBCLUSTER TITLE	D.O.T.	OCCUPATIONAL TITLES
17.1001 17.1099 17.1010 17.1004	Residential Construction	*860.381 860.781 860.887 863.884 *884.887 886.887 861.887	Carpenter Carpenter, Rough Carpenter Helper Insulation Worker Cement Mason Helper Roofer Helper Bricklayer Helper
17.10 17.11	Building Maintenance and Service	*899.381 381.887 381.887 *382.884 389.887	Maintenance Man, Building Charwomen Porter Janitor Sexton

*Key Analysis Occupation

DICTIONARY OF OCCUPATIONAL TITLES

The following is a list of occupational descriptions taken from the third edition (1965) of the Dictionary of Occupational Titles. These represent the key analysis occupations for the Construction Cluster.

Each occupational title represents an entry-level occupation which is generally available (in demand) across the state of Michigan at the present time. However, teachers and curriculum planners must carefully study the generalizability of this information/data to their specific community. Local or regional manpower information and data must be carefully reviewed and analyzed in making decisions related to local vocational program offerings and specific curriculum or course content.

860.381 *CARPENTER* Constructs, erects, installs, and repairs structures and fixtures of wood, plywood, and wallboard, using carpenter's handtools and power tools, and conforming to local building codes: Studies blueprints, sketches, or building plans, for information pertaining to type of material required, such as lumber or fiberboard, and dimensions of structure or fixture to be fabricated. Selects specified type of lumber or other materials. Prepares layout, using rule, framing square, and calipers. Marks cutting and assembly lines on materials, using pencil, chalk, and marking gage. Shapes materials to prescribed measurements, using saws, chisels, and planes. Assembles cut and shaped materials and fastens them together with nails, dowel pins, or glue. Verifies trueness of structure with plumb bob and carpenter's level. Erects framework for structures and lays subflooring. Builds stairs and lays out and installs partitions and cabinet work. Covers subfloor with building paper to keep out moisture and lays hardwood, parquet, and wood-strip-block floors by nailing floors to subfloor or cementing them to mastic or asphalt base. Applies shock-absorbing, sound-deadening, and decorative paneling to ceilings and walls. Fits and installs prefabricated window frames, doors, doorframes, weather stripping, interior and exterior trim, and finish hardware, such as locks, letter drops, and kick plates. Constructs concrete forms and pouring chutes. Erects scaffolding and ladders for assembling structures above ground level.

899.381 *MAINTENANCE MAN, BUILDING* Repairs and maintains physical structures of commercial and industrial establishments, such as factories, office buildings, apartment houses, and logging and mining constructions, using handtools and power tools: Replaces defective electrical switches and other fixtures. Paints structures, and repairs woodwork with carpenter's tools. Repairs plumbing fixtures. Repairs plaster and lays brick. Builds sheds and other outbuildings.

382.884 *JANITOR* Keeps hotel, office building, apartment house, or similar building in clean and orderly condition and tends furnace and boiler to provide heat and hot water for tenants, performing any combination of following duties: Sweeps and mops or scrubs hallways and stairs. Regulates flow of fuel into automatic furnace or shovels coal into hand-fired furance. Empties tenants' trash and garbage containers. Keeps building in good repair, performing routine painting, plumbing, electrical wiring, and other related maintenance activities, using handtools. Cautions tenants regarding complaints about excessive noise, disorderly conduct, or misuse of property. Notifies management concerning need for major repairs or additions to lighting, heating, and ventilating equipment. Cleans snow and debris from sidewalk. Mows lawn, trims shrubbery, and cultivates flowers, using handtools and power tools.

844.887 *CEMENT-MASON HELPER* Assists Cement Mason to smooth and finish exposed surfaces of concrete by performing finishing tasks, such as floating freshly laid concrete and edging concrete slabs: Levels freshly poured concrete, using screed. Rubs screeded surface with hand or long-handled float, and pushes and pulls edger along edges of concrete to prepare edges for final finishing. Pushes and pulls stiff brush over finished surfaces of concrete pavement to produce roughened surface. May push and pull canvas belt back and forth across surface of concrete pavement to smooth surface and remove trowel and float marks. May chip, grind, or rub concrete surfaces to remove bulges and rough spots, and patch defects with cement mortar.

CLUSTER COMMONALITY ANALYSIS

CONSTRUCTION CLUSTER

COMMON CLUSTER TASKS

x - *essential*
o - *desirable*

SUBCLUSTERS (CON)

INSTRUCTIONAL TASK MODULES	RESIDENTIAL CONSTRUCTION	BUILDING MAINTENANCE/ SERVICE
CT01 Use measurement and layout tools	x	x
CT02 Use saws	x	x
CT03 Use planing, smoothing, and shaping hand tools	x	x
CT04 Use drilling and boring tools	x	x
CT05 Use fastening and disassembly tools	x	x
CT06 Maintain hand and power tools	x	x
CT07 Operate power hand tools	x	x
CT08 Utilize linear, square, and cubic measures of materials	x	x
CT09 Select and use fasteners	x	x
CT10 Use adhesives for fabrication	x	x
CT11 Interpret information from floor plans	x	x
CT12 Interpret information from elevation drawings	x	o
CT13 Interpret information from detail drawings	x	x
CT14 Interpret information from section drawings	x	x
CT15 Interpret information from building specifications	x	o
CT16 Install cabinet hardware	x	x
CT17 Operate power machine tools	x	x
CT18 Recognize common lumber sizes and defects	x	o
CT19 Identify characteristics/applications of plywood materials	x	o
CT20 Assist in pouring sidewalks and drives	x	o
CT21 Assist in installing drain tile and waterproofing	x	o
CT22 Finish unfinished cabinet facings	x	x
CT23 Finish counter tops	x	o
CT24 Install factory-built cabinets	x	o

SUBCLUSTER COMMONALITY ANALYSIS

BUILDING MAINTENANCE/SERVICE

INSTRUCTIONAL TASK MODULES		SELECTED ENTRY OCCUPATIONS			
		MAINTENANCE MAN, BUILDING	CHARWOMEN	PORTER	JANITOR
BM01	Brush sweep floor areas	x	x	x	x
BM02	Clean stairwells	x	x	x	x
BM03	Mop sweep floors	x	x	x	x
BM04	Wet mop floors	x	x	x	x
BM05	Operate an automatic floor machine	x	x	x	x
BM06	Strip a floor	x	o	x	x
BM07	Seal a floor	x	o	x	x
BM08	Apply floor finish	x	o	x	x
BM09	Wash painted surfaces	x	x	x	x
BM10	Clean wall paper	x	x	x	
BM11	Wash wainscoted ceramic surfaces	x	x	x	
BM12	Wash walls and ceilings by hand	x	x	x	o
BM13	Wash walls and ceilings by machine	x	x	x	o
BM14	Wash and clean venetian blinds	o	x	x	
BM15	Clean and disinfect restroom equipment	x	x	x	o
BM16	Disinfect restroom floors	x	x	x	o
BM17	Clean and polish mirrors, windows, and glass	o	x	x	o
BM18	Wash and polish metal, wooden and upholstered furniture	o	x	x	
BM19	Clean light fixtures	x	o	x	o
BM20	Clean rugs and carpets	x	x	x	x

x - essential
o - desirable

SUBCLUSTER COMMONALITY ANALYSIS

BUILDING MAINTENANCE/SERVICE

SELECTED ENTRY OCCUPATIONS

INSTRUCTIONAL TASK MODULES	MAINTENANCE MAN, BUILDING	CHARWOMEN	PORTER	JANITOR
BM21 Wash windows	o	x	x	x
BM22 Clean metal surfaces	o	x	x	x
BM23 Perform dusting	o	x	x	x
BM24 Store maintenance supplies and equipment	x	x	x	x
BM25 Schedule maintenance activities	x			x

x - essential
o - desirable

SUBCLUSTER COMMONALITY ANALYSIS

RESIDENTIAL CONSTRUCTION

SELECTED ENTRY OCCUPATIONS

INSTRUCTIONAL TASK MODULES	CARPENTER	CARPENTER, ROUGH	CARPENTER HELPER	INSULATION WORKER	CEMENT MASON HELPER	ROOFER HELPER	BRICKLAYER HELPER
RC01 Handle and store building materials	x	x	x	x	x	x	x
RC02 Assist in laying out building lines	x	x	o		o	x	o
RC03 Assist in constructing forms for footings	x	x	o		o		o
RC04 Mix concrete and mortar	o	o	o		x		x
RC05 Lay blocks	o	o			o		o
RC06 Set posts and columns	x	x	o		o		o
RC07 Assist in setting girders and beams	x	x	o		o		o
RC08 Assist in constructing framing over girders and beams	x	x	o				
RC09 Assist in installing sills	x	x	o				
RC10 Assist in installing floor joists	x	x	o				
RC11 Frame floor openings	x	x	o				
RC12 Install bridging	x	x	x				
RC13 Attach subflooring	x	x	x				
RC14 Assist in framing outside wall corner posts	x	x	o				
RC15 Assist in framing partition intersections	x	x	o				
RC16 Follow a master stud layout	x	x	o				
RC17 Frame rough openings	x	x	o				
RC18 Assemble a wall section	x	x	o				
RC19 Erect a wall section	x	x	o				
RC20 Install partition sections	x	x	o				

x - essential
o - desirable

SUBCLUSTER COMMONALITY ANALYSIS

RESIDENTIAL CONSTRUCTION

SELECTED ENTRY OCCUPATIONS

INSTRUCTIONAL TASK MODULES	CARPENTER	CARPENTER, ROUGH	CARPENTER HELPER	INSULATION WORKER	CEMENT MASON HELPER	ROOFER HELPER	BRICKLAYER HELPER
RC21 Install bracing to exterior walls	x	x	o				
RC22 Add double top plate	x	x	o				
RC23 Apply wall sheathing	x	x	x				
RC24 Assist in assembling a ceiling frame	x	x	o				
RC25 Cut and erect roof rafters	x	x	o				
RC26 Frame-in roof openings	x	x	o				
RC27 Assist in anchoring a roof frame	x	x	x				
RC28 Assemble and install roof trusses	x	x	o				
RC29 Attach roof sheathing	x	x	x			x	
RC30 Install asphalt roofing materials	x	x	x			x	
RC31 Assist in installing vapor barrier	x	x	x	x			
RC32 Install batt and blanket insulation	x	x	o	x			
RC33 Install reflective insulation	x	x	o	x			
RC34 Install fill insulation	x	x	o	x			
RC35 Assist in installing rigid insulation	x	x	o	x			
RC36 Assist in applying or installing acoustical insulation materials	x	x	o	x			
RC37 Recognize types and parts of windows	x	x	o				
RC38 Assist in setting windows	x	x	o				
RC39 Assist in installing door frames	x	x	o				
RC40 Install a garage door	x	o	o				

x - essential
o - desirable

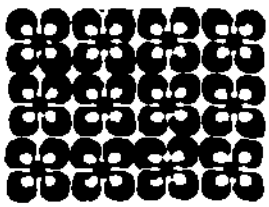
SUBCLUSTER COMMONALITY ANALYSIS

RESIDENTIAL CONSTRUCTION

SELECTED ENTRY OCCUPATIONS

INSTRUCTIONAL TASK MODULES	CARPENTER	CARPENTER, ROUGH	CARPENTER HELPER	INSULATION WORKER	CEMENT MASON HELPER	ROOFER HELPER	BRICKLAYER HELPER
RC41 Assist in constructing rake and cornice sections	x	o	o				
RC42 Install horizontal siding	x	o	o				
RC43 Install vertical siding	x	o	o				
RC44 Assist in installing siding systems	x	o	o				
RC45 Install gutter systems	x		o			o	
RC46 Prepare a brick veneer finish							x
RC47 Recognize interior finishing operations	x		o				
RC48 Assist in applying ceiling tile	x		o				
RC49 Hang interior doors	x		o				
RC50 Apply interior trim	x		o				
RC51 Lay interior floors	x		o				

x - essential
o - desirable

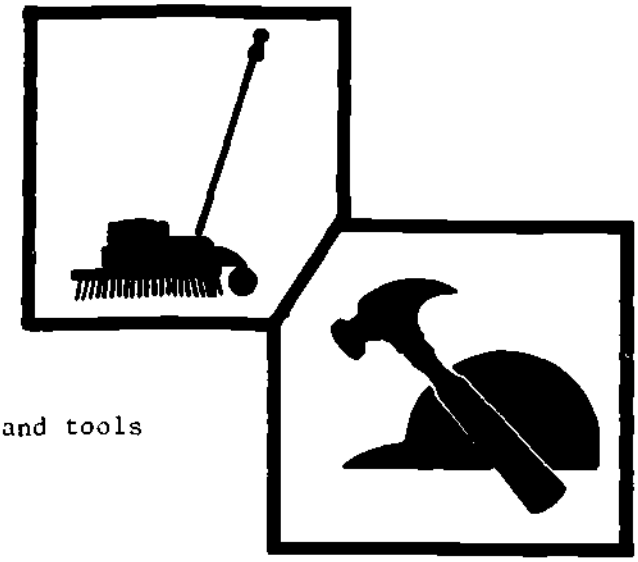


INSTRUCTIONAL TASK MODULES

CONSTRUCTION CLUSTER

- COMMON CLUSTER TASKS
- SUBCLUSTER: BUILDING MAINTENANCE/SERVICE
- SUBCLUSTER: RESIDENTIAL CONSTRUCTION

COMMON CLUSTER TASKS



INSTRUCTIONAL TASK MODULES

CT01 Use measurement and layout tools

CT02 Use saws

CT03 Use planing, smoothing, and shaping hand tools

CT04 Use drilling and boring tools

CT05 Use fastening and disassembly tools

CT06 Maintain hand and power tools

CT07 Operate power hand tools

CT08 Utilize linear, square, and cubic measures of materials

CT09 Select and use fasteners

CT10 Use adhesives for fabrication

CT11 Interpret information from floor plans

CT12 Interpret information from elevation drawings

CT13 Interpret information from detail drawings

CT14 Interpret information from section drawings

CT15 Interpret information from building specifications

CT16 Install cabinet hardware

CT17 Operate power machine tools

CT18 Recognize common lumber sizes and defects

CT19 Identify characteristics/applications of plywood materials

CT20 Assist in pouring sidewalks and drives

CT21 Assist in installing drain tile and waterproofing

CT22 Finish unfinished cabinet facings

CT23 Finish counter tops

CT24 Install factory-built cabinets

COMMON CLUSTER TASKS

TASK: Use measurement and layout tools

Code: CON - CT01

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name specific layout/ measuring tools: a. level b. tape or rule c. framing square d. T bevel e. scratch awl f. steel long tape g. chalk line h. line level i. combination square j. marking gauge k. plumb bob l. dividers m. butt gauge. 2. recognize and observe safety precautions in using layout and measuring tools. 3. interpret measuring tools accurately. 4. properly store specific layout and measuring tools. 5. demonstrate the different applications or uses of each tool.	• Students view film as an introduction and review of concept. • Students view film loops and illustrative charts. • Teacher demonstrates the use of the identified tools with individual students on specific jobs. Students return the demonstration. Note: This task will be performed as a part of several succeeding tasks.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,9	Modern Carpentry, pp. 8-22	13	22
NUMBERS B 2a,4a,i,5	"Carpentry Part I - Measuring, Marking, and Leveling Tools"	8	44
	"Layout Using Marking Gauge"	9	32
APPLICATION C 5,7	"How to Use Measuring Tools"	9	57
PHYSICAL D 1a-d, 2a/b, 3	Stanley charts	16	46

COMMON CLUSTER TASKS

Code: CON - CT01 TASK: Use measurement and layout tools

Basic Information for Cooperative Teaching

Language of the Task

Level

Tape or rule

Framing square

T bevel

Scratch awl

Steel long tape

Chalk line

Line bevel

Combination square

Marking gauge

Plumb bob

Dividers

Butt gauge

Feet

Inches

Scale (1/4" = 1')

Quantitative Concepts

Measure boards for thickness, width and length. Lengths is in feet, width is in feet or inches, thickness is in inches.

The concept of rounding may be applied by rounding the actual measurement up to: even numbers of feet in length, i.e. 6', 8', 10'; even numbers of inches in width i.e. 4", 6", 8"; full numbers of inches in thickness i.e. 1", 2", 3".

Prepare a shopping list for tools. Find these items in a catalogue, identify and price, figure total cost.

Suggestions:

- Teacher picks up a tool - student identify.
- Student picks up tools one at a time and identify.
- Student identify which tool another student is using in pantomine.
  - by description of tool.
  - by name.
- Student match name and tool by
  - printed label
  - verbal identification
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.
- Informally encourage voluntary buddy system for assisting deaf students (individualize without calling attention to the individual).
- Be careful in using words with multiple meanings when talking to lip reading deaf students (plumb, scale).

Supportive Instructional Materials:

Assortment of measuring tools supplied by the vocational teacher.

COMMON CLUSTER TASKS

TASK: Use saws

Code: CON - CT02

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name, the different types of saws used in construction. 2. recognize and observe specific safety precautions for using saws. 3. select and demonstrate the appropriate saw for a given application or operation. 4. identify and describe the proper storage condition for specific saws.	• Students prepare a display of different saws with identifying labels. • Students view film to introduce and review concepts. • Teacher provides demonstration with transparencies of each saw and its use with individual students. • Students review illustrated text materials. Note: This task will be performed as a part of several succeeding tasks.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3	Modern Carpentry, p. 10	13	22
NUMBERS B 4a	"Saw Operations"	8	57
	"Hand Saw Nomenclature"	12	13
APPLICATION C 2,5			
PHYSICAL D 1a,d,f 2b, 3c,g			

COMMON CLUSTER TASKS

Code: CON - CTO2 TASK: Use saws

Basic Information for Cooperative Teaching

Language of the Task

Cross cut saw

Rip saw

Keyhole saw

Hack saw

Radial arm saw

Set

Quantitative Concepts

Determine the number of saw points (teeth) per inch, by measuring one inch along the cutting edge of a saw, and counting the number of points within the inch. (8-point saw, 10-point saw).

Suggestions:

- Teacher and deaf student should cooperative develop some simple signs related to language of the task.
- Drill deaf student extensively on language of the task.
- Discuss the importance of saw safety and care, i.e. a wood-cutting saw should not be allowed to touch metal, concrete, or other hard surfaces.

Supportive Instructional Materials:

Collect examples of each of the four hand saws from the vocational department.
Field trip to the construction lab or construction site.

COMMON CLUSTER TASKS

TASK: Use smoothing, planing, and shaping hand tools

Code: CON - CTO3

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	
				Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name specific types of planing, smoothing, and shaping hand tools: a. jack plant b. block plane c. utility knife d. scraper e. surform plane f. router plane g. wood chisels h. putty knife i. flooring chisel j. cabinet maker's plant. 2. recognize and observe specific safety precautions for using planing, smoothing, and shaping tools. 3. select and demonstrate the appropriate tool for a given application or operation. 4. identify, describe, and simulate the proper storage conditions for specific smoothing, planing, and shaping tools.

Instructional Methods

- Students view film loops on use and sharpening of tools.
- Students review illustrated text for nomenclature.
- Teacher provides demonstration on use and maintenance of each tool for each individual student as he begins to use selected tools.
- Para-professionals provide sustained involvement with students having difficulty with this task.

Note: This task will be performed as a part of several succeeding tasks.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3	Modern Carpentry, pp. 12-13	13	22
NUMBERS	"Planes and Their Uses"	9	33
	"Sharpening the Plane"	9	57
APPLICATION C 2,5,8	"Woodworking-Part I" 8 loops	9	51
PHYSICAL			

COMMON CLUSTER TASKS

Code: CON - CTO1 TASK: Use smoothing, planing, and shaping hand tools

Basic Information for Cooperative Teaching

Language of the Task

Smooth plane
Jack plane
Block plane
Surformer
Rasp
File shapes
- half-round
- square
- rat-tail
- triangle

Utility knife
Scraper
Router
Chisel
- wood
- cold
- bride
- brick

Smooth
Level
Flush
File handle
Tool box or kit
Oil stone
Grinding wheel
Wire brush

Quantitative Concepts

The following are common tool sizes which the student should know:
- planes 6" - 14" (length of bed)
- files (length of blade)
- rasp/surformer 6" - 12" (length of blade)

Determine the size of a given tool by measuring the appropriate part of the tool.

Suggestions:

- Stress safety and care in handling tools (i.e. storage of tools).
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Be careful in using words with multiple meanings when talking to lip reading deaf students (plane, jack, rat tail).

Supportive Instructional Materials:

Catalogue from Sears, etc., for tool identification
Industrial catalogue to learn industrial name brands

COMMON CLUSTER TASKS

TASK: Use drilling and boring tools

Code: CON - CT04

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	
				Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name specific drilling and boring tools: a. hand drill b. push drill c. brace d. countersink e. expansive bit f. auger bits (1/4 to 1") g. twist drill bits. 2. recognize and observe specific safety precautions related to using drilling and doring hand tools. 3. select and demonstrate the appropriate tool for a given application or operation. 4. identify, describe, and simulate the proper storage conditions for given drilling and boring hand tools.

Instructional Methods

- Students prepare a display of tools with tool parts labeled.
- Students view film loops.
- Teacher encourages small peer group cooperation and interaction.
- Teacher provides a demonstration of specific tools for individual jobs with each student.

Note: This task will be performed as a part of several succeeding tasks.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3,4	Modern Carpentry, pp. 14-15	13	22
NUMBERS B 1, 4a	"Portable Drills"	12	13
APPLICATION C 2,5,8	"Power Drills for Woodworking"	9	47
PHYSICAL D 1a,d 2b 3c,e,f,g	"How to Use Hand Boring Tools"	9	57

COMMON CLUSTER TASKS

Code: CON - CT04 TASK: Use drilling and boring tools

Basic Information for Cooperative Teaching

Language of the Task	Quantitative Concepts
Auger bits	Measure the diameter of drilled hole.
Standard bits	Recognize size of standard bits.
Tang or shank	Using drilling tools, measure the diameter in fractional parts of an inch to a 1/16th of an inch accuracy.
Twist	
Drills	
Brace	
Countersink	

Suggestions:

- Drill several holes with different size bits. Measure the diameters of the holes and explain the relationship between the 24 stamped on the shank and the 1 1/2" diameter of the hole drilled by the bit. (Size stamped on shank is a whole number which indicates the size of the diameter in 16ths of an inch)
- Use pieces of cardboard 1/16" long to construct the size of the diameter.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.
- Informally encourage voluntary buddy system for assisting deaf students (individualize without calling attention to the individual).

Supportive Instructional Materials:

Several sizes of auger bits
Board with holes drilled by specified bits
Ruler with divisions of an inch down to 16ths
Pieces of paper 1/16" in width

COMMON CLUSTER TASKS

TASK: Use fastening and disassembly tools

Code: CON - CT05

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name specific fastening and disassembly tools: a. ripping bar b. rip chisel c. curved claw hammer d. rip claw hammer e. half hatchet f. soft face hammer g. adjustable wrench h. screw drivers i. nail sets j. screw driver bits k. pliers l. ratchet screwdriver m. Phillip' screwdriver. 2. recognize and observe specific safety precautions in using fastening and disassembly tools. 3. select and demonstrate the appropriate tool for a given application. 4. identify, describe, and demonstrate the the proper storage condition for given fastening and disassembly tools.	• Students review texts for illustrative materials, diagrams, and pictures. • Teacher provides demonstration of each tool for specific jobs with individual students. Students return the demonstration. • Teacher matches successful students who are interested in helping those having difficulty. Note: This task will be performed as a part of several suceeding tasks.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3,4 NUMBERS APPLICATION C 2,5,8 PHYSICAL D 1a,d,f 2b 3c,e,f,g	Modern Carpentry, pp. 16,17,19	13	22
	Carpentry and Builder's Guide Volume I	13	25

COMMON CLUSTER TASKS

Code: CON - CT05 TASK: Use fastening and disassembly tools

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	**Quantitative Concepts**	
Claw hammer Ripping bars Nail set Screw driver	Recognize hammer sizes in ounce measurements. Recognize screwdriver sizes in inch measurements. Recognize nail set sizes in diameters of the tip.	• Compare the weight of an 8 oz. hammer to that of a 18 oz. hammer (lift, pendulum swing, balance). • Measure the length of various size ripping bars. • Explain that nail sets are sized by the diameter measurement of the tip (measurement is in 32nd of an inch). • Measure the size of several different screw drivers (length from ferrule to the tip). • Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.

Supportive Instructional Materials:

Several claw hammers of different size.
Several ripping bars of varying length.
Nail sets of varying size.
Several screw drivers of different size.

COMMON CLUSTER TASKS

TASK: Maintain hand and power tools

Code: CON- CTO6

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	
				Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. provide for hand and power tool maintenance by performing the following: a. wipe tools clean following use b. keep tool handles tight c. keep tool edges sharp by honing, grinding, and filing d. set saws.

Instructional Methods

- Teacher presents class demonstration on care and maintenance of individual hand and power tools.
- Students review maintenance techniques and procedures illustrated in texts.
- Students prepare a bulletin board display illustrating the importance of maintaining tools.
- Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3,9	Modern Carpentry, pp. 20-22	13	22
NUMBERS	Modern Power Tool and Woodworking Book	13	5
APPLICATION C 5,8	"Getting the Most From Your Home Power Tools" (booklet)	13	25
PHYSICAL D 1a,b,d,f 2a/b 3c,f	"Care and Use of Hand Tools" Part I, II, III, IV	8	

COMMON CLUSTER TASKS

Code: CON - CT06 TASK: Maintain hand and power tools

Basic Information for Cooperative Teaching

Language of the Task

Portable	Kerf
Stable	Tool insignia
Sharpen	Brace
3-prong plug	Auger bits
Ground	Forged steel
3 phase wiring	
Honing	
Grinding	
Set the saw	
Edges	
Filing	
Handles	
Tight	
Teeth #/"	

Quantitative Concepts

Determine the number of teeth per inch (points).

Recognize sharpening angles (15°-16°, 30°, 45°, 90°)

Discuss tool prices in relation to quality (i.e. foreign made vs. American made).

Recognize auger bit sizes #4-16. The numbers 4-16 represent the diameter of the bit in 16ths of an inch. i.e. a no. 8 drill is 8/16" of 1/2" in diameter.

Suggestions:

- Safety
- Importance of tool exchanges and returning to storage.
- Tool casts
- Drill deaf student extensively on language of the task.
- Suggest to parents that tasks be reinforced and experienced in the home environment.

Supportive Instructional Materials:

Wall charts by Stanley, Sears, Craftsman, Lufkin, Starratt
General Motors film on "ABC's of Handtools"

COMMON CLUSTER TASKS

TASK: Operate power hand tools

Code: CON - CTO7

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	
				Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name specific hand power tools: a. portable circular saw (skil) b. saber saw c. portable electric drill d. power plane e. router f. portable sanders. 2. recognize and observe specific safety precautions in operating power hand tools. 3. select and demonstrate the appropriate power tool for a given application. 4. identify, describe, and demonstrate the proper storage condition for specific power hand tools.

Instructional Methods

- Teacher conducts vocabulary exercise on identification of tool parts with flash cards and mock-ups.
- Students view film loop series.
- Teacher provides demonstration of the safe use of power hand tools with individual students.
- Teacher concentrates his effort with students having difficulty.
- Students review illustrated text materials.

Note: This task will be performed as a part of several succeeding tasks.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3,4,7,9	Modern Carpentry, Chapter 2 pp. 25	13	22
NUMBERS B 4a	"Power Tools" (series)	12	10
APPLICATION C 5,8	"Power Tools" (series)	9	7
PHYSICAL D 1a,b,d 2b 3c,g	"ABC's of Handtools"	13	21

COMMON CLUSTER TASKS

Code: CON - CT07 TASK: Operate power hand tools

Basic Information for Cooperative Teaching

Language of the Task

Portable drill press

Portable circular saw (skil saw)

Portable saber saw

Portable jig saw

Portable electric drill

Power plane

Hand disc sander

Hand vibrating sander

Hand belt sander

Portable router

Pneumatic chisel

Ground (wire)

Quantitative Concepts

Recognize common power tool sizes:
skill saws 4" - 7 1/4" or 8" (diameter on the blade)

radial arm 8"-12" (diameter on the blade)

panel saw 8" (blade diameter)

Interpret the amp rating of a portable power tool and convert it to a horsepower rating.

Suggestions:

- Make sure instructor okays the use of tool independently.
- Discuss brand names such as Black and Decker, Craftsman, Skil, Rockwell, Powercraft, Luthin, Stanley, Commercial Heavy Duty.
- Stress safety in operation of power hand tools such as saw guards, etc.
- Observe safety rules.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.
- Suggest to parents that tasks be reinforced and experienced in the home environment.

Supportive Instructional Materials:

Catalogue of brand name tools
Stanley films, 16mm, film loops, charts
Instructor's favorite text

COMMON CLUSTER TASKS

TASK: Utilize linear, square, and cubic measures of materials

Code: CON - CTOS

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify common linear measurements to include feet, inches, and fractions.
2. identify common square measurements to include square yards (carpet), square feet (plywood) and squares (roofing).
3. identify common cubic measurements to include cubic yards (concrete) and board feet.
4. compute the needed linear, square, and cubic sizes of materials for a given practical application or problem accurately.

Instructional Methods

- Special education or supportive teacher should introduce and reinforce basic math concepts.
- Students measure and determine sizes of construction materials found in the lab.
- Teacher discusses the importance of using linear, square, and cubic measures by using floor plans and referring to the bill of materials designating sizes of construction materials.
- Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3,7	Modern Carpentry, p. 61	13	22
NUMBERS B 1,2,4a,5,6	Estimating for Building Trades	13	4
APPLICATION C 3,5			
PHYSICAL			

COMMON CLUSTER TASKS

Code: CON - CTO8 TASK: Utilize linear, square, and cubic measures of materials

Basic Information for Cooperative Teaching

Language of the Task	Quantitative Concepts
Cubic Square Formula Multiply Divide	Measure lengths of materials in the room in inches (pencil) in feet and inches (length of room). Measure lengths and widths in inches (sheets of paper) in feet and inches (table top). Discuss linear measurement as it relates to the number of feet of string on a ball of kite string. Figure square measurements of a table top, floor surface area, or a pane of glass. Compute the volume of air in the room in cubic feet. Note: round off length, width, and thickness measurements to full feet before computing cubic volume to avoid the mathematical frustrations which often contaminate the concept being taught.

Suggestions:

- Ask Construction and Trades instructors for random sizes and shapes of commonly used building materials i.e. plywood - 1/4, 1/2, 3/4; dimension lumber - 1x4, 1x6, 1x8, 2x4, etc.
- Purpose of these scraps is to discuss measurements accuracy and tolerance, as well as measuring.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Informally encourage voluntary buddy system for assisting deaf students (individualize without calling attention to the individual).
- Develop simple problems for students to solve.

Supportive Instructional Materials:

Scraps of building construction materials supplied by the building trades instructor(s).

TASK: Select and use fasteners

Code: CON - CTO9

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will

1. identify specific types of metal fasteners:
   a. nails (basic types)
      1) common
      2) box
      3) casing
      4) finish
      5) brad
      6) galvanized
      7) ring shank
      8) screw nail
   b. nail sizes
      1) 16d (penny)
      2) 10d
      3) 8d
      4) 7d
      5) 6d
      6) 4d
      7) 2d
   c. wood screws
      1) round (head shape)
      2) oval
      3) flat
   d. screw sizes
      1) gauge
      2) length
2. demonstrate the appropriate or typical applications for each type and size of fastener.

Instructional Methods

- Students collect and display all sizes/types of fasteners as an examination.
- Students view film loops.
- Students should practice the application of all types of fasteners, using scrap materials.
- Teacher and students (in small groups) review and discuss illustrated texts and wall charts on fasteners.
- Teacher encourages small peer group cooperation and interaction.

Note: This task is performed as a part of several succeeding tasks.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,6,9	Modern Carpentry, p. 67	13	22
NUMBERS B 2a,b	"Correct Nailing" (wall chart)	16	30
APPLICATION C 5,8	"Hammers and Nails"	9	47
	"Correct Use of Nails"	9	47
PHYSICAL D 1a-f (-e) 2a/b, 3c	"Common and Finish Nails"	9	33

COMMON CLUSTER TASKS

Code: CON - CT09 TASK: Select and use fasteners

Basic Information for Cooperative Teaching

Language of the Task

"Penny"

Abbreviation of "d"
penny = d (symbol)

Nails
common
box
casing
finish
brads
screw nails

Wood screws (head shape)
round
flat
oval

Quantitative Concepts

Recognize differences in fasteners:
nails: common, finish, ring, double head
screws: flat head, round head, oval head, pan head
bolts: carriage, lag, machine, etc.

Measure sizes of
nails: length in inches related to d (penny) standards
screws: length in inches plus diameter as they relate to standard numbers
bolts: length in inches plus diameters in fractions of an inch

Suggestions:

- Measure nails and show that the nail size in pennies starts with the inch long nail and increases 1/4" for each penny.

* For more advanced students:

$$\text{inch length of nail} = \frac{\text{"d"}}{4} + 1/2$$

"d" number of nail = 4 (length in inches - 1/2)

- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.

Supportive Instructional Materials:
Nails of varying lengths
Ruler with inch and half-inch divisions

COMMON CLUSTER TASKS

TASK: Use adhesives for fabrication

Code: CON - CT10

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify different types of adhesives:
   a. white glue
   b. contact cement
   c. casein glue
   d. mastics.
2. determine specific glue application procedures and drying times.
3. demonstrate the appropriate surface Preparation.
4. demonstrate the correct procedures for applying each type of glue.
5. demonstrate the appropriate techniques/ procedures for clamping a glue joint fabrication to meet specifications.

Instructional Methods

- Teacher provides demonstration of different clamping procedures and techniques to small groups of students.
- Students view film loop.
- Students review illustrated procedures for gluing and clamping in texts.
- Teacher concentrates his effort with students having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,7,9	Modern Carpentry, p. 68	13	22
NUMBERS B 4b,d,f	Handbook of Adhesives	13	56
	"Glues and Clamps"	9	47
APPLICATION C 5,8			
PHYSICAL D 1a,b, 2b			

COMMON CLUSTER TASKS

Code: CON - CT10 TASK: Use adhesives for fabrication

Basic Information for Cooperative Teaching

Language of the Task

Adhesive

Contact cement

White glue

Elmer's

Drying time

Headers

Beam

Girders

Clamps
- adjustable
- wood screw

Quant tative Concepts

Recognize size/capacity of adhesive containers as measured in:
- ounces
- pints
- quarts
- gallons

Determine the drying time (in minutes and/or hours) by interpreting label information.

Suggestions:

- Glue complete surface (i.e. corners).
- Brush outside in (rather than inside-out).
- Discuss truss gussets (applications plus examples).
- Para-professionals provide sustained involvement with students having difficulty with this task.
- Teacher matches successful students who are interested in helping those having difficulty.

Supportive Instructional Materials:

COMMON CLUSTER TASKS

TASK: Interpret information from floor plans

Code: CON - CT11

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. locate and interpret the scale of a given floor plan. 2. sketch the floor plan symbol for each of the following components: a. doors b. windows c. plumbing fixtures d. fireplace e. brick f. stone g. concrete h. concrete block. 3. locate and determine the size of the following floor plan elements: a. windows b. doors c. stairs d. interior partitions e. plumbing fixtures f. footings g. fireplaces	• Students look over and review floor plans, disucssing their value. • Class visits a job site and observes workers using prints. • Students review illustrated text materials. • Teacher develops activity/quiz worksheet on identification of floor plan symbols. • Instructor should use simplified, small prints for class review. • Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 6,9 NUMBERS B 4a, 5 APPLICATION C 6 PHYSICAL D 1a, 2a	Modern Carpentry, Unit 5 Building Trades Blueprint Book Parts I & II	13 13	22 4

COMMON CLUSTER TASKS

Code: CON - CT11 TASK: Interpret information from floor plans

Basic Information for Cooperative Teaching

Language of the Task

Scale
Section
Legend
Elevations
Recognize symbols of the following components:
- door
- window
- plumbing fixture
- fireplace
- brick
- stone
- concrete
- concrete block
- flashing
- insulation

Roof pitch
Grade
Fill
Basement
First floor
Living room
Dining room
Kitchen
Front
Right side
Left side
Rear
Garage
Bedroom
Bathroom
Closet
Dinette
Storage
Foyer
Family room
Laundry room
Porch
Hall
Stairs

Quantitative Concepts

Idea of scale in actual application, i.e. 1 inch (on a model or drawing = 1 foot (on the real object).

Primary architectural scale:
1/4" = 1 0"
i.e. 1/4" on the drawing equals one foot on the building.

Other common architectural scales:
1/8" = 1'-0" (plot plan)
1/2" = 1'0" (detail and section drawings)
3/4" = 1'0" (section drawings)

Suggestions:

- On flash cards students can associate plan symbols and meaning.
- Given a room designation, select appropriate symbols, i.e. bath needs (plumbing, door, window - not fireplace).
- Students choose to design a room drawn to scale.
- Students participate in designing and coordinating a full house plan.
- Students measure their own classroom and then draw it at the chalkboard or on paper at 1/4" = 1' scale, 1/2" = 1' scale, and 3/4" = 1' scale.
- Be careful in using words with multiple meanings when talking to lip reading deaf students.

Supportive Instructional Materials:

Flash cards
Pins
Paper
Overhead transparencies with component name and symbol

COMMON CLUSTER TASKS

TASK: Interpret information from elevation drawings

Code: CON - CT12

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. locate and interpret the scale of an elevation drawing. 2. sketch the elevation symbol for each of the following elevation components: a. roof pitch triangle b. wood 1) siding 2) panel c. brick d. stone e. concrete f. concrete block g. plaster h. flashing i. tile wall 3. determine the following information from a given elevation drawing: a. floor levels/heights b. grade lines c. window and door heights d. roof slopes e. identification of roofing materials f. identification of siding (exterior finish) materials g. foundation/footing lines	• Students participate in small group discussion to identify specific information on an elevation transparency. • Students review illustrated text materials. • Teacher develops activity/quiz worksheet on reading of elevation drawings. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 6,9 NUMBERS B 4a, 5 APPLICATION C 6 PHYSICAL D 1a, 2a	Modern Carpentry, Unit 5	13	22
	Blueprint Reading	13	

COMMON CLUSTER TASKS

Code: CON - CT12 TASK: Interpret information from elevation drawings

Basic Information for Cooperative Teaching

Language of the Task

Scale
Legend
Section
Elevations
Recognize symbols of the following components:
- door
- window
- plumbing fixture
- fireplace
- brick
- stone
- concrete
- concrete block
- flashing
- insulation

Roof pitch
Grade
Fill
Basement
First floor
Living room
Dining room
Kitchen
Front
Right side
Left side
Rear
Garage
Bedroom
Bathroom
Closet
Dinette
Storage
Foyer
Family room
Laundry room
Porch
Hall
Stairs

Quantitative Concepts

Idea of scale in actual application, i.e. 1 inch (on a model or drawing = 1 foot (on a real object).

Primary architectural scale:
1/4" = 1' 0"
i.e. 1/4" on the drawing equals one foot on the building.

Other common architectural scales:
1/8" = 1'0" (plot plan)
1/2" = 1'0" (detail and section drawings)
3/4" = 1'0" (section drawings)

Suggestions:

- On flash cards students can associate plan symbols and meanings.
- Given a room designation, select appropriate symbols, i.e. bath needs (plumbing, door, window - not fireplace).
- Students choose to design a room drawn to scale.
- Students participate in designing and coordinating a full house plan.
- Students measure their own classroom and then draw it at the chalkboard or on paper at 1/4" = 1' scale, 1/2" = 1' scale, and 3/4" = 1' scale.
- Be careful in using words with multiple meanings when talking to lip reading deaf students.

Supportive Instructional Materials:

Flash cards
Pins
Paper
Overhead transparencies with component name and symbol

COMMON CLUSTER TASKS

TASK: Interpret information from detail drawings

Code: CON - CT13

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. locate and interpret the scale of a given detail drawing.

2. sketch the common detail symbols for each of the following:
   a. wood
      1) framing
      2) finish
   b. brick
   c. stone
   d. concrete
   e. concrete block
   f. earth
   g. glass
   h. ilsulation
   i. tile
   j. plaster.

3. locate and determine the following information from a given detail drawing:
   a. dimensions and construction of fireplace
   b. dimensions and construction of kitchen cabinets
   c. door and window frame design
   d. dimensions and construction of stair risers

Instructional Methods

- Teacher uses simplified, small prints for class review and discussion.
- Teacher develops activity/quiz worksheet on identification of detail symbols.
- Students review illustrated text materials.
- Teacher makes contact with each student during the class period.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 6,9	Modern Carpentry, Unit 5	13	22
NUMBERS B 4a, 5	Blueprint Reading	13	
APPLICATION C 6			
PHYSICAL D 1a, 2a			

COMMON CLUSTER TASKS

Code: CON - CT13 **TASK:** Interpret information from detail drawings

Basic Information for Cooperative Teaching

Language of the Task

Scale
Legend
Section
Elevations
Recognize symbols of the following components:
- door
- window
- plumbing fixture
- fireplace
- brick
- stone
- concrete
- concrete block
- flashing
- insulation

Roof pitch
Grade
Fill
Basement
First floor
Living room
Dining room
Kitchen
Front
Right side
Left side
Rear
Garage
Bedroom
Bathroom
Closet
Dinette
Storage
Foyer
Family room
Laundry room
Porch
Hall
Stairs

Quantitative Concepts

Idea of scale in actual application, i.e. 1 inch (on a model or drawing = 1 foot (on a real object).

Primary architectural scale:
1/4" = 1'0"
i.e. 1/4" on the drawing equals one foot on the building.

Other common architectural scales:
1/8" = 1'0" (plot plan)
1/2" = 1'0" (detail and section drawings)
3/4" = 1'0" (section drawings)

Suggestions:

- On flash cards students can associate plan symbols and meanings.
- Given a room designation, select appropriate symbols, i.e. bath needs (plumbing, door, window - not fireplace).
- Students choose to design a room drawn to scale.
- Students participate in designing and coordinating a full house plan.
- Students measure their own classroom and then draw it at the chalkboard or on paper at 1/4" = 1' scale, 1/2" = 1'scale, and 3/4" = 1' scale.
- Be careful in using words with multiple meanings when talking to lip reading deaf students.

Supportive Instructional Materials:

Flash cards
Pins
Paper
Overhead transparencies with component name and symbol

COMMON CLUSTER TASKS

TASK: Interpret information from section drawings

Code: CON- CT14

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. locate and interpret the scale of a given section drawing.

2. sketch the detail symbol for:
   a. wood
   b. brick
   c. stone
   d. concrete
   e. concrete block
   f. earth
   g. glass
   h. insulation
   i. tile
   j. plaster.

3. locate and determine the following information from a specific section drawing:
   a. sizes of framing lumber
   b. design of sill and cornice
   c. types of material for:
      1) sheathing
      2) wall surfaces
      3) location of insulation.
   d. door frames
   e. window frames.

Instructional Methods

- Teacher leads discussion on interpreting detail drawings using transparencies.
- Students review illustrated text materials.
- Teacher develops activity/quiz worksheet on identification or sketching of detail plan symbols.
- Teacher encourages small peer group cooperation and interaction.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 6,9	Modern Carpentry, Unit 5	13	22
NUMBERS	Blueprint Reading	13	
B 4a, 5	"Sectioning" (series 9)	12	32
APPLICATION C 6			
PHYSICAL D 1a, 2a			

COMMON CLUSTER TASKS

Code: CON - CT14 TASK: Interpret information from section drawings

Basic Information for Cooperative Teaching

Language of the Task

Scale
Legend
Section
Elevations
Recognize symbols of the following components:
- door
- window
- plumbing fixture
- fireplace
- brick
- stone
- concrete
- concrete block
- flashing
- insulation

Roof pitch
Grade
Fill
Basement
First floor
Living room
Dining room
Kitchen
Front
Right side
Left side
Rear
Garage
Bedroom
Bathroom
Closet
Dinette
Storage
Foyer
Family room
Laundry room
Porch
Hall
Stairs

Quantitative Concepts

Idea of scale in actunl application, i.e. 1 inch (on a model or drawing = 1 foot (on a real object).

Primary architectural scale:
1/4" = 1'0"
i.e. 1/4" on the drawing equals one foot on the building.

Other common architectural scales:
1/8" = 1'0" (plot plan)
1/2" = 1'0" (detail and section drawings)
3/4" = 1'0" (section drawings)

Suggestions:

- On flash cards students can associate plan symbols and meanings.
- Given a room designation, select appropriate symbols, i.e. bath needs (plumbing, door, window - not fireplace).
- Students choose to design a room drawn to scale.
- Students participate in designing and coordinating a full house plan.
- Students measure their own classroom and then draw it at the chalkboard or on paper at 1/4" = 1' scale, 1/2" = 1' scale, and 3/4" = 1' scale.
- Be careful in using words with multiple meanings when talking to lip reading deaf students.

Supportive Instructional Materials:

Flash cards
Pins
Paper
Overhead transparencies with component name and symbol

COMMON CLUSTER TASKS

TASK: Interpret information from building specifications

Code: CON- CT15

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will 1. identify specific information from building specifications regarding: a. electrical work b. grading/excavating c. masonry/concrete work d. sheetmetal work e. millwork and finish carpentry f. plumbing g. landscaping h. heating and air conditioning i. painting and finishing j. lathe and plaster or drywall k. rough carpentry/roofing l. room finishes m. tile work n. insulation, caulking, and glazing.	• Teacher discusses overall importance and continued reference use of specifications during actual construction. • Students in small groups pick out a blueprint for a small home and develop a complete set of specifications. • Students review illustrated text materials and actual specification forms. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 6,9 NUMBERS B 4a, 5 APPLICATION C 6 PHYSICAL D 1a, 2a	Building specification forms	14	
	Modern Carpentry, Unit 5	13	22

COMMON CLUSTER TASKS

Code: CON - CT15 TASK: Interpret information from building specifications

Basic Information for Cooperative Teaching

Language of the Task

Scale
Legend
Section
Elevations
Recognize symbols of the following components:
- door
- window
- plumbing fixture
- fireplace
- brick
- stone
- concrete
- concrete block
- flashing
- insulation

Roof pitch
Grade
Fill
Basement
First floor
Living room
Dining room
Kitchen
Front
Right side
Left side
Rear
Garage
Bedroom
Bathroom
Closet
Dinette
Storage
Foyer
Family room
Laundry room
Porch
Hall
Stairs

Quantitative Concepts

Idea of scale in actual application, i.e. 1 inch (on a model or drawing = 1 foot (on a real object).

Primary architectural scale: 1/4" = 1'
i.e 1/4" on the drawing equals one foot on the building.

Other common architectural scales:
1/8" = 1'0" (plot plan)
1/2" = 1'0" (detail and section drawings)
3/4" = 1'0" (section drawings)

Suggestions:

- On flash cards students can associate plan symbols and meanings.
- Given a room designation, select appropriate symbols, i.e. bath needs (plumbing, door, window, - not fireplace).
- Students choose to design a room drawn to scale.
- Students participate in designing and coordinating a full house plan.
- Students measure their own classroom and then draw it at the chalkboard or on paper at 1/4" = 1' scale, 1/2" = 1' scale, and 3/4" = 1' scale.
- Be careful in using words with multiple meanings when talking to lip reading deaf students.

Supportive Instructional Materials:

Flash cards
Pins
Paper
Overhead transparencies with component name and symbol

COMMON CLUSTER TASKS

TASK: Install cabinet hardware

Code: CON - CT16

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify the different types of cabinet hardware:
   a. knobs
   b. pulls
   c. decorative fittings
   d. catches
      1) rubber rollers
      2) ball or bullet
      3) friction
      4) magnetic.

2. determine specific characteristics for selection:
   a. size
   b. style
   c. material
   d. finish.

3. demonstrate the procedures/techniques for installing finish cabinet hardware:
   a. layout attachment holes
   b. drill attachment holes
   c. attach with a screw through back of door
   d. other fastening procedures and techniques.

Instructional Methods

- Students prepare a display board showing different sizes and styles of cabinet hardware.
- Students view film and illustrated text materials.
- Teacher encourages small peer group cooperation and interaction.
- Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3	Modern Carpentry	13	22
	How to Build Cabinets for a Modern Kitchen	13	5
NUMBERS B 2,4a,i, 5	Cabinetmaking and Millwork	13	22
APPLICATION C 2,5	"Cabinetmaking"	8	11
PHYSICAL D 1a,b,c,d,f 2b 3e,f,g			

COMMON CLUSTER TASKS

Code: CON - CT16 TASK: Install cabinet hardware

Basic Information for Cooperative Teaching

Language of the Task

Knobs

Pulls

Metal fittings

Hinges

Catches

Drilling jig

Bits

Quantitative Concepts

Identify the center line of an object.

Check for horizontal, vertical, level.

Locate the center of a drawer facing which measures 4"x11 1/2".

Suggestions:

- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.
- Emphasize that hardware installation represents the "finishing touch" on cabinet work and extreme attention should be given to avoid scratches, nicks, or dents.

Supportive Instructional Materials:

COMMON CLUSTER TASKS

TASK: Operate power machine tools

Code: CON- CT17

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name specific power machine tools: a. radial saw b. table saw c. jointer d. power miter box. 2. recognize and observe specific safety precautions for operating power machine tools. 3. use and operate power machine tools following prescribed procedures. 4. identify and demonstrate the proper non-operating condition for each power machine tool.	• Students in small groups view filmstrips on operation and safety of power machine tools. • Teacher provides demonstration on use and operation of each machine. • Students take an oral quiz on operation of each machine. • Students receive an operator's license card and are certified to operate specific machines upon passing an operation/safety quiz. Note: This task is performed as a part of several succeeding tasks.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3,4,7,9	Modern Carpentry, Chapter 2	13	22
NUMBERS	"Jointer"	12	
B 4a,e	"Radial Arm Saw"	12	13
APPLICATION C 5,8	"Care and Use of Table Saw"	10	32
PHYSICAL D 1a,b,d 2b 3c,g			

COMMON CLUSTER TASKS

Code: CON - CT17 TASK: Operate power machine tools

Basic Information for Cooperative Teaching

Language of the Task

Table saw

Radial arm saw

Jointer

Band saw

Panel saw

Power miter box

Belt disk sander

Push sticks

Fence

Quantitative Concepts

Saw blade sizes 8" - 12"

Drill bit sizes 1/16" - 1/2"

Measure and mark pieces of material to be cut.

Discuss the word tolerance. "Amount of Allowable Error" i.e. rough construction may require plus or minus 1/8" accuracy.

Ask residential construction instructor for examples.

Suggestions:

- Students must develop sensitivity to safe use of tools and machines.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.
- Stress the importance of being alert and respectful of others.

Supportive Instructional Materials:

Catalogues, charts, Stanley 16mm films, and film loops

COMMON CLUSTER TASKS

TASK: Recognize common lumber sizes and defects

Code: CON - CT18

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. recognize the basic purposes for eliminating or minimizing the use or defective lumber. 2. identify the common dimension lumber thicknesses, widths, and lengths of construction lumber. 3. identify the following defects in selected lumber: a. bow/warp b. crook c. twist d. cup e. spike knot f. intergrown knots g. encased knots h. splits and checks i. decay.	• Teacher develops "hands-on" activity/quiz for class members to find examples of each lumber defect. • Students review illustrated text materials as a reference in checking lumber materials for defects and sizing. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,9			
	Modern Carpentry, Unit 4	13	22
NUMBERS B 2, 4a	First Book of Lumber	13	19
APPLICATION C 2,8			
PHYSICAL D 1a			

COMMON CLUSTER TASKS

Code: CON - CT18 TASK: Recognize common lumber sizes and defects

Basic Information for Cooperative Teaching

Language of the Task

Plywood
Dimension lumber
Trim
Particle board
Underlayment
Sheeting
Celotex
Fiberboard
Masonite
Asphalt tiles
and shingles
Stripping
Undercourse
Finished
Kilns
Millwork
Moisture content
Green lumber
Lumber defects:
knots: spike, intergrown, incased
pin knots: small, medium, large
splits and checks
shakes
pitch pockets
honey combing
wane
decay
warp

Quantitative Concepts

Dimension lumber
Ex: 2'x4"x12'
thickness is 2 inches
width is 4 inches
length is 12 feet

Note: 2"x4"x12' represents rough size. finish size is 1 1/2"x 3 1/2"x 12'

Sheet material measures 4'x8'. Thicknesses range from 3/16" to 5/4 (1 1/4)"

Suggestions:

- Describe the processes from cutting the tree, sawing logs, drying the lumber, to buying finished lumber.
- Be careful in using words with multiple meanings when talking to lip reading deaf students. (knot, trim, sheeting, green lumber)
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.

Supportive Instructional Materials:

Request scraps from vocational education instructor or lumber companies

COMMON CLUSTER TASKS

TASK: Identify characteristics/applications of plywood materials

Code: CON - CT19

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. visually identify plywood grades: a. hardwood b. softwood. 2. read and interpret a plywood identification index. 3. name the common sheet sizes and nominal thicknesses of available plywoods. 4. identify the following characteristics for a given sheet of plywood: a. size b. exterior c. interior d. plys e. face f. grade g. thicknesses 5. list the different applications for plywood in the building industry.	• Class takes field trip to building site to view applications or uses of plywood. • Teacher develops "hands-on" activity/quiz for students to identify characteristics of a given sheet of plywood. • Teacher provides demonstration on identification process. • Students view filmstrip. • Teacher encourages small peer group cooperation and interaction.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 5,9 NUMBERS B 1 APPLICATION C 3,8 PHYSICAL D 1a, 2a/b	Modern Carpentry, Page 61	13	22
	"Lumber Grades and Measurement"	12	13
	"Plywood Industry"	10	54

COMMON CLUSTER TASKS

Code: CON - CT19 TASK: Identify characteristics/applications of plywood materials

Basic Information for Cooperative Teaching

Language of the Task

Interior
Exterior
Grades
  A-A (best)
  D-D (poorest)
  A-C (common)
Thickness
Veneer
Core
Pre-finished
Paneling
Tongue-in-groove
Oversize
Beams
Subfloor
Stair treads
Walls
Roof
Sheeting
Underlayment
Shelving
Doors
Laminated
Glue
Contact cement
Adhesive
Cross grain

Quantitative Concepts

Thickness - 3/4"
  laminated - 3/4"

Nailing - nails spaced 4" apart
  - nailed both sides of seam
  - 6-8" into joists or studs

Interpret the chart on the plywood.
  (i.e. 24/0 - suggested distance between studs in roof and sub-floor applications)

Suggestions:

- Discuss reasoning behind odd number of plys in plywood.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.
- Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

Modern Carpentry, Chapter 4
American Plywood Association information

COMMON CLUSTER TASKS

TASK: Assist in pouring sidewalks and drives

Code: CON - CT20

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify the common slab thicknesses for:
   a. driveways
   b. sidewalks.
2. select and manipulate tools for finishing sidewalks and drives:
   a. float
   b. edging tool
   c. bristle broom
   d. screed
   e. strike board.
3. describe the purpose of expansion joints for drives and sidewalks.
4. perform the following job skills:
   a. set forms with 1/4" per foot slope
   b. cut expansion joints
   c. pour and screed wet concrete
   d. add reinforcement mesh to driveway slabs
   e. finish concrete for texture and traction.

Instructional Methods

- Students simulate sidewalk construction in lab - mixing and pouring a reinforced slab with expansion joints.
- Students review illustrated text materials.
- Teacher designs experiment for class members to prepare different concrete mixtures and test their respective strengths.
- Class visits a building site to see a sidewalk or drive being poured.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 6,9 NUMBERS B 2b, 4a APPLICATION C 5 PHYSICAL D 1a,d 2c 3a,c,d,f,g	Modern Carpentry, Unit 6	13	22

COMMON CLUSTER TASKS

Code: CON - CT20 TASK: Assist in pouring sidewalks and drives

Basic Information for Cooperative Teaching

Language of the Task

Slab

Float

Tamper

Screed

Edger

Slope

Expansion joints

Mesh

Concrete

Broom

Strike board

Quantitative Concepts

Recognize the ratio of 3:1 (concrete to aggregate).

Cubic yard of materials:
sand, gravel, weights 1 1/2 ton

Determine the cost of 5 yards of ready mix concrete at $20.00/yd.

Compute the amount of concrete needed for a specific driveway, i.e. 6" thick x 6' wide x 18' long would require 1 cubic yard of concrete.
.5'x6'x19' = 27 cu. ft.= 1 cu. yd.

Measure for sidewalk cracks and expansion joints.

Suggestions:

- Visit a site where a sidewalk/driveway is being poured.
- Drill deaf student extensively on language of the task.
- Stress the importance of wearing boots, gloves, safety glasses. If cement gets on the skin it may be very painful if not washed off immediately.

Supportive Instructional Materials:

COMMON CLUSTER TASKS

TASK: Assist in installing weeping tile and waterproofing

Code: CON - CT21

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. describe the basic purpose of waterproofing foundations.

2. perform the following job skills in waterproofing block walls:
   a. clean and dampen wall surface
   b. mix plaster of cement and sand in proportions of 1" to 2 1/2"
   c. apply first coat of mortar
   d. when partially hardened, roughen with scratcher
   e. allow to harden 24 hours
   f. dampen surface
   g. apply second plaster coat
   h. form cove of plaster on top of footing
   i. add coat of asphalt waterproofing or hot bituminous coating if desired

3. waterproof poured walls by applying a bituminous coating.

4. describe the basic purpose of installing drain tile.

5. perform the following job skills for installing drain tile:
   a. place drain tile next to footings 1/4" apart
   b. lay on slope of 1" per 20'
   c. cover tile joints with tar paper
   d. cover tile with 6"-8" course gravel

Instructional Methods

- Students develop a scale cut-away model (1"=1'0") of a foundation - paint on waterproofing and glue in drain tile and aggregate.
- Teacher discusses and describes the process and purpose of installing weeping tile and waterproofing a foundation wall.
- Teacher makes contact with each student during the class period.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 7,9 NUMBERS B 2b, 4a,5,6 APPLICATION C 5 PHYSICAL D 1a,d,e 2c 3 -	Modern Carpentry	13	22
	"Footings and Foundations"	12	29

COMMON CLUSTER TASKS

Code: CON - CT21 TASK: Assist in installing weeping tile and waterproofing

Basic Information for Cooperative Teaching

Language of the Task	Quantitative Concepts
Coarse gravel Crushed stone Weeping tile Excavation Slope Trench T shape Right angles Outlet Courses Seep Wooden float Metal float Trowel Tamping	Six (6) shovels of pea gravel = 1 cubic foot or 12'x12'x12'. Twenty-seven (27) cubic feet = 1 cubic yard Determine the number of 5 gal. containers of waterproofing needed to cover a wall.

Suggestions:

- Visit job site.
- Stress the importance of keeping the waterproofing off clothing and skin.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Be careful in using words with multiple meanings when talking to lip reading deaf students.
- Be careful in using words with multiple meanings when talking to lip reading deaf students.

Supportive Instructional Materials:

1 bag cement
Sand and gravel (aggregates)
2x4 for footing forms
2x4 stakes for braces
[illegible]vel
Trowel (finishing)
Float
Edgers
Rake
Drain tiles
Pea gravel

COMMON CLUSTER TASKS

TASK: Finish unfinished cabinet facings

Code: CON - CT22

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. visually identify common cabinet woods, veneers, and laminates. 2. identify and describe the application of common cabinet finishes: a. stains b. waxes c. oils d. others. 3. prepare and apply specific finish for a given cabinet wood. 4. demonstrate different methods of applying finishes: a. spray b. brush c. other. 5. determine the required drying time for specific finishes.	• Students cut and collect samples of cabinet woods. Experiment with different finishes on each. Analyze results. • Students review booklets. • Teacher concentrates his effort with students having difficulty. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3,7,9 NUMBERS B 2, 4a,i APPLICATION C 2,5,8 PHYSICAL D 1a,b,d,f 2c 3 -	"Finishing Wood" (booklet)	13	15

COMMON CLUSTER TASKS

Code: CON - CT22 TASK: Finish unfinished cabinet facings

Basic Information for Cooperative Teaching

Language of the Task

Facing strips

Front

Basic frame

Framework
- face plate
- face frame

Stiles
- vertical

Rails
- horizontal

Facing stock

Plumb

Adjacent

Lip

Lap joints

Dowel joints

Quantitative Concepts

Recognize and understand the following as applied to a cabinet frame:
- horizontal
- vertical
- plumb

Suggestions:

- Ask the vocational instructor or a supplier for mock-ups of unfinished cabinet facings.
- Discuss the importance of plumbing walls.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

Plumb line, plumb bob
Labeled pictures or mock-ups showing cabinet facings

COMMON CLUSTER TASKS

TASK: Finish counter tops

Code: CON - CT23

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify different counter top finish materials:
   a. plastic laminate (formica)
   b. others.

2. demonstrate the procedures/techniques for cutting and applying plastic laminates:
   a. cut materials to rough oversize using a handsaw, tablesaw, portable saw, or portable router
   b. apply contact band adhesive to both joining surfaces with a spreader, roller or brush
   c. allow adhesive coats to dry
   d. position surfaces to be jointed
   e. use a hand roller to apply momentary pressure over laminate
   f. trim and smooth edges of laminate with a plane, file, or electric router
   g. make cutouts (for sinks, etc.) if needed, with saber saw
   h. perform final edge smoothing and rounding with 400 wet-or-dry abrasive paper.

Instructional Methods

- Teacher provides demonstration of procedures/techniques for installing formica tops.
- Students practice installation procedures by cutting and attaching lumber yard samples to a piece of plywood.
- Teacher encourages small peer group cooperation and interaction.
- Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3,7,9 NUMBERS B 2, 4a,i APPLICATION C 2,5,8 PHYSICAL D 1a,b,d,f 2c 3	Counter top samples (from local supplier)	1	

COMMON CLUSTER TASKS

Code: CON - CT23 TASK: Finish counter tops

Basic Information for Cooperative Teaching

Language of the Task

High pressure laminate

Plastic laminate

Surface

Bonded

Plywood

Smooth

Dimensionally table

Contact cement

Coarse grain texture

Moisture penetration

Oversize

Glossy

Beveled

Quantitative Concepts

Common laminates are 1/16" thick.

Contact cement covers approximately 300 sq. ft. per gallon. Compute the number of quarts needed for a job which you design.

Suggestions:

- Discuss the types of abuses which will not hurt the standard counter top.
- Be aware of manufacturer's directions.
- Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

COMMON CLUSTER TASKS

TASK: Install factory-built cabinets

Code: CON - CT24

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify the availability forms of cabinets: a. disassembled b. assembled (unfinished) c. assembled (finished) 2. interpret the manufacturer's directions and specifications for installation/ assembly: a. installing shims and blocking to prevent rocking b. attaching with screws through hanging strips into studs c. attaching with toggle bolts to floor or wall d. fastening units together with bolts and T-nuts e. checking level and plumb of installed cabinet.	• Students build and set mock-up (scale size) cabinets. • Class visits job site during cabinet setting phase of construction to observe processes and procedures. • Students review illustrated text materials. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3,9 NUMBERS B 2,4a,i, 5 APPLICATION C 3,6 PHYSICAL D 1a,b,d 2d 3c,e,f,g	Modern Carpentry	13	22

COMMON CLUSTER TASKS

Code: CON - CT24 TASK: Install factory-built cabinets

Basic Information for Cooperative Teaching

Language of the Task

Mass produced

Disassembled/assembled

Standard unit

Custom built

Factory built

Shims

Blocking

Stud framing

Toggle bolts

T-nuts

Aligned

Quantitative Concepts

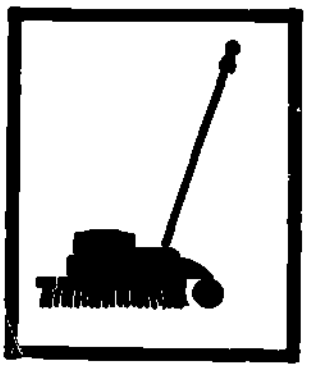
List several standard sizes of factory built cabinets from a supplier's catalog.

Suggestions:

- Interpret manufacturer's instructions for installation.
- Informally encourage voluntary buddy system for assisting deaf students (individualize without calling attention to the individual).
- Discuss the importance of plumb and level to cabinet setting.

Supportive Instructional Materials:

BUILDING MAINTENANCE/SERVICE



INSTRUCTIONAL TASK MODULES

BM01 Brush sweep floor areas

BM02 Clean stairwells

BM03 Mop sweep floors

BM04 Wet mop floors

BM05 Operate an automatic floor machine

BM06 Strip a floor

BM07 Seal a floor

BM08 Apply floor finish

BM09 Wash painted surfaces

BM10 Clean wall paper

BM11 Wash wainscoted ceramic surfaces

BM12 Wash walls and ceilings by hand

BM13 Wash walls and ceilings by machine

BM14 Wash and clean venetian blinds

BM15 Clean and disinfect restroom equipment

BM16 Disinfect restroom floors

BM17 Clean and polish mirrors, windows, and glass

BM18 Wash and polish metal, wooden and upholstered furniture

BM19 Clean light fixtures

BM20 Clean rugs and carpets

BM21 Wash windows

BM22 Clean metal surfaces

BM23 Perform dusting

BM24 Store maintenance supplies and equipment

BM25 Schedule maintenance activities

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

TASK: Brush sweep floor areas

Code: CON - BM01

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment needed for sweeping floor areas: a. floor brush b. dust pan c. counter brush d. putty knife e. waste container. 2. demonstrate the proper techniques for holding and sweeping with a broom. 3. demonstrate the proper procedure for sweeping floor areas. 4. remove gum and heavy accumulations from floor with putty knife. 5. pick up sweepings.	• Students learn the names of the equipment from an illustrated set of flash cards. Flash cards with pictures and names of each piece of equipment. Gradually remove name cues. • Students work with the building custodians in sweeping assigned areas during each period. • Teacher encourages small peer group cooperation and interaction.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 6,9	Floor Maintenance	13	
NUMBERS	Floors and Floor Maintenance	13	
B	flash cards, teacher-made		
APPLICATION	"School Custodial Service" (charts)	16	
C 5,8			
PHYSICAL			
D 1a,d,e 2b 3a,c,f,g			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM01 **TASK:** Brush sweep floor areas

Basic Information for Cooperative Teaching

Language of the Task

Hard floors
- terrazzo
- marble
- concrete

Sweep

Waste receptacle/trash can

Brush
- floor
- counter

Dust pan

Area

Soil

Bristles

Putty knife

Quantitative Concepts

Convert inches to feet

Recognize 6'x6' as feet
6"x6" as inches

Suggestions:

- Physical requirements:
  stand up straight
  grip, bend over from hips
  step out and extend arms
  straight ahead.
- Collect samples of different types of floors.
- Make and use "flash card" floor samples.
- This task may be particularly appropriate for deaf student.
- Teacher and deaf student should co-operatively develop some simple signs related to language of the task.

Supportive Instructional Materials:

"Twister" game - teacher made, combining word recognition with concepts and motor skills

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

TASK: Clean stairwells

Sheet 1 of 1

Code: CON - BM02

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the proper equipment for cleaning stairwells: a. warehouse broom (corn broom,dry mop) b. dust pan c. counter brush d. waste container e. treated dust cloth f. putty knife g. portable vacuum cleaner h. disinfectant solution i. detergent/disinfectant solution j. two mop pails k. wringer l. wet mop m. "wet floor"signs. 2. brush sweep stairways from top to bottom. 3. wipe down guard and hand rails and door knobs. 4. vacuum clean stairwells, wainscoating, and guard rails. 5. prepare disinfectant solution for mopping stairway. 6. mop down stairwells. 7. place "wet floor" signs at top and bottom of stairwell.	• Teacher carefully illustrates and/or demonstrates techniques for: 1. Identifying different types of stairs (i.e. open wall, both walls closed) 2. Sweep width of stairs, stairs with middle rails or end rails 3. Starting to sweep stairs considering the type of stairwell 4. Using the proper broom or hand vacuum in corners of stairs. • Students discuss and practice techniques for: 1. Folding dust cloth properly 2. Dusting above windows or landings 3. Traveling up one side of stairs to dust, then dusting down the other side 4. Cleaning stairs with dust mop, then scrub down stairs and risers.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,3,9 NUMBERS B APPLICATION C 5,6,8 PHYSICAL D 1a,e, 2b, 3a,b,c,f,g	Cleaning Supplies and Equipment	1	

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM02 **TASK:** Clean stairwells

Basic Information for Cooperative Teaching

Language of the Task

Stairs

Risers

Railing/bannister

Landing

Treads

Molding

Wipe

Width

Steps

Floor brush

Dry mop

Stroke

Terrazzo

Wood

Concrete

Quantitative Concepts

Measure width of stairs using ruler.

Measure height of riser between steps and width of step (tread).

Suggestions:

- Physical requirements:
  travel up and down stairs
  slide feet together across step starting at top
  back down stairs using stair hand rail
  use rag in one hand and another rag in other hand.
- Have students practice cleaning as they go up and down mock stairs with removable sides and rails.
- This task may be particularly appropriate for deaf student.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Mop sweep floors

Code: CON - BM03

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment needed to mop sweep a floor: a. dust treated sweeping mop b. dust pan c. counter brush d. floor brush e. waste container f. putty knife g. receptacle. 2. treat a sweeping mop with a mop treatment. 3. treat a dusting mop by water-based impregnation and oil based impregnation. 4. follow a prescribed procedure in mop sweeping: a. room floors b. corridors.	• Teacher demonstrates and illustrates: 1. Swinging in a figure "8" motion 2. Carrying, handling, and treating a dust mop 3. Sweeping around chairlegs without touching 4. Sliding dust back and forth across front of feet 5. Identifying types of floors 6. Discussing harm of solvents on soft floor (lighter fluid) 7. Spreading feet to width of shoulders. • Teacher concentrates his effort with students having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 6,7,9 **NUMBERS** **APPLICATION** C 8 **PHYSICAL** D 1a,e, 2b, 3a,c,g	Cleaning Supplies and Equipment	1	

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON- BM03 **TASK:** Mop sweep floors

Basic Information for Cooperative Teaching

Language of the Task

Sweep

Treated dry mop

Horizontal

Dispose

Soft floors
- vinyl tile
- rubber tile
- asphalt tile

Swing

Block

Stance

Stroke

High/low

Corridor

Hallway

Quantitative Concepts

Determine linear footage of a given wall.

Recognize common mop sizes:
18", 36", 60"

Suggestions:

- Physical requirements:
  draw a figure 8 ∞
  move arms in figure 8 pattern
  back-up mopping in a figure 8 pattern.

Supportive Instructional Materials:

Yard stick
"Twister" game

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Wet mop floors

Code: CON - BM04

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. select the equipment needed in wet mopping floors:
   a. 2 mop pails on casters
   b. 1 wet mop (2) mops
   c. putty knife
   d. waste container
   e. dust pan
   f. cleaning cloths or sponges
   g. detergent or detergent/disinfectant
   h. "wet floor" signs
   i. wringers.
2. prepare detergent or detergent/disinfectant solution according to manufacturer's directions.
3. locate wet floor signs at both ends of area to be mopped.
4. follow prescribed procedures and techniques in mopping floor areas.
5. rinse and clean mop heads and equipment.
6. store equipment.

Instructional Methods

- Teacher frequently demonstrates and/or illustrates:
  1. Swinging mop from side to side - 2 1/2' to 3 1/2' on either side
  2. Traveling along floor molding 10' across and 10' down
  3. Mixing soap solution (students place hands in water to determine slickness)
  4. Cleaning molding by hand or machine, be aware of harm done by splashing molding
  5. Picking up water by mopping or by machine
  6. Using a floor squeegee
  7. Discussing precautions on various floors.
- Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 6,7,9 **NUMBERS** B 4b,c, 5 **APPLICATION** C 5,6,8 **PHYSICAL** D 1a,d,e 2b 3a,b,c,g	Cleaning Supplies and Equipment	1	

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON- BM04 **TASK:** Wet mop floors

Basic Information for Cooperative Teaching

Language of the Task

Wet mop filler
Size/capacity
Wringer
Bucket
Detergent
Solution
Soak
Mop handle
Clamp
Wing nut
Crown
Gear press
Roller wringer
Squeeze wringer

Corrosive
Application
Concentrate
Dilute

Quantitative Concepts

Determine the square footage of a floor area to be mopped.

Recognize comparative sizes and capacities of buckets - gallons, pails - pints.

Teach:
one half ounce per gallon.

Pour one half ounce into a measuring cup from a bottle having the net weight of 8 oz. Pour the half ounce into a gallon of water. Observe 8 oz. bottle, determine how many times this operation could be performed.

Suggestions:

- Physical requirements:
  walk backward
  swing arms while walking backwards
  drag mop along molding.
- Using foot square shapes, measure the square footage of a small room by laying the shapes out - determining the number which will fit in the room.
- Stress importance of using proper cleanser and tool for each task.
- This task may be particularly appropriate for deaf student.

Supportive Instructional Materials:
Squares of cardboard measuring a foot square. Enough to cover a small room.

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Operate an automatic floor machine

Code: CON - BM05

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. select the equipment needed to operate a floor machine:
   a. floor machine
   b. detergent (low foam or foamless)
   c. putty knife
   d. "wet floor" signs.
2. fill solution tank of machine, following manufacturer's directions.
3. prepare machine for operation.
4. police area to be cleaned.
5. place "wet floor" signs in position.
6. clean corner areas by hand.
7. guide machine over area to be cleaned, following prescribed procedures and techniques.
8. dispose of accumulated waste, rinse, flush tank, and plug automatic machine into battery.

Instructional Methods

- Teacher simulates and/or demonstrates:
  1. Gripping machine, turning on switch, and holding machine as it runs
  2. Pushing down on handle to start and raising up on handle to stop
  3. Turning on vacuum and adjusting squeegee up or down
  4. Changing brushes and stripping pads
  5. Filling and emptying the machine.
- Teacher concentrates his effort with students having difficulty.
- Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,6,7,9 NUMBERS B 4c, 5 APPLICATION C 5,6 PHYSICAL D 1a,d,e 2c 3a,b,c,f,g	Floor machine, accessories, and cleaning materials	1	

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BMOS **TASK:** Operate an automatic floor machine

Basic Information for Cooperative Teaching

Language of the Task

Charge/recharge battery

Automatic

Scrubber

Stripper

Vacuum

Float

Tank

Switch

Handle

Operate

Solution

Quantitative Concepts

Combine liquid amounts in a 1-6 ratio (1 part concentrate to 6 parts water.

Add 1/2 pt + 1/2 pt = ?

1/2 pt. equals how many cups?

Determine the number of ounces/cup.

Suggestions:

- This task may be particularly appropriate for deaf student.
- Informally encourage voluntary buddy system for assisting deaf students (individualize without calling attention to the individual).
- Physical requirements:
  cross feet over and move to left
  cross feet back and move to right
  walk straight ahead
  back up - straight back.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 2

TASK: Strip a floor

Code: CON - BM06

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. select the equipment needed for stripping a floor:
   a. rotary floor machine
   b. stripping bloc
   c. Syndisc stripping pads
   d. liquid floor stripper
   e. waste container
   f. dust pan
   g. counter brush
   h. putty knife
   i. treated dust cloth
   j. rubbers
   k. pressure sprayer
   l. mop pail - gearpress
   m. wet mop
   n. wet vacuum pick-up.
2. mix stripping solution following manufacturer's directions.
3. sweep floor and remove all gum deposits.
4. apply stripping solution to floor area, covering 100 square feet.
5. place stripping pad on floor and center machine on pad.
6. guide the rotary floor machine over the solution area.
7. pick up the dirty stripping with wet vac.

Instructional Methods

- Teacher demonstrates and/or illustrates tagging equipment.
- Teacher organizes and students play bingo with names of equipment by filling in letters of equipment.
- Teacher organizes a game of 20 questions which students play about equipment names, uses, sizes, shapes, etc.
- Teacher encourages small peer group cooperation and interaction.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,3,7,9 NUMBERS B 2b,4a,c,5 APPLICATION C 5,6,8 PHYSICAL D 1a,d,e,f 2c 3a,c,d,e, f,g	Cleaning equipment, tools, and supplies	1	

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM06 **TASK:** Strip a floor

Basic Information for Cooperative Teaching

Language of the Task

Strip
Refinish
Stripping pad
Driving block
Floor machine
Solution
Detergent
Steel wool
Finish
Build-up
Residue
Nozzle
Swivel
Tank
Cord
Flexible hose
Rinse
Wringer mop
Put down solution
Pick up solution
Flooding
Wax stripper

Quantitative Concepts

Determine square footage of a floor area to be stripped

Convert gallons to quarts, quarts to pints, and pints to cups of solutions used in floor stripping

Pour from a large 5 gallon container a predetermined amount, i.e. qt., to a pail

Concept of pH - >< 7 =

Suggestions:

- Transfer liquid between pint, quart, and gallon size containers to explain the volume of liquid contained by each.
- Practice body movement for task.
- Physical requirements:
  push out - pull back
  step out - step back
  stoop over
  kneel down on one knee
  turn both hands to right
  turn both hands to left
  slide from side to side
  move straight back
  move straight forward.
- Be careful in using words with multiple meanings when talking to lip reading deaf students.
- This task may be particularly appropriate for deaf student.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE WORK

Sheet 2 of 2

TASK. Strip a floor

Code: CON - BM06

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 8. rinse floor again with neutralizing solution if high pH solution has been used. 9. strip corners by hand. 10. strip near molding with steel wool.	

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE			
NUMBERS			
APPLICATION			
PHYSICAL			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM06 TASK: Strip a Floor

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Seal a floor

Code: CON - BM07

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment needed to seal a floor: a. mop pail and gearpress b. clean wet mop c. water emulsion seal d. "wet floor" signs. 2. remove the sizing in a new wet mop. 3. seal floor by application of sealer with mop, following a prescribed procedure. 4. even out spots and mop out puddles of sealer. 5. apply second coat of sealer in opposite direction of first coat.	• Teacher simulates and demonstrates: 1. Laying out a 100 sq. ft. area by going along molding for 10' and across molding for 10'. 2. Applying sealer with mop and/or rollers. • Teacher discusses with students various surface seals, penetrating seals, concrete seals, terrazzo seals. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,7,9 NUMBERS B 4c, 5 APPLICATION C 5,8 PHYSICAL D 1a,d,e, 2c 3a,c,f,g	Cleaning supplies and equipment		

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SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON- BM07 **TASK:** Seal a floor

Basic Information for Cooperative Teaching

Language of the Task

- Floor seal
- Pores
- Absorbent
- Streaks
- Dampness
- Humidity
- Tacky
- Applicator
- Handle
- Mop filler
- Wringer
- Bucket
- Internally
- Undercoat
- Non-flammable

Quantitative Concepts

Estimate and/or compute square footage as it relates to floor areas.

Recognize gallons, quarts and similar sized containers.

Convert ounces to pints, quarts, and gallons.

Estimate amount of sealer needed for 900 square feet if the coverage was 1500-2000 sq. ft. per gallon.

Suggestions:

- Stress that if the directions on can designate a given amount for a given size floor, and there is either solution left over or not enough solution, an inaccurate amount has been applied.
- Assist student in improving judgment and decision making skills.
- This task may be particularly appropriate for deaf student.
- Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Apply floor finish

Code: CON - BMOS

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment for application of floor finishes: a. mop pail with gearpress b. clean wet mop c. floor finish d. "wet floor" signs. 2. remove sizing from a new mop. 3. apply floor finish with mop, following a prescribed procedure. 4. apply second coat of finish in a cross-hatched manner. 5. determine drying time required for specific finishes. 6. soak or dispose of mop.	• Students simulate as teacher demonstrates how to: 1. go along molding for 10' 2. go across molding for 10' 3. come down floor for 10' 4. apply finish with mop 5. apply finish with rollers. • Teacher encourages small peer group cooperation and interaction. • Teacher matches successful students who are interested in helping those having difficulty. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,7,9 NUMBERS B 4c,d APPLICATION C 4,5,6 PHYSICAL D 1a,d,e, 2c 3a,c,g			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON- BMOS TASK: Apply floor finish

Basic Information for Cooperative Teaching

Language of the Task

Floor finish

Floor wax

Conventional wax
plant or animal

Synthetic wax
man made

Solids

Liquid

Streaks

High-low spots

Sealer

Coats (recoat)

Thin

Protection

[illegible]ad

Build-up

Preparation

Maintenance

Luster

Polish

Quantitative Concepts

Discuss relationship of length, width, and square area.

Estimate the time needed to finish certain areas.

Discuss the relationship of temperature and humidity to drying of wax.

Wax coverage 2,000 to 2,500 sq. ft. per gallon.

Figure cost of bulk amounts if purchased in small containers.

Suggestions:

- It is important to follow a definite procedure as prescribed by the supervisor.
- Drill deaf student extensively on language of the task.
- Assist student in improving judgment and decision making skills.

Suggestive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Wash painted surfaces

Code: CON - BM09

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment needed for washing painted surfaces: a. detergent-disinfectant b. sponges or turkish towel c. two buckets d. drop cloths e. step ladder f. "wet floor" signs g. rubber gloves h. wet mop i. mop bucket - gearpress j. wall brush. 2. test surface for washability. 3. prepare detergent-disinfectant solution according to manufacturer's direction. 4. sponge wash wall surfaces following prescribed techniques and procedures. 5. rinse washed wall sections. 6. set up platform stages or step ladders safely. 7 clean and store equipment.	• Take a walking tour through a building and decide and/or discuss which painted surface needs to be painted and why and what should be washed. • Teacher encourages small peer group cooperation and interaction. • Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,7,9 **NUMBERS** B 4c,5 **APPLICATION** C 5,6 **PHYSICAL** D 1a,d,e 2c 3a,c,b			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM09 **TASK:** Wash painted surfaces

Basic Information for Cooperative Teaching

Language of the Task

- Sponge
- Pails
- Lint free cloths
- Solution
- Furniture
- Glazed walls
- Soap
- Wall paper cleaner
- Drop cloths (many kinds)

Quantitative Concepts

Combine and prepare solutions of 1 part to 6 parts.

Use measuring cups and interpret units of measure.

Determine square footage of a wall surface.

Determine linear footage of a wall surface.

Suggestions:

- Stress importance of using proper cleanser and tool for each task.
- This task may be particularly appropriate for deaf student.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf student.
- Have student use his imagination in a game,"what would happen if. . .", i.e."wet cloth hit mirror or window". Leave time for class to agree or disagree.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/ SERVICE

Sheet 1 of 1

TASK: Clean wall paper

Code: COE - 8410

Student Name: _____

Student Progress					Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable		
					Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment needed for cleaning wallpaper: a. ladder b. wall paper cleaner c. drop cloths d. cleaning cloths. 2. move furniture. 3. cover furniture. 4. remove everything from wall. 5. cover floors. 6. brush walls. 7. begin at top, work down. 8. clean a space 2'x 2'. 9. cross clean. 10. work dirt into wall cleaner. 11. brush residue from walls. 12. vacuum floor. 13. return equipment.

Instructional Methods

- Give students samples of washable paper and have them wash half the sheet with damp cloth and the other half with a soaking wet cloth and observe the effects.
- Student follows a teacher demonstration with "hands-on" supervision.
- Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 7 NUMBERS APPLICATION C 5 PHYSICAL D 1a,d,e 2b 3a,c,f,g			

SUBCLUSTER: BUILDING MAINTENANCE

Code: CON - BM10 TASK: Clean wall paper

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	
Sponge Pails Lint free cloths Solution Streak Vacuum Glazed walls Soap Wall paper cleaner Drop cloths	Combine and prepare a solution of 1 part to 6 parts. Use measuring cups and interpret units of measure. Recognize wall surface area 2'x2'/determine square footage. Measure linear footage of a classroom wall.	• This task may be particularly appropriate for deaf student. • Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students. • Working with actual measuring equipment and water will simulate this activity.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Wash wainscoted ceramic surfaces

Code: CON- BM11

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment needed for spray washing wainscoted ceramic surfaces: a. detergent-disinfectant b. two pressure sprayers c. cellulose sponge mop with long handle d. "wet floor" signs e. drop cloths f. wet mop g. mop bucket - gearpress. 2. prepare detergent or detergent/disinfectant solution according to manufacturer's directions. 3. fill separate sprayers with solution and clean water. 4. spray clean wainscoted surface with sprayer, following a prescribed procedure. 5. spray the area washed with clean water. 6. wipe down wainscoting with mop sponge. 7. rinse and clean sprayers and equipment.	• Students work with surplus pieces of tile on which common cleaning problems can be identified and solution applied. • Teacher concentrates his effort with students having difficulty. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,7,9 NUMBERS B 4c, 5 APPLICATION C 5,6 PHYSICAL D 1a,d,e 2c 3a,c,g			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON- BM11 **TASK:** Wash wainscoted ceramic surfaces

Basic Information for Cooperative Teaching

Language of the Task

Common essential vocabulary from bottles and can containers

Procure cleaning supplies from maintenance instructor and have students make a list of the words in the directions that they don't understand. Class put together a list of directive words most frequently used for vocabulary study.

Quantitative Concepts

Interpret ounces, pints, quarts, half-gallon, gallons, of cleaning solutions and agents.

Determine square footage of the area to be washed and needed amount of cleaning solution.

Suggestions:

- Be sure students are able to read common manufacturer's directions, i.e. shake well before using.
- Stress importance of using proper cleanser and tool for each task.
- This task may be particularly appropriate for deaf student.
- Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Wash walls and ceilings by hand

Code: CON - BM12

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment needed to hand wash ceilings: a. detergent-disinfectant b. sponges or turkish towels c. two buckets or pails d. drop cloths e. platform stages f. rubber gloves g. "wet floor" signs. 2. prepare detergent or detergent/disinfectant according to manufacturer's directions. 3. cover unmovable obstructions with drop cloths. 4. step up platform stage. 5. hand wash ceiling area following prescribed procedures. 6. clean overhead pipes around electrical fixtures, etc., when washing ceilings and walls. 7. rinse and clean equipment.	• Students work with building custodian performing the identified job skills. • Teacher encourages small peer group cooperation and interaction. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,7,9 NUMBERS B 4c, 5 APPLICATION C 5,6 PHYSICAL D 1a,d,e 2c 3a,b,c,g	Building Maintenance Janitor-Custodian	13 13	

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM12 **TASK:** Wash walls and ceilings by hand

Basic Information for Cooperative Teaching

Language of the Task

Pails
Natural sponges
Abrasive cleaner
Wall brush
Wall cleaner
Drop cloths
Ledges, ducts
Measure
Directions
Soaking
Loosen
Scrubbing
Washing
Dip
Solution
Rinse
Film
Surface

Quantitative Concepts

Measure liquids (water) with a measuring cup, observe number of ounces in 1/4 cup, 1/3 cup, 1/2 cup, and 1 cup.

Find area of a wall 8'x12' to determine square footage of surface.

Measure classroom, length and height of room.

Determine the number of pints in a quart, cups in a pint, quarts in a gallon by actually performing the operation using measuring utensils and water or other suitable media.

Suggestions:

- This task may be particularly appropriate for deaf student.
- Drill deaf student extensively on language of the task.
- Suggest to parents that tasks be reinforced and experienced in the home environment.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Wash walls and ceilings by machine

Code: CON - BM13

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment needed to wash walls/ceilings by machine: a. wall washing machine - trowels b. detergent/disinfectant c. stepladder or platform stage d. "wet floor" signs e. sponge, brush, cloths (drop). 2. test wall or ceiling area for washability. 3. fill cleaning tank of machine according to manufacturer's instruction. 4. fill rinse tank. 5. pressurize tanks according to manufacturer's instructions. 6. set up platform stage or stepladder and wet floor signs. 7. saturate wash and rinse pads of applicator. 8. wash surface areas with machine following a prescribed procedure. 9. rinse, clean, and store equipment.	• Teacher and/or resource person shows the student: 1. How to cover trowels with turkish towels 2. How to hold solution trowel in one hand 3. How to hold rinse trowel in other hand 4. How to keep walls wet while washing 5. How to cover furniture 6. How to measure solution 7. How to pump up pressure and release. • Student follows a teacher demonstration with "hands-on" supervision.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,4,7,9 NUMBERS B 2a, 4b,c,d APPLICATION C 5,8 PHYSICAL D 1a,d,e 2c 3a,b,c,g			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM13 **TASK:** Wash walls and ceilings by machine

Basic Information for Cooperative Teaching

Language of the Task

Mechanical
Furniture
Plastic
Pressure
Sponge
Wall washing
Measure
Trowel
Stubborn
Apply
Rub
Pail
Scrub brush
Drop cloth
Planks
Step ladder
Towels

Quantitative Concepts

Introduce pounds per square inch of pressure which corresponds to a reading of a pressure gauge, i.e. 25 pounds/sq.inch.

Measure 6'x 20' and determine square footage.

Utilize measuring cups in determining equivalent units.

Suggestions:

- Drill deaf student extensively on language of the task.
- This task may be particularly appropriate for deaf student.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Wash and clean venetian blinds

Code: CON - BM14

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment for cleaning venetian blinds: a. pressure sprayer b. garden hose with nozzle c. bristle hand brush d. sponges e. detergent/disinfectant f. portable vacuum cleaner g. buckets. 2. prepare detergent/disinfectant according to manufacturer's directions. 3. spray solution over blinds with pressure sprayer. 4. brush blinds with solution. 5. rinse with garden hose. 6. wipe both sides with sponges. 7. check tapes and cords for wear. 8. replace worn tapes. 9. vacuum clean venetian blinds in place.	• Using a small venetian blind, the teacher will let each student disassemble and then try to reassemble it. Before the student reaches the point of destructive frustration, the teacher or another student who is already capable of performing this task will help the first student complete the reassembling process.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,6,7,9 NUMBERS APPLICATION C 5,8 PHYSICAL D 1a,d 2c 3c,g			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM14 **TASK:** Wash and clean venetian blinds

Basic Information for Cooperative Teaching

Language of the Task

Venetian blinds

Tapes

Detergent

Solution

Wash

Rinse

Deposits

Film

Removal

Damp

Dirt

Damage

Quantitative Concepts

Counting 1, 2, 3, 4, 5, etc., (number of slats in a venetian blind)

How many slats = a dozen slats?

How many feet in a yard?

How many inches in a yard, in a foot?

Suggestions:

- This task may be particularly appropriate for the deaf atudent.
- Suggest to parents that taaks be reinforced and experienced in the home environment.
- Stress importance of using proper cleanser and tool for each taak.
- Use small sample blind, remove tapes, then reassemble.

Supportive Instructional Materials:

A venetian blind

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Clean and disinfect restroom equipment

Code: CON - BM15

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment needed to clean restroom equipment: a. applicator kit b. acrylian swab c. bowl cleaner and disinfectant d. aerosal disinfectant spray e. deodorant blocks f. cream cleanser g. mop buckets h. pails i. rags j. rubber gloves k. mops l. sponges m. dust pans n. putty knife o. receptacle p. towels-tissue-soap. 2. clean and disinfect a toilet bowl and seat. 3. clean and disinfect a urinal. 4. clean a washbowl. 5. free clogged drains.	• Students may view slides showing cleaning procedures then go into restrooms to consider possible cleaning procedures. • Involve students in discussion following a demonstration of cleaning procedures conducted in the restroom. • Display the necessary cleaning agents: 1. Best disinfectant soap, water and labor 2. Carbolic acid as disinfectant - chlorine sodium hypochlorite to prevent athletes foot.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,9 NUMBERS B 4c APPLICATION C 5,8 PHYSICAL D 1a,d 2b, 3g			

SUBCLUSTER: BUILDING MAINTENANCE SERVICE

Code: COS - BMS TASK: Clean and disinfect restroom equipment

Basic Information for Cooperative Teaching		Suggestions.
Language of the Task	*Quantitative Concepts*	
Urinal Swab Toilet Commode Water closet Dispenser Tissue Toweling Washbasin Partitions Traps Mirrors Chrome Bright work Disinfectant	Figure square footage area of a restroom (8'x12'). Measure liquid quantities in pints, quarts, gallons, cup, ounces. Reduce quarts to cups using liquid measuring cups. Reduce gallons to pints using liquid measuring cups. Be aware of the change to metric measurements. Check with the maintenance supervisor/teacher.	• Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students. • This task may be particularly appropriate for deaf student. • Stress importance of using proper cleanser and tool for each task. • Special attention must be paid to the safe handling of caustic cleaning materials.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Disinfect restroom floors

Code: CON - BM16

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment needed in disinfecting a restroom floor: a. detergent-disinfectant b. wet mop c. buckets and gearpress d. pressure spray e. putty knife f. door stop. 2. prepare detergent-disinfectant solution according to manufacturer's directions. 3. mop or spray down solution over complete floor area. 4. pick up dirty solution with wet mop. 5. allow floor area to dry sufficient length of time. 6. clean and store equipment properly.	• Class members get involved in identifying brand names and the uses of the cleaning product. • Teacher may wish to set this up as a game with points for successfuliy naming and stating uses of product.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,9 NUMBERS B 4b,c APPLICATION C 5,8 PHYSICAL D 1a,d 2b 3g			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM16 TASK: Disinfect restroom floors

Basic Information for Cooperative Teaching

Language of the Task

Sanitize

Spray

Solution

Disinfectant

Germicide

Toxic

Dispenser

Deodorant block

Door stop

Equipment

Quantitative Concepts

Convert pints to cups.

Suggestions:

- This task may be particularly appropriate for deaf student.
- Drill deaf student extensively on language of the task.
- This is an excellent time to improve the image of the Hospital Housekeeper/Building Service by bringing in an aide who has done a good job with dignity, stressing the relationship between a clean floor and reinfection of a patient.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Clean and polish mirrors, windows, and glass

Code: CON - B117

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced Involved Productive Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select and use cleaning and polishing tools and materials (exterior and interior): a. soft cloth b. chamois c. soft sponge d. window brushes e. poles f. squeegees g. window platform h. razor blade. 2. demonstrate the procedures/techniques for cleaning glass: a. windows (interior/exterior) b. case glass c. cupboards d. shelves e. transoms f. glass fixtures g. light bulbs h. globes i. glass of wall pictures. 3. determine the frequency of glass cleaning. 4. observe safety precautions in cleaning exterior glass surfaces.	• Students work with school building custodian performing the identified job skills. • Students review illustrated text materials. • Teacher, student, and/or resource aide shows evidence of understanding the squeegee method by demonstrating in horizontal and vertical strokes with water on a cloth. • Class to exhibit spray cleaning method in a similar manner. • Summary cleaning lecture including: 1. Kerosene - ammonia in water 2. Safety, safety belts, stepladders,, platforms.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 9 NUMBERS APPLICATION C 5,6,8 PHYSICAL D 1a,d 2a 3b,c	Building Maintenance Janitor-Custodian	13 13	

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM17 TASK: Clean and polish mirrors, windows, and glass

Basic Information for Cooperative Teaching

Language of the Task

Bulbs, light

Fixture

Polish

Window

Squeegee

Picture

Globe

Glass

Sheen

Furniture

Soak

Chamois

Detergent

Window brush

Shake

Quantitative Concepts

Students interpret bucket which is full, 3/4 full, 1/3 full, etc.

Distinguish between quarts and pints.

Figure equivalents, i.e. how many cups in 1/2 pt.

Abbreviations for liquids.

Suggestions:

- Be sure students are aware of common directions on cans, i.e. shake well before using, use in well ventilated room, etc.
- Stress importance of using proper cleanser and tools for each task.
- This task may be particularly appropriate for deaf student.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Observe the classroom and discuss some common cleaning procedures necessary for maintenance.

Supportive Instructional Materials:

Cleaning materials in containers including directions
Collection of cleaning supplies and utensils

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Wash and polish metal, wooden and upholstered furniture

Code: CON - BM18

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. select the equipment needed to clean furniture:
   a. two pails
   b. detergent solution
   c. furniture polish
   d. clean, dry cloths
   e. sponge
   f. putty knife
   g. treated dustcloth.
2. mix detergent in 1/2 pail of warm water as per manufacturer's directions.
3. cover floor with drop cloth.
4. clean furniture with wet cloth or sponge.
5. damp wipe furniture following washing.
6. wipe furniture with dry cloth.
7. lightly polish furniture using furniture polish and clean, dry cloth.

Instructional Methods

- Students prepare a display and label a variety of polishing materials.
- Teacher concentrates his effort with students having difficulty.
- Teacher makes contact with <u>each</u> student during the class period.
- Teacher encourages small peer group cooperation and interaction.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,9 NUMBERS B 4c APPLICATION C 5,9 PHYSICAL D 1a,d,f 2b 3c,g			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM18 TASK: Wash and polish metal, wooden and upholstered furniture

Basic Information for Cooperative Teaching

Language of the Task

Polish
Furniture
Plastic pail
Cloths
Solution
Sponge
Circular motion
Stubborn marks
Steel wool
Surface
Soil
Desk
Legs
Lightly
Brass
Copper
Bronze
Chromium
Aluminum
Porcelain
Nickel

Quantitative Concepts

Define: net 32 fl. oz. (1 qt)

Work with measuring cups to illustrate and practice liquid equivalents, i.e. 1/2 pint equals how many cups?

Suggestions:

- Make students aware that different color dust cloths come from different cleaning services.
- Stress importance of using proper cleaner and tool for each task.
- This task may be particularly appropriate for deaf student.
- Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

Collection of tools and supplies labeled by name and identified use

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Clean light fixtures

Code: CON - BM19

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable		

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. select the equipment needed for cleaning light fixtures:
   a. pail of warm water
   b. low foam detergent
   c. stepladder
   d. two dry cloths
   e. cellulose sponge
   f. pliers
   g. feather duster
   h. small brush
   i. starter
   j. replacement fluorescent tubes.
2. prepare detergent/water cleaning solution, following manufacturer's directions.
3. set up ladder and spread drop cloths, canvas, or plastic.
4. remove and clean globe of incondescent light fixture.
5. clean/dust incondescent light fixture.
6. remove and clean reflectors and tubes in fluorescent light fixtures.

- Resource person who is currently employed demonstrates and simulates how to:
  1. set up stepladder
  2. move ladder to be under fixture
  3. carry glove in one hand, hold on to ladder with other
  4. wash a glove
  5. replace a tube
  6. remove reflectors
  7. perform job safety
  8. choose cleaning agents.
- Teacher encourages small peer group cooperation and interaction.
- Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,9 NUMBERS APPLICATION C 5,9 PHYSICAL D 1a,c,d,e 2c 3a,b,c,g			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM19 TASK: Clean light fixtures

Basic Information for Cooperative Teaching

Language of the Task

Fluorescent

Incondescent

Reflector

Lamp

Tube

Scaffold

Ladder

Erect

Pliers

Screw driver

Bulbs

Quantitative Concepts

Figure measured lengths of fluorescent bulbs (tubes) 6'-12'.

Interpret voltage and wattage of bulbs.

Suggestions:

- Physical requirements:
  travel up ladder with one hand holding rung
  open and close ladder
  slide ladder across floor.
- This task may be particularly appropriate for deaf student.
- Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 2

TASK: Clean rugs and carpets

Code: CON - BM20

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment needed for rug cleaning: a. upright or tank type vacuum cleaner b. spotting kit c. untreated dust cloths d. treated dust cloths e. pile brush f. detergent/disinfectant g. floor machine h. measuring cup i. pails j. wet/dry vac k. shampoo. 2. dry vacuum clean rugs. 3. use "pile lifter" vacuum machine on rugs once a week. 4. clean dust bag on vacuum. 5. shampoo rug using rotary machine with automatic detergent feed. 6. comb or brush the nap of the rug uniformly. 7. allow rug to dry and vacuum. 8. clean a rug by the dry process method (powders-granules).	• A field trip to a rug cleaning service could show a student cleaning processes such as: 1. Spotting carpets using spotting brush 2. Pushing vacuum cleaner back and forth 3. Mixing solution 4. Filling tank. • Teacher and/or students could assemble samples of carpets including nylon, wool, cotton, acrylics, etc., for the students to handle, observe and on which to try out cleaning materials and methods. • Teacher demonstrates how to stroke vacuum cleaner, how to empty filter bag, and how to vacuum stairs.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 7,9 NUMBERS B 4c APPLICATION C 5,6,8 PHYSICAL D 1a,d,e 2c 3a,c,f			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM20 **TASK:** Clean rugs and carpets

Basic Information for Cooperative Teaching

Language of the Task

Carpet

Rugs

Spotting kit

Stains

Vacuum cleaner

Pile lifter

Filter bags

Wet shampoo

Dry shampoo

Broadloom

Synthetic

Conventional

Wool - cotton

Quantitative Concepts

Distinguish between pints, quarts, gallons of cleaning agents.

Figure size of carpet (in square yards) in a room 9'x12'.

Figure amounts of cleaning agents needed to clean the 9'x12' carpet.

Figure drying time in hours or minutes.

Suggestions:

- Identify types of carpet and the difference between rugs and carpets.
- This task may be particularly appropriate for deaf student.
- Assist student in improving judgment and decision making skills.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

TASK: Clean rugs and carpets

Code: CON - BM20

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	
				Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 9. identify common rug stains. 10. test rug for colorfastness. 11. spot clean rug by using either of the two types of spotters a. wet side water base b. dry side-solvent base.

Instructional Methods

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE			
NUMBERS			
APPLICATION			
PHYSICAL			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM20 **TASK:** Clean rugs and carpets

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Wash windows

Code: CON - BM21

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the equipment needed for window washing: a. glass cleaner b. squeegee c. chamois (sheep skin) d. sponge e. stepladder f. pail or bucket g. window washing ladder. 2. set up and position stepladder safely. 3. wash window with glass cleaner solution, using a sponge. 4. dry the window by using a squeegee and/or chamois. 5. clean outside surfaces of windows using a safety belt. 6. wash and clean chamois.	• Instructor or resource person demonstrates how to: 1. Use window pole and brush 2. Apply pressure to pole while removing water 3. Apply water with window brush 4. Use horizontal and vertical strokes 5. Use figure 8 motion 6. Safely handle ladders, platforms, and belts. • Teacher concentrates his effort with students having difficulty. • Teacher encourages small peer group cooperation and interaction.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE			
NUMBERS			
APPLICATION			
PHYSICAL			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM21 **TASK:** Wash windows

Basic Information for Cooperative Teaching

Language of the Task

Cloths

Edges

Steelwool

Spray cleaner

Glass

Polish

Streaks

Finger marks

Chamois (sheep skin)

Window brush

Scaffold

Putty knife

Squeegee pole

Shake

Scrape

Excess

Quantitative Concepts

Determine length and width of window.

Utilize symbols for feet ' - and for inches ".

Determine capacity of bucket by sight (16 qt., 8 gal., number of gallons).

Suggestions:

- This task may be particularly appropriate for deaf student.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Stress importance of using proper cleanser and tool for each task.
- Alert student to the need for safe, and careful workmanship.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Clean metal surfaces

Code: CON - BM22

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. wash selected metals with mild solution of detergent and warm water: a. aluminum b. stainless steel, chrome c. iron. 2. clean selected metals with aerosol cleaner and wipe lightly with untreated dust cloth; a. aluminum b. stainless steel, chrome c. unlacquered brass or bronze d. copper. 3. wash copper surfaces with mild acid cleaner followed by mild detergent bath and dry with clean untreated dust cloth. 4. remove rust buildup on iron with kerosene or solvent on a .00 steel wool pad.	• Advanced student, resource person (from on job) or instructor demonstrates: 1. How to fold cloth 2. How to handle steel wool pads. • Students have "on-hands" practice on folding of cloths and handling steel wool pads.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 7,9 NUMBERS B 4c APPLICATION C 5,8 PHYSICAL D 1a,d 2b 3c,f,g			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM22 TASK: Clean metal surfaces

Basic Information for Cooperative Teaching

Language of the Task

Dilution

Lukewarm

Scrub

Rinse

Wipe

Soft cloth

Maintain

Cleaning

Names of metals
- brass
- copper
- bronze
- aluminum
- nickel
- stainless steel

Quantitative Concepts

Figure ratios of 10 to 1 for cleaning solutions.

Measure and add 12 oz to 1 gallon of water.

Utilize units of liquid volume, i.e. ounces, pints, quarts.

Suggestions:

- Assist student in improving judgment and decision making skills.
- This task may be particularly appropriate for deaf student.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Perform dusting

Code: CON - BM23

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable		
				Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. top dust an area after selecting equipment and materials: a. treated dust cloth b. damp dust cloth c. pails d. wall brush e. feather duster f. whisk broom g. port-a-vacs. 2. follow a prescribed procedure for dusting a. bring equipment to area: b. fold cloth into squares c. begin at entrance d. use horizontal and vertical strokes e. start at top and dust down f. inspect your work.	• The vocational instructor discusses and demonstrates: 1. How to fold dust cloth 2. How to handle dust cloth - vertical and horizontal 3. What and where to dust 4. Size of handle dusters 5. Types of surfaces to be dusted.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,6,9 NUMBERS B 4a APPLICATION C 2,5 PHYSICAL D 1a,c,d,e 2b 3a,c,f,g			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON- BM23 TASK: Perform dusting

Basic Information for Cooperative Teaching

Language of the Task	Quantitative Concepts
Horizontal	Estimate 6' (feet).
Vertical	Estimate 6" (inches).
Side	Measure height of desk, chair.
Handle duster	Measure length of desk.
Feather duster	Measure width of chair.
Rags	
Desk	
Filing cabinet	
Window sills	
Telephone	
Machine stands	
Ash tray	
Pictures	
Molding	
Baseboard	

Suggestions:

- Perform up and down motion.
- This task may be particularly appropriate for deaf student.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 1 of 1

TASK: Store maintenance supplies and equipment

Code: CON - BM24

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. demonstrate the techniques for storing supplies and equipment, for: a. easy access b. minimize damage or loss c. easy inventory d. easy checkout and recording of amount used e. material handling safety. 2. care and upkeep of equipment: a. keep equipment clean b. report faulty equipment c. properly hang equipment.	• Students work with building custodian, storing maintenance equipment and supplies. • Students review illustrated text materials. • Teacher encourages small peer group cooperation and interaction.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,9	Building Maintenance	13	
NUMBERS B 2b 4a,b, 5	Janitor-Custodian	13	
APPLICATION C 3,6,7			
PHYSICAL D 1a,b,d 2b 3b,c,d,g,f			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM24 TASK: Store maintenance supplies and equipment

Basic Information for Cooperative Teaching

Language of the Task

Inventory

Safety

Supplies

Equipment

Bins

Storage

Materials

Damage

Loss

Checkout

Record

Quantitative Concepts

Relate inches and feet to space between shelves, size of bins, etc.

Relate weights of containers and contents to pounds, ounces, etc.

Relate quantities of supplies to dozens, gross, etc.

Written checkout records of supplies and materials.

Computations for inventorying supplies and equipment.

Suggestions:

- This task may be particularly appropriate for deaf student.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Stress the importance of organized storage for purposes of easy access and safety.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

TASK: Schedule maintenance activities

Code: CON - BM25

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. develop a daily maintenance sequence for the following areas:
   a. lobby (cleaning/dusting)
   b. public toilets (men's and women's)
   c. passenger elevators
   d. freight elevators
   e. offices
   f. corridors
   g. stairwells
   h. locker rooms
   i. janitorial closets
   j. sweeping
   k. wet mopping
   l. stripping
   m. damp mopping.

2. develop a weekly maintenance sequence for the following areas:
   a. lobby
   b. public toilets
   c. passenger elevators
   d. offices
   e. corridors
   f. stairwells
   g. locker rooms
   h. janitorial closets
   i. damp wiping
   j. buffing
   k. entrance glass
   l. furniture vacuumed
   m. waxing
   n. dust molding.

Instructional Methods

- Teacher encourages small peer group cooperation and interaction.
- Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 8,9			
NUMBERS B 1,2,4a,c,d, 5,6			
APPLICATION C 1a, 4,5,6, 8			
PHYSICAL D 1a, 2a			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM25 **TASK:** Schedule maintenance activities

Basic Information for Cooperative Teaching

Language of the Task

Daily

Weekly

Quarterly

Monthly

Annually

Semi-annually

Duties

Corridor

Cafeteria

Light fixtures

Interior

Exterior

Supplies

Toilets

Garbage

Abbreviations for liquid measurements

Quantitative Concepts

Figure square footage of floor areas.

Compute time as related to the maintenance plan, i.e. semi-annual, annual, etc.

Read and interpret a tape measure for measuring room sizes, etc.

Suggestions:

- This task may be particularly appropriate for deaf student.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Assist student in improving judgment and decision-making skills.
- Stress the importance of planned regular cleaning.

Supportive Instructional Materials:

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Sheet 2 of 2

TASK: Schedule maintenance activities

Code: CON - BM25

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 3. develop a monthly maintenance plan for the following areas: a. lobby b. janitorial closet c. corridors d. public toilets e. office f. stairwells g. locker rooms h. wash interior glass i. polish furniture j. damp wipe walls k. spot walls l. wash waste baskets m. dust venetian blinds. 4. develop a semi-annual or annual maintenance plan for lobby, public toilet, office, corridors, stairwell, locker room, and janitorial closet areas to include: a. ceilings b. light fixtures c. floors d. walls e. furniture thoroughly vacuumed f. strip, seal, wax all floors g. buff all floors.	

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE			
NUMBERS			
APPLICATION			
PHYSICAL			

SUBCLUSTER: BUILDING MAINTENANCE/SERVICE

Code: CON - BM25 TASK: Schedule maintenance activities

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	

Supportive Instructional Materials:

RESIDENTIAL CONSTRUCTION

INSTRUCTIONAL TASK MODULES

RC01 Handle and store building materials

RC02 Assist in laying out building lines

RC03 Assist in constructing forms for footings

RC04 Mix concrete and mortar

RC05 Lay blocks

RC06 Set posts and columns

RC07 Assist in setting girders and beams

RC08 Assist in constructing framing over girders and beams

RC09 Assist in installing sills

RC10 Assist in installing floor joists

RC11 Frame floor openings

RC12 Install bridging

RC13 Attach subflooring

RC14 Assist in framing outside wall corner posts

RC15 Assist in framing partition intersections

RC16 Follow a master stud layout

RC17 Frame rough openings

RC18 Assemble a wall section

RC19 Erect a wall section

RC20 Install partition sections

RC21 Install bracing to exterior walls

RC22 Add double top plate

RC23 Apply wall sheathing

RC24 Assist in assembling a ceiling frame

RC25 Cut and erect roof rafters

RC26 Frame-in roof openings

RC27 Assist in anchoring a roof frame

RC28 Assemble and install roof trusses

RC29 Attach roof sheathing

RC30 Install asphalt roofing materials

RC31 Assist in installing vapor barrier

RC32 Install batt and blanket insulation

RC33 Install reflective insulation

RC34 Install fill insulation

RC35 Assist in installing rigid insulation

RC36 Assist in applying or installing acoustical insulation materials

RC37 Recognize types and parts of windows

RC38 Assist in setting windows

RC39 Assist in installing door frames

RC40 Install a garage door

RC41 Assist in constructing rake and cornice sections

RC42 Install horizontal siding

RC43 Install vertical siding

RC44 Assist in installing siding systems

RC45 Install gutter systems

RC46 Prepare a brick veneer finish

RC47 Recognize interior finishing operations

RC48 Assist in applying ceiling tile

RC49 Hang interior doors

RC50 Apply interior trim

RC51 Lay interior floors

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Handle and store building materials

Code: CON - RC01

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. select the appropriate material for covering and protecting materials: a. canvas b. waterproof paper c. plastic. 2. use and install skids and spacers in stacking framing lumber and sheathing. 3. recognize and observe specific safety precautions in handling and stacking materials. 4. demonstrate the appropriate procedures for the following: a. moving materials b. stacking materials c. unloading materials d. protecting materials from exposure.	• Students organize field trip to lumber company and building materials centers to view stacking and handling. • Students view handling/stacking techniques from illustrated text materials. • Student follows a teacher demonstration with "hands-on" supervision.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 5,6,9 NUMBERS B 1,2 APPLICATION C 5,7 PHYSICAL D 1a,b,c,d,e 2d, 3	Modern Carpentry, p. 66	13	22
	"Lumber Handling and Piling"	13	4
	"Lumber for Houses"	8	17

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC01 TASK: Handle and store building materials

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	• Discuss procedures used in stacking and/or organizing materials to emphasize safety, convenience, and minimizing damage.
Stacking Level Covering plastic visqueen Skid Palette Spacing Location	Review various materials being used in the vocational class by using proper terms such as "two by four, sixteen feet long," (2x4x16) or a "four by eight sheet of half inch C-D plywood" (1/2" CD).	

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Assist in laying out building lines

Code: CON - RC02

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify and describe the basic purpose of laying out building lines. 2. assist in running a transit and leveling equipment. 3. erect batter boards. 4. suspend building lines from batter boards. 5. check squareness of building lines.	• Students layout a mock foundation on school grounds. • Students review illustrated text materials. • Students waterproof block wall of a scale model wall built in lab. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3,6,7,9 NUMBERS B 4a,i APPLICATION C 5,7 PHYSICAL D 1a,b,d,e 2b 3-	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC02 TASK: Assist in laying out building lines

Basic Information for Cooperative Teaching

Language of the Task

Wooden stakes
Out-of-square
Corner stake
Batter boards
Equal distance
Nail anchor pin
Width
Level
Length
Center
Heavy cord
Chalk line
Lot lines
Building codes
Brace
Framing square
Transit
Diagonal
Perpendicular

Quantitative Concepts

Find the center of a 2"x2" wooden stake by drawing diagonals on the end.

Determine the squareness of a room or building by measuring and comparing the diagonals (corner to corner).

Check the squareness of a room or building by use of the pythagorean theorem, relationship of 3 to 4 to 5. Three and four are the legs and five is the hypotenuse of a right triangle.

Suggestions:

- Emphasize that an out-of-square foundation can result in materials not fitting on floors, walls, ceilings, roofs, etc.
- This task can be easily simulated in a sandbox, on a tabletop, or chalkboard.
- Drill deaf student extensively on language of the task.
- Be careful in using words with multiple meanings when talking to lip reading deaf students. (anchor pin)

Supportive Instructional Materials:

Rough Carpentry & Masonry by Atkinson, McGraw-Hill, pg. 6-7

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in constructing forms for footings

Code: CON - RC03

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify different types (designs) of residential footings. 2. use a plumb bob to set corners of footing forms. 3. set building corners with stakes. 4. set-up form boards for outside and inside of footings. 5. level form boards. 6. set-up forms for column footings. 7. shovel excavate the area for setting the form.	• Students will be involved in setting up batter boards, stringing lines, excavating for fottings, and setting up forms as a class activity. • Teacher provides demonstration of each activity using transparencies. • Student follows a teacher demonstration with "hands-on" supervision. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 6,7,9 NUMBERS B 2, 4a,i,5 APPLICATION C 5 PHYSICAL D 1a,b,d,e 2c 3 -	Modern Carpentry	13	22
	"Footing Design"	12	29

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC03 TASK: Assist in constructing forms for footings

Basic Information for Cooperative Teaching

Language of the Task

Plumb bob

Intersection point

Foundation corner

Footing forms

Batter board

Center of stake

Level

Carpenter's level

Inside face

Crosswise

Deep

Wedge

Brace
- inner
- outer

Banked

Support

Main beam
- posts

Chimney

Fireplace

Excavate

Key

Concrete

Slab

Quantitative Concepts

Establish footing width by adding:
1. wall thickness (8") plus
2. inside overhang (6") plus
3. outside overhang (6")

Select the appropriate footing depth by consulting a soil type chart or asking the vocational instructor.

Determine the number of linear feet of forms and the number of stakes needed.

Estimate the number of yards of concrete needed for a specific footing.

Suggestions:

- Easy to simulate this task by using styrofoam or similar material to represent the footings and a wall section.
- Be careful in using words with multiple meanings when talking to lip reading deaf students.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Mix concrete and mortar

Code: CON - RC04

Student Name: _____

Student Progress: Introduced | Involved | Productive | Employable

Behavioral Task Knowledges/Task Skills

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify the ingredients of concrete:
   a. cement
   b. aggregate
      1) fine (sand)
      2) coarse (gravel or crushed stone)
   c. water.
2. describe the mix proportions of concrete:
   a. cement
   b. sand
   c. gravel
   d. water.
3. select and operate mixing tools and equipment:
   a. cement mixer
   b. ready-mix truck
   c. wheelbarrow
   d. hoe.
4. identify the ingredients for mortar.
5. describe the mixing proportions for mortar.
6. prepare high quality mortar and cement mixes by following prescribed procedures.

Instructional Methods

- Teacher or resource person provides demonstration using transparencies.
- Field representative from a cement company addresses class concerning manufacture and processing of materials.
- Students pour and finish slabs in the lab or on school grounds if desired.
- Students view filmstrip.
- Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,3,9 NUMBERS B 2b, 4b,c,5 APPLICATION C 5 PHYSICAL D 1a,d 2d 3-	Modern Carpentry, Unit 6	13	22
	"Pouring the Footing"	12	20
	"Footing"	12	20
	"Foundations for Your Home"	10	53

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC04 TASK: Mix concrete and mortar

Basic Information for Cooperative Teaching

Language of the Task

Concrete

Portland cement

Water

Aggregate
fine 1/4" screen
coarse 1/3"-1 1/2" screen

Cement mixer

Mixing consistency

Quantitative Concepts

One (1) bag Portland cement weighs 87 1/2# equal to 1 cubic foot in volume.

Visualize one cubic yard:
1 yd. x 1 yd. x 1 yd.

Large aggregate more than 1/5 the thickness of wall are usable.

Prepare mixes in a ratio 1:2:4
One part water to two parts cement to four parts sand

Perform a silt test:
1. Add 2" of sand to a quart jar.
2. Add water to 3/4 full.
3. Shake violently for minute or two.
4. Let stand one hour.
5. Measure silt layer at top of sand, if more than 1/8" thick, soil may not be suitable for a foundation.

Suggestions:

- Stress the importance of wearing gloves to keep hands clean. Keep mortar and concrete off the skin.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.

Supportive Instructional Materials:

Modern Carpentry, Willis H. Wagner, Goodhart-Wilcox, pg. 91
Rough Carpentry and Masonry, Atkinson, McGraw Hill, pg. 17

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Lay blocks

Code: CON - RC05

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify the different sizes and shapes of block: a. stretcher (3 core) b. corner c. double corner or pier d. bull nose e. jamb f. stretcher (2 core) g. full cut header h. partition (4"x6") i. beam or lintel. 2. describe the typical block arrangements for corners, walls, and door/window openings. 3. perform the following job skills in laying block: a. aligning a block wall with a string line b. preparing mortar c. placing mortar on block joints d. leveling a block e. finishing a mortar joint.	• Teacher or para-professional provides demonstration of block/brick laying techniques. Students demonstrate procedures under supervision. • Students review illustrated text materials. • Students prepare and build corners and stretcher courses in lab. • Teacher encourages small peer group cooperation and interaction. • Evaluate work with students on an individual basis.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,3,6,9	Modern Carpentry, Unit 6	13	22
NUMBERS B 2b,4a,i,5	"Brick and Block Laying" (booklets)	13	48
APPLICATION C 5	"Block Laying"	12	29
PHYSICAL D 1a,b,d,e 2d 3-			

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC05 TASK: Lay blocks

Basic Information for Cooperative Teaching

Language of the Task

Trowel
Mortar
Core
Block
4" and 8"
12" and 16"
Mortar board
Cement mixer
Sand
Water
Wheelbarrow
Scaffold
Vertical
Horizontal
Plumb
Level
Water proofing
Course
Line level
Block line

Quantitative Concepts

Use of level

Use of plumb

Square footage in wall with size of blocks

Given the length of the wall and size of block, determine the number of blocks needed for the first row (course). Then for a 12 course wall.

Suggestions:

- Use plastic (toy) bricks or rectangular sugar cubes in simulating block laying.
- Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Set posts and columns

Code: CON - RC06

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify the different types of posts and columns: a. built-up (wood post) b. steel posts. 2. demonstrate the basic procedures for installing posts and columns: a. fabricate built-up post by nailing together three 2x6's b. locate/position an alignment pin for post in footing c. position post or column on footing and over alignment pin d. adjust threaded steel post for correct height.	• Students work in small groups building different types of posts, testing and evaluating the strength of each. • Teacher and/or para-professionals provide demonstration of steel and wood post setting and adjustment. • Teacher concentrates his effort with students having difficulty. • Students review illustrated texts, transparencies, and charts.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3,6 NUMBERS B 4a APPLICATION PHYSICAL D 1a, 2b, 3a	Modern Carpentry	13	22
	Architectural Drafting and Design	13	34
	"Framing For Openings"	12	20

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC06 TASK: Set posts and columns

Basic Information for Cooperative Teaching

Language of the Task

Footings

Above/below

Reinforcing

Post anchor

Bracket

Built-up wood post

Defects

Buckle

Adjustable

Column

Post

Quantitative Concepts

Determine the "adjustable size" of a post or column needed to support a beam 8' above a basement floor.

Suggestions:

- Ask the construction teacher for a made-up or framing model.
- Drill deaf student extensively on language of the task.
- Be careful in using words with multiple meanings when talking to lip reading deaf students.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in setting girders and beams

Code: CON - RC0Z

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. describe the basic purpose of girders and beams.
2. identify and describe the different types of girder construction:
   a. built-up
   b. solid (beams).
3. demonstrate the following procedures for installing girders and beams over posts and columns:
   a. cut and assemble built-up beams
   b. set beams and girders on foundation and post/columns by crane or mass handling.

Instructional Methods

- Students assemble mock-ups of different types and sizes of beams for specified spans and loads.
- Teacher provides demonstration of procedures for setting beams.
- Students in small groups visit a job site to observe this operation.
- Teacher encourages small peer group cooperation and interaction.
- Teacher matches successful students who are interested in helping those having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 6,9 NUMBERS B 4a,i APPLICATION C 5 PHYSICAL D 1a,d 2e 3c	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC07 TASK: Assist in setting girders and beams

Basic Information for Cooperative Teaching

Language of the Task

Joists

Span

Girders

Foundation

Flanges

Quantitative Concepts

Determine the load per square foot on given floors, i.e. attic, bathroom, living room from a load table.

Girder and beam sizes are determined by
1. deaf load and live load weights
2. distance between posts and columns

Suggestions:

- Discuss the composition of different girders.
- Practice reading various tables used in selecting beams and girders.
- Wood and steel beams vary in characteristics:
  1. wood-width, depth, species, grade
  2. steel-weight, depth, thickness of web and flanges
- Be careful in using words with multiple meanings when talking to lip reading deaf students. (I-beam)
- Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in constructing framing over girders and beams

Code: CON - RC08

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify the framing components: a. hangers b. solid bridging c. I-beam plate. 2. describe and demonstrate the different methods for framing over a girder or beam: a. notching joists and using a ledger strip b. overlapping joists on top of beam and placing solid bridging between c. using a joist and beam hanger.	• Students view filmstrip and illustrated text materials. • Students simulate procedures for constructing framing over girders and beams on a scale model house section (1" = 1'0") • Teacher encourages small peer group cooperation and interaction. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,6,7,9 NUMBERS B 2a,b,4a,i APPLICATION C 5,8 PHYSICAL D 1a,b,d,e 2d 3-	Modern Carpentry	13	22
	"Building the Frame of a House"	10	18
	Dwelling House Construction	13	56

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC08 TASK: Assist in constructing framing over girders and beams

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	• Teacher and deaf student should cooperatively develop some simple signs related to language of the task.
Joists Foundation wall Wood pad Sill Headroom Notched Ledger Flush/level Hangers/stirrups Shrink Sloping H beam I beam	Illustrate the concept of flush and level using scrap building materials or a scale model.	

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Assist in installing sills

Sheet 1 of 1

Code: CON - RC09

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced Involved Productive Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify common sill material sizes. 2. describe the basic purpose of the sill. 3. perform the following job skills: a. install anchor bolts in foundation wall, with size and spacings specified from building code b. drill holes in sill for anchor bolts c. apply sill sealer or mortar to top of foundation d. place sill plate in position e. level sill by tapping f. bolt sill in place.	• Teacher provides a demonstration in the construction laboratory. • Students simulate procedures on scale model house section (1" = 1'0"). • Students review illustrated text materials. • Teacher encourages small peer group cooperation and interaction.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,3,6,7,9 NUMBERS B 4a,i, 5 APPLICATION C 5 PHYSICAL D 1a,d,e 2d 3-	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC09 TASK: Assist in installing sills

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	
Sill plate - mud sill Grout Mortar Resiliant Waterproof Sill seal	Determine the number of rolls of sill sealer needed to seal 250' of sill if the rolls come in 50' lengths.	• Sills vary in size depending on type of construction. • Discuss sections of local building codes dealing with sills. • Teacher and deaf student should cooperatively develop some simple signs related to language of the task.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in installing floor joists

Code: CON - RC10

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify the common on-center spacing of floor joists:
   a. 16" o.c.
   b. 12" o.c.
   c. 20" o.c.
   d. 24" o.c.

2. perform the following job skills:
   a. place header joists in position and toenail them to sill
   b. place full length joists in position
   c. attach joists to header at layout marks with 20d nails
   d. repeat process along opposite wall
   e. nail joists together at beam or girder with 10d nails
   f. nail doubled joists together.

Instructional Methods

- Class visits job site to observe floor joist framing.
- Students simulate procedures of scale model house section (1" = 1'0").
- Teacher and/or para-professional provides a demonstration of different procedures for installing floor joists.
- Students follow a teacher demonstration with "hands-on" supervision.
- Students review illustrated text materials.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,3,6,7 NUMBERS B 2a,4a,i APPLICATION C 5,8 PHYSICAL D 1a,e 2d,e 3a,b,c,d,e, f,g	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC10 TASK: Assist in installing floor joists

Basic Information for Cooperative Teaching

Language of the Task

Placed on edge
Steel bar joists
Live loads
Vibration
Deflection
Joist header
Master layout
On center
Lapped
Underneath
Trimmers
Trimmer joists
Tail joists
Doubled joists
Toenail
Crown
Crook
Butt
Overlay board
Girder
Protruding
Pneumatic powered nailer

Quantitative Concepts

16 in. on center (oc)

Determine the number of floor joists needed in a 12' floor if the joists are placed:
12 o.c.?
16 o.c.?
24 o.c.?

Relate various nail sizes (lengths) with penny sizes (d).

Suggestions:

- Informally encourage voluntary buddy system for assisting deaf students (individualize without calling attention to the individual).
- Be familiar with the Uniform Building Code for nail spacing.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Frame floor openings

Code: CON - RC11

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify the floor frame opening members: a. tail hoists b. headers c. trimmers. 2. perform the following job skills: a. place boards or plywood on decking to provide work surface b. cut and set the trimmer joists in place c. determine length of headers d. cut headers and tail joists to length e. layout position of tail joists from main header f. install headers g. install tail joists h. nail the double header in place with 20d nails i. nail the double trimmer in place j. stagger nails on a diagonal to increase strength of fastening k. attach headers, trimmers, and tail joists with metal framing anchors.	• Students simulate floor framing procedures on a scale model house section (1" = 1'0"). • Class visits a job site to observe and/or participate in framing of floor openings. • Teacher encourages small peer group cooperation and interaction. • Teacher matches successful students who are interested in helping those having difficulty. • Students review illustrated text materials.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,3,6,7 NUMBERS B 2b,4a,i APPLICATION C 5,8 PHYSICAL D 1a,e 2d,e 3	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC11 TASK: Frame floor openings

Basic Information for Cooperative Teaching

Language of the Task

Working deck

Header

Tail joists

First trimmer, second trimmer

Plywood

Tongue and groove plywood

Adhesive

Joists

Quantitative Concepts

General procedure:
cut to length-square and true

Compare nail sizes by length and penny (d) designations.

Suggestions:

- Make mock-up version.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.
- Informally encourage voluntary buddy system for assisting deaf students (individualize without calling attention to the individual).

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Install bridging

Sheet 1 of 1

Code: CON - RC12

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. determine the standard location/spacing of cross bridging.
2. identify the common types of bridging:
   a. solid
   b. regular (cross).
3. describe the basic purpose of bridging.
4. perform the following job skills in installing cross bridging:
   a. layout master piece with framing square.
   b. locate position of run and mark with chalkline.
   c. cut bridging pieces from master.
   d. start two 8d nails in each end of bridging.
   e. attach a piece to each side of every joist
   f. do not nail lower ends of bridging until subfloor is attached.
5. perform the following job skills for installing solid bridging:
   a. cut solid bridging piece from joist-size material.
   b. install full piece between joists on top of beam or girder.
6. identify the types of cross-bridging materials: 1"x3" wood, prefabricated steel bridging.

Instructional Methods

- Class visits job site to observe the installation of bridging.
- Students simulate procedures on scale model house section (1" = 1'0").
- Para-professionals provide sustained involvement with students having difficulty with this task.
- Students review illustrated text materials.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,6,9 **NUMBERS** B 2b,4a,i **APPLICATION** C 5,8 **PHYSICAL** D 1a,d,e 2a 3a,c,d,e,f	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC12 TASK: Install bridging

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	**Quantitative Concepts**	
Joists Cross-bridging Prefabricated Chalk line Subfloor	Determine the length of bridging if the joists are 2"x10" boards, spaced 16" apart on center. Measure the angle for cutting bridging. Determine the cutting procedure for getting the maximum amount of pieces of bridging out of a 1"x3"x12'. Discuss nail sizes most appropriate for attaching bridging (8d).	• Students identify joists, girders, cross-bridging from pictorial drawing. • Term sheet used to identify the written words: joists, girder, etc. • Teacher and deaf student should cooperatively develop some simple signs related to language of the task.

Supportive Instructional Materials:

Pictorial drawing
Term sheet
1 x 3 model

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Attach subflooring

Code: CON - RC13

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify different types of sub-flooring materials:
   a. plywood
   b. shiplap
   c. tongue and groove
   d. common boards
   e. fiberboard.

2. describe the basic purpose of sub-flooring:
   a. add rigidity to structure.
   b. provide a base for application of finished materials.

3. perform the following job skills for installing shiplap or common board flooring:
   a. lay at a 45° angle with joists.
   b. start at a distance from corner and lay back to corner.
   c. let ends hang out over openings and walls and cut off later with saw.
   d. use two 8d nails in each board to joist.
   e. lay without cracks between boards.

4. perform the following job skills for installing plywood subflooring:
   a. use 1/2" or 5/8" plywood laid perpendicular to joists.
   b. use 8d nails six inches apart, along edges and ten inches apart on intermediate members.

Instructional Methods

- Students copy outline of a first floor from a blueprint and draw in the placement of 4'x8' sheets of subflooring.
- Students simulate procedures on scale model house section (1" = 1'0").
- Class visits job site to observe laying of subflooring.
- Students review illustrated text materials.
- Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 6,7,9 **NUMBERS** B 2b,4a,i **APPLICATION** C 5 **PHYSICAL** D 1a,d,e 2d 3a,c,e,f,g	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC13 TASK: Attach subflooring

Basic Information for Cooperative Teaching

Language of the Task

On center

Partical board

Fiberboard

Shiplap

Common boards

Tongue and groove

Quantitative Concepts

Determine the number of square feet in a sheet of plywood (4'x8').

Determine the number of sheets of plywood needed to cover an area of 24'x48'.

Discuss nail size and nail types which may be appropriate, i.e. 8d ring nail.

Suggestions:

- Collect samples of types of subfloor materials from vocational instructor.
- Consult local supplier for relative costs per square foot for discussion.
- On study sheet line is drawn down center; have student write question: What is purpose of subflooring? Write answer on right side as a personal study tool and continuous study sheet of concepts and knowledge requisites.

Questions	Answers
What is purpose of subflooring?	to make house strong & flat. so rest of house can be built on top of it.
rigidity (what does word mean?)	straight, not bumpy, firm
finished materials	what the house is built of

Supportive Instructional Materials:

Paper
Pencil
Samples of floor materials

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in framing outside wall corner

Code: CON - RC14

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name corner framing components. 2. describe corner framing methods: a. three full studs and blocking or spaces. b. three full studs and no blocking. 3. perform the following job skills for constructing corners: a. frame complete end and side wall. b. nail three or four spacer blocks to end stud in side wall. c. nail full stud to spacer block. d. raise and assemble side and end walls forming corner. e. nail through end stud of end wall with 10d nails spaced 12" apart.	• Teacher develops an activity/quiz worksheet on identification of wall frame members. • Students construct different wall corner frame models (full size) in the construction lab. • Teacher makes contact with <u>each</u> student during the class period. • Teacher matches successful students who are interested in helping those having difficulty. • Students review illustrated text and transparency materials.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,6,7,9 **NUMBERS** B 2b,4a,i,5 **APPLICATION** C 5,8 **PHYSICAL** D 1a,d,e 2d,e 3a,b,c,e,f, g	<u>Modern Carpentry</u> "Wall Framing"	13 12	22 29

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON- RC14 TASK: Assist in framing outside wall corner

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	
Corner framing Studs Blocking Spacer blocks	Measure and layout framing materials for cutting (see Construction teacher for common lengths and sizes). Discuss "16 inch on center concept" as it applies to spacing the framing members. Discuss the concept of square and plumb.	• Label pictures or models of studs, spacer blocks, plates, and have student match with pictures. • Attend class activity to work with vocational teacher at initial presentation, having students match words with activities and materials. • Teacher and deaf student should cooperatively develop some simple signs related to language of the task.

Supportive Instructional Materials:

Labels, models, building materials from vocational instructor

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in framing partition intersections

Code: CON - RC15

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name partition frame members. 2. describe specific partition intersection framing methods: a. extra studs in outside wall. b. using blocking and backing between regular studs in outside wall. 3. perform the following job skills for framing partition intersections: a. determine intersection point on exterior wall. b. set extra studs in outside wall at intersection, or bridge between studs at intersection point with blocking or backing material. c. raise partition into position. d. nail through partition end stud into wall stud or backing.	• Students simulate construction techniques on scale model house section (1"x1'0"). • Teacher develops activity/quiz worksheet on identification of framing members. • Class visits job site to observe partition framing. • Students review illustrated text materials. • Students follow a teacher demonstration with "hands-on" supervision.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,6,7,9 NUMBERS B 2b,4a,i,5 APPLICATION C 5,8 PHYSICAL D 1a,d,e 2d,e 3a,b,c,e, f,g	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC15 TASK: Assist in framing partition intersections

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	
Partition Frame Members Framing Intersection Partition intersection Solid anchorage	Discuss the concept of plumb and square. Compare and identify 8d, 16d, 20d, nails.	• Refer to pictures or blueprints showing how partitions and outside walls connect. • Collect framing lumber samples and various nail samples from the vocational instructor.

Supportive Instructional Materials:

Framing lumber samples from vocational instructor

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Follow a master stud layout

Code: CON - RC16

Student Name: _____

Student Progress: Introduced | Involved | Productive | Employable

Behavioral Task Knowledges/Task Skills

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify the basic master stud layout information:
   a. floor levels.
   b. ceiling heights.
   c. window/door heights.
   d. thickness of specific materials.
2. describe the basic purpose of using the master stud layout.
3. demonstrate the basic procedure for using a master stud layout:
   a. layout distance from the rough floor to the ceiling.
   b. draw the position of the sole plate and double top plate.
   c. layout position and size of header.
   d. layout heights of rough openings and sills.
   e. length of various studs can be taken directly from this master layout.

Instructional Methods

- Students build and prepare a simple master stud and demonstrate its use on a model (1' = 1'0").
- Teacher and/or resource person discusses the use and importance of a master stud layout.
- Students review illustrated text materials.
- Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,2,3,7,9 NUMBERS B 4a,5,6 APPLICATION C 2,3,7 PHYSICAL D 1a-e 2c 3a,b,c,f,g	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC16 TASK: Follow a master stud layout

Basic Information for Cooperative Teaching

Language of the Task	Quantitative Concepts
Master stud Layout distance Sole plate Double top plate	Practice measuring distances of 30' to 80' to 1/4" accuracy. This may be done outside when weather permits or inside in a gymnasium, cafeteria, or other large room. Discuss dimension lumber sizes, i.e. 2x4 actually measures 1 1/2" x 3 1/2", etc.

Suggestions:

- In class setting (building trades), have students show you what a:
  1. master stud is.
  2. describe a layout distance, sole plate, double top plate.
- Have students draw a master stud or tell how it is used.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.

Supportive Instructional Materials:

Model

Scrap 2x4's, 2x6's, 2x10's, 2x12's for measurement purposes

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Frame rough openings

Code: CON - RC17

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify rough opening framing members: a. header b. trimmer stud c. rough sill d. cripple stud. 2. perform the following job skills in framing rough openings: a. cut openings in completed wall. b. nail in trimmers. c. position and nail in header. d. position and nail in sill. e. cut and nail in cripples. 3. perform the following job skills for header construction: a. determine rough opening and header length. b. determine size of header required from table. c. assemble header by placing two members on edge and nailing together with a plywood spacer.	• Students simulate framing of rough wall openings on a scale model house section (1' = 1'0"). • Class visits job site to view the framing of rough openings. • Students follow a teacher demonstration with "hands-on" supervision. • Teacher makes contact with <u>each</u> student during the class period. • Students review illustrated text materials.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,6,7,9 **NUMBERS** B 2b,4a,i,5 **APPLICATION** C 5,8 **PHYSICAL** D 1a,d,e 2d,e 3a,b,c,e, f,g	<u>Modern Carpentry</u>	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC17 TASK: Frame rough openings

Basic Information for Cooperative Teaching

Language of the Task

Header

Trimmer

Rough sill

Cripple stud

Sill

Quantitative Concepts

Identify nail sizes by length in inches or penny sizes used in framing.

Become familiar with actual framing lumber sizes which are called two by fours, two by tens, two by twelves, etc.

Suggestions:

- Collect framing lumber sample pieces for practice measuring and identification.
- Define each term in words he can remember as an oral expression.
- Teacher makes contact with each student during the class period.

Supportive Instructional Materials:

Book
Pencil,paper
Collect samples of framing lumber and appropriate framing nails from vocational education instructor.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Assemble a wall section

Code: CON - RC18

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name the component framing members of a wall section. 2. demonstrate the basic procedure for assemblying a wall section: a. cut the various stud lengths from master stud layout. b. cut and assemble headers and sills from plate layout. c. place full length studs in position between plates. d. nail top and bottom plates to studs with two 16d nails. e. set trimmer studs and nail them to full length studs. f. position and nail in headers. g. install upper cripples. h. erect wall section and nail in position. i. install sills and nail in lower cripples. j. add studs or blocking at intersection points. k. nail wall sheathing in place.	• Para-professionals provide sustained involvement with students having difficulty with this task. • Students simulate procedures on a scale model house section (1" = 1'0"). • Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,3,7,9 NUMBERS B 4a, 5 APPLICATION C 5,7 PHYSICAL D 1a,b,e 2c 3a,b	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC18 TASK: Assemble a wall section

Basic Information for Cooperative Teaching

Language of the Task

Stud

Master stud layout

Headers

Sills

Plate

Trimmer studs

Cripples

Wall sheathing

16d nails

Quantitative Concepts

Discuss the "16 in on center" concept which refers to spacing framing members 16" apart as measured by the center of the board.

Become familiar with 20d, 16d, 8d, common nails.

Suggestions:

- Handle and discuss actual materials in building trades room.
- Have student print labels for each component.
- Students remove label and identify each component orally.
- Have student show or tell each component using the correct name for each member.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.

Supportive Instructional Materials:

Lumber, nails, other above mentioned materials under language of the task
Labels

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Erect a wall section

Code: CON - RC19

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name the basic framing components of a wall section. 2. perform the following job skills in erecting a wall section: a. move into proper location. b. be sure that bracing is close at hand. c. be sure that sufficient help is available for lifting. d. install a diagonal brace to those sections without sheathing. e. raise the wall section to a vertical position and brace. f. adjust the position of the section and nail through sole plate and subfloor into floor joist. g. remove braces and plumb corners and mid-point of wall.	• Students simulate procedures for erecting a wall section on a scale model house section (1" = 1'0"). • Teacher develops activity/quiz worksheet on identification of wall framing members. • Teacher matches successful students who are interested in helping those having difficulty. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3 NUMBERS B 4a,i APPLICATION C 5 PHYSICAL D 1a,d,e 2e 3a,c,f,g	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC19 TASK: Erect a wall section

Basic Information for Cooperative Teaching

Language of the Task

Bracing

Diagonal

Sheathing

Sole plate

Floor joist

Braces

Plumb

Vertical

Rough opening

Quantitative Concepts

Discuss the concepts of plumb, flush, square, and level.

Suggestions:

- Have students draw lines
  diagonal
  vertical (plumb)
  square, using a guide.
- Use plumb bob or a weight at the end of a string to demonstrate that plumb means vertical straight line.
- Use table as model to show table top is square, table legs are plumb.
- Use level to demonstrate plumb principle.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.

Supportive Instructional Materials:

Plumb pop
Level
Table
Square

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Instsll partition sections

Code: CON- RC20

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name the component framing members of a partition frame. 2. demonstrate the basic procedures for assembling and installing partitions: a. assemble and erect long partitions first. b. frame small alcoves, wardrobes, and closet partitions with 2x2 lumber. c. frame openings for heating and plumbing.	• Students follow a teacher demonstration with "hands-on" supervision. • Students simulate procedures for installing partition sections on a scale model house section (1" = 1'0"). • Class visits job site to observe installation of partition sections. • Students review illustrated text materials. • Teacher concentrates his effort with students having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,3 NUMBERS B 4a-i, 5 APPLICATION C 5,7 PHYSICAL D 1a,b 2c 3a,b,c,f,g	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC20 TASK: Install partition sections

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	
Alcoves Wardrobes Partitions	Review exact sizes of framing lumber, i.e. two by two measures 1 1/2" x 1 1/2", two by four measures 1 1/2" x 3 1/2".	• Discuss with the vocational instructor some practical concepts to be reinforced. • Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students. • Teacher and deaf student should cooperatively develop some simple signs related to language of the tasks.

Supportive Instructional Materials:

Samples of framing material

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Install bracing to exterior walls

Code: CON - RC21

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. describe the basic purpose of bracing exterior walls. 2. identify the common sizes of bracing materials. 3. demonstrate the procedures/techniques for installing bracing: a. install let-in corner bracing by running 1 x 4 diagonally across frame. b. install short pieces of 2 x 4 block to base of corner sections.	• Students simulate procedures on scale model house corner section. • Students organize a visit to a job site to observe bracing of exterior walls and other related operations. • Teacher develops an activity/quiz worksheet illustrating methods of applying bracing. • Students review illustrated text materials. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3 NUMBERS B 4a,i APPLICATION C 5 PHYSICAL D 1a,d 2a 3c,f,g	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC21 TASK: Install bracing to exterior walls

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	
Exterior walls Lateral stresses Blocking Bracing stock	Discuss angles, widths, and depths of cuts for bracing. Describe the strength feature of a diagonal brace.	• Illustrate the bracing concepts using fingers. • Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students. • Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

Collect framing material to use for identification, i.e. 2x4, 2x6, 2x10, 2x12.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Add double top plate

Code: CON - RC22

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. describe the basic purpose of double top plate. 2. identify the different types of fastening materials. 3. demonstrate the procedures/techniques for installing double top plate: a. select long straight lumber. b. attach to top of plate with 16d nails. c. locate joints in top piece at least four feet from joints in bottom piece. d. overlap at corners and intersections.	• Students simulate procedures for adding a double top plate on a scale model house corner section (1" = 1'0"). • Teacher encourages small peer group cooperation and interaction. • Teacher matches successful students who are interested in helping those having difficulty. • Para-professionals provide sustained involvement with students having difficulty with this task. • Students review illustrated portions of the text.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE **NUMBERS** B 4a,i, 5 **APPLICATION** C 5 **PHYSICAL** D 1a,d,e 2b 3a,b,c	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC22 TASK: Add double top plate

Basic Information for Cooperative Teaching		
Language of the Task	Quantitative Concepts	Suggestions:
Joist Rafters Lower top plate Lapped	Discuss the "16 on center" concept. Ask vocational instructor for illustrations. Sort a box of random sized nails and describe each different size with the proper penny (d) designation. Become proficient in estimating 16' in length because 16' 2x4's are used for top plate material. Be able to differentiate between 16', 14', 12', 10', and 8' in length.	• Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students. • Teacher and deaf student should cooperatively develop some simple signs related to language of the task.

Supportive Instructional Materials:

Obtain a box of random sized nails from the vocational education instructor.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Apply wall sheathing

Code: CON - RC23

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify different types of wall sheathing materials: a. plywood b. fiberboard c. gypsum d. wood boards. 2. describe the basic purpose of wall sheathing: a. cover structure b. provide lateral strength to structure c. provide nailing base for exterior finish materials. 3. list the standard thicknesses of specific wall sheathing material. a. fiberboard c. plywood b. gypsum d. wood boards. 4. demonstrate the appropriate procedures/techniques for installing wall sheathing: a. apply sheats horizontally or vertically. b. nail with 6d nails 6" on center. 5. select and use the appropriate fasteners for attaching wall sheathing materials: a. plywood (6d nails) c. fiberboard b. gypsum (1 3/4" nails) (1 1/2" roof)	• Students simulate the application of wall sheathing on a scale model of a house corner section (1" = 1'0"). • Students review manufacturer's booklets and illustrated text materials. • Students apply wall sheathing to full-size wall section. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1	Modern Carpentry	13	22
NUMBERS B 2b,4a,i,5	"Sheathing"	13	6
	"Sheathing"	13	26
APPLICATION C 5	"Sheathing"	13	31
PHYSICAL D 1a,d,e 2c 3a,b,c,f,g			

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC23 TASK: Apply wall sheathing

Basic Information for Cooperative Teaching

Language of the Task	Quantitative Concepts
Rigidity	Recognize 4'x8' sheets.
Lateral strength	Distinguish between 1/2 and 3/4" thickness which is standard thickness of fiberboard sheathing.
Diagonal bracing	
Wood fibers	Select and/or sort 1 1/2" roofing nails for 1/2" sheathing or 1 3/4 " roofing nails for (3/4) 25/32" sheathing.
Tongue and groove	
Fiberboard	Discuss the concept of flush.
Gypsum sheathing	
Horizontally/vertically	
On-centers	

Suggestions:

- Distribute, discuss, and identify samples of sheathing and nails.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.

Supportive Instructional Materials:

Collect samples of 1/2" and 3/4" (25/32") sheathing for identification purposes. Also samples of 1 1/2" and 1 3/4" roofing nails.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in assembling a ceiling frame

Code: CON- RC24

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify and locate the ceiling framing members:
   a. joists
   b. ledger
   c. blocking
   d. nailer.

2. identify the following procedures/techniques for assembling a ceiling frame:
   a. cutting and installing on ledger.
   b. installing joist hangers.
   c. cut outer end of joists to match slope of roof.
   d. toenail joists to top plate with four 10d nails.
   e. fasten a nailing strip to top plate to carry parallel ceiling joists.

Instructional Methods

- Teacher provides demonstration/discussion of Procedures for assembling a ceiling frame using transparencies.
- Students simulate ceiling framing on scale model house corner section (1" = 1'0").
- Students review illustrated text materials.
- Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,3,9 NUMBERS B 4a,5 APPLICATION C 5,7 PHYSICAL D 1a,b 2c 3a,b,c,f,g	Modern Carpentry "Ceiling Frame"	13 12	22 29

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC24 TASK: Assist in assembling a ceiling frame

Basic Information for Cooperative Teaching

Language of the Task

Assembly

Length of span

Ceiling finish
- plaster
- dry wall

Narrow dimensions

Beam

Flush

Ledger

Joist hangers

Rafters

Sub joists

Double plate

Nailing strips

Access hole-scuttle hole

Quantitative Concepts

Discuss the concepts of:
- square - header to joist
- parallel - joist to joist
- on center - distance between the center of one joist to the center of the next joist

Recognize nail sizes including:
- 10d (penny) nails
- 16d (penny) common nails

Suggestions:

- Check local building codes or vocational instructor for certain types of materials.
- Discuss and measure framing lumber sizes as compared to common designated sizes, i.e. two by six is actually 1 1/2" thick and 5 1/2" wide.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Cut and erect roof rafters

Code: CON - RC25

Student Name: _____

Student Progress: Introduced | Involved | Productive | Employable

Behavioral Task Knowledges/Task Skills

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify the different types of roof rafters:
   a. common
   b. hip
   c. valley
   d. jack.
2. select straight and true pieces of lumber for rafters.
3. operate power and hand saws to cut rafters to predetermined and marked sizes.
4. select the appropriate nails (types/sizes) for nailing specific rafters.
5. follow a prescribed sequence for erecting, leveling, and adjusting roof rafters.

Instructional Methods

- Students practice cutting different types of rafters for specific given applications.
- Students view film loops and illustrated text materials.
- Students simulate rafter setting on scale model of house corner section (1" = 1'0").
- Teacher encourages small peer group cooperation and interaction.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,7,9	Modern Carpentry	13	22
NUMBERS B 4a,e 5	"Laying Out and Cutting Common Rafters"	5	36
APPLICATION C 5,7,8	"Rafter Construction"	12	20
PHYSICAL D 1a,b,e 2c 3a,b			

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC25 TASK: Cut and erect roof rafters

Basic Information for Cooperative Teaching

Language of the Task

Framing square

16 oz or 20 oz hammer

16d(penny) and 10d(penny) nails

Adjustable T-bevel

Rise (vertical and horizontal)

Roof pitch

Ridge

Bird's mouth

Rafters
- jack
- hip
- valley
- common

Overhang

Plate

Pattern rafter

Pattern layout

Ceiling joist

Ridge boards

Temporary bracing

Quantitative Concepts

Recognize 16d and 8d nails.

Describe roof pitch in inches of rise and inches of run, i.e. a 4-12 roof pitch has a rise of 4 and a run of 12. A 12-12 roof pitch has a rise of 12 and a run of 12 or a 45° angle roof.

Suggestions:

- Learn to read a table listing rafter sizes for various loads and spacings.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.
- Ask the vocational instructor for a rafter pattern illustration to use in discussing the parts of a rafter.
- Handle, identify, and discuss short pieces of 2x4's, 2x6's, 2x8's, 2x10's.

Supportive Instructional Materials:

Collect short samples of 2x4's, 2x6's, 2x8's, 2x10's.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Frame-in roof openings

Code: CON - RC26

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. describe the different types of roof openings: a. chimneys b. skylights. 2. demonstrate the basic procedure for framing a roof opening: a. nail temporary strip across top of rafter to be cut and two on each side of opening. b. cut rafters and nail headers in place. c. double the headers and trimmers if opening is large.	• Students simulate roof opening framing on scale model of house corner section (1" = 1'0"). • Teacher encourages small peer group cooperation and interaction. • Students review illustrated text materials.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,3,7 NUMBERS B 4a,i, 5 APPLICATION C 5,7 PHYSICAL D 1a,b,e 2c 3a,b,c,f,g	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC26 TASK: Frame-in roof openings

Basic Information for Cooperative Teaching

Language of the Task	Quantitative Concepts
Chimney Sky lights Plumb line Headers Trimmer rafter	Recognize 16d and 10d nails. Measure on sample pieces of wood a series of 1) full inch measurements 8" long, 10" long, etc. 2) inches and fractions measurements 8 1/2" long, 9 3/4" long, 10 7/8" long.

Suggestions:

- Informally encourage voluntary buddy system for assisting deaf students (individualize without calling attention to the individual).
- Pairs of students can work together in 1) listing a variety of measuring problem distances, i.e., 4 1/2", 5 3/4", 6 7/8", 8 3/8", etc. and then 2) marking boards to represent the listed measurements.

Supportive Instructional Materials:

Collect samples of framing lumber.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Assist in anchoring a roof frame

Code: CON - RC27

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify different anchor components and the application of each. 2. demonstrate the basic procedures/techniques for anchoring a roof frame by: a. installing framing anchors to plate and rafters. b. anchoring roof rafters to ceiling joists. c. anchoring end walls with stub joists and metal straps.	• Teacher develops activity/quiz worksheet on identification of different types of roof anchors. • Teacher and/or resource person provides demonstration on anchoring a roof frame. • Students review illustrated text materials. • Teacher concentrates his effort with students having difficulty with this task. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 6,9 NUMBERS B 2b, 4a APPLICATION C 5 PHYSICAL D 1a,d,e 2a 3a,b,c-	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: COR - RC27 TASK: Assist in anchoring a roof frame

Basic Information for Cooperative Teaching

Language of the Task

Outward thrust

Plate

Hip roof

Collar beams

Ridge

Stub ceiling joists

Metal straps

Quantitative Concepts

Parallel

Alternate thirds

Boards 1'x6'

Suggestions:

- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.
- Students review and label parts of a roof frame on an illustration.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Assemble and install roof trusses

Code: CON- RC28

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify the common truss framing members: a. bottom chord b. top chord c. tension web d. compression web plate e. span f. gusset (connector). 2. describe the advantages of using roof trusses. 3. demonstrate the basic procedure for and assembling a truss: a. pre-cut members to specifications. b. clamp members together. c. attach connectors for joints: 1) truss plates 2) truss connector 3) split ring connector 4) bolt and washer. d. flip truss over and attach joint connectors to opposite side. e. check dimensions carefully and nail it to floor for use as a pattern. f. assemble remaining trusses. g. raise completed trusses to roof and anchor in position.	• Students assemble scaled pre-cut truss materials following an instructor-prepared print. • Small groups of students assemble different types of truss models - test and evaluate strength and construction of each type. • Students review illustrated text and manufacturer's materials. • Teacher encourages small peer group cooperation and interaction.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,3 NUMBERS B 4a,i, 5 APPLICATION C 5,7,8 PHYSICAL D 1a,b,e 2c 3a,b,c,f,g	Modern Carpentry	13	22
	Truss Design	13	43

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC28 TASK: Assemble and install roof trusses

Basic Information for Cooperative Teaching

Language of the Task

Truss
Triangular
Rigidity
Stresses
Exterior
Interior
Span
Width
W or Fink truss
Run
Rise
Gussets
Load bearing partitions
Bottom chord
Fabrication
Camber
Joint slippage
Nailing patterns
Plywood gussets
Full-size layout
Align
Web members
Prefabricated
Ring connectors
warped
Special jig table

Quantitative Concepts

24 inch on center, 16 inch on center

Midpoint of span, i.e. 24' truss, 1/2" camber

Suggestions:

- Practice estimating camber for truss measurements.
- Be careful in using words with multiple meanings when talking to lip reading deaf students.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Visit a building site during roof truss erection.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Attach roof sheathing

Code: CON - RC29

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify different types of roof sheathing materials: a. plywood b. shiplap c. common boards. 2. demonstrate basic procedures/techniques for attaching roof sheathing materials: a. erect scaffold for holding sheets. b. nail sheathing in place with joints at center of rafters with 8d nails. c. lay face grain of plywood sheathing perpendicular to rafters. d. fit and cut sheathing in valleys and hips.	• Students simulate sheathing of roof and roofing on scale model of house corner section. • Students review manufacturer's booklets and illustrated text materials. • Teacher matches successful students who are interested in helping those having difficulty. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,6,9 NUMBERS B 2b,4a,i,5 APPLICATION C 5 PHYSICAL D 1a,d,e 2d 3a,b,c,d, e,f,g	Roofing manufacturer's booklets	13	
	Modern Carpentry	13	22

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC29 * K: Attach roof sheathing

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	**Quantitative Concepts**	
Nailing patterns Scaffold End matched boards Valleys Hips Flashing materials Swelling Shrinkage Face grain Staggered arrangement	Recognize and discuss 8d nails and ring nails. Determine the thickness of plywood for various rafter spacings and shingle types. Discuss the concepts of boards being flush and to allow space for swelling due to temperature changes.	• Collect samples of various sheathing materials so students are aware of sheathing materials, i.e. plywood, shiplap and other special materials. • Informally encourage voluntary buddy system for assisting deaf students (individualize without calling attention to the individual).

Supportive Instructional Materials:

Consult with vocational instructor for samples of currently used roof sheathing materials.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Install asphalt roofing materials

Code: CON - RC30

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will :

1. identify common asphalt roofing products:
   a. saturated felt
   b. roll roofing
   c. shingles.

2. describe the specific nomenclature for applying roofing materials:
   a. head lap
   b. side lap
   c. exposure.

3. perform the following job skills for installing roofing materials with accuracy to meet manufacturer's specifications:
   a. applying underlayment (felt)
   b. applying drip edge
   c. installing flashing at eaves
   d. installing flashing at roof valley
   e. installing chimney flashing
   f. installing vent stack flashing
   g. installing specific styles of shingles
   h. installing wood shingles.

4. safely operate a power stapler in applying roofing materials.

Instructional Methods

- Teacher provides demonstration of procedures and techniques for installation of all types of asphalt roofing products.
- Students shingle mock-up roof structures in lab.
- Students review illustrated procedures/techniques in texts.
- Teacher makes contact with <u>each</u> student during the class period.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE			
A 5,6,7,9	<u>Modern Carpentry</u>	13	22
NUMBERS			
B 2,4a	"Asphalt-Its Composition, Properties, and Uses"	13	56
APPLICATION			
C 5,8			
PHYSICAL			
D 1a,c,d,e 2c 3--			

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC30 TASK: Install asphalt roofing materials

Basic Information for Cooperative Teaching

Language of the Task

Valleys

Hips

Gables

Flashings

Drip cap

Vent and stack

Galvanized nails

Course

Felt paper

Ridge cap

Chalk line

Framing square

Utility knife

Starter strip

Quantitative Concepts

Recognize and interpret the following:
square = 100 sq ft
weight 240 lbs
bundle = 1/3 square
33 1/3 sq ft = 80 lbs

Estimate the number of pounds of nails per square of shingles.

Recognize various lengths of nails: 3/4" - 1 3/4" as well as types of nails i.e., roofing, galvanized, lead-headed.

Suggestions:

- Discuss the need for using soft sole shoes (tennis shoes are excellent).
- Drill deaf student extensively on language of the task.
- Be careful in using words with multiple meanings when talking to lip reading deaf students.
- Display and discuss commercial or teacher-made illustrations. Note: shingle bundles have good illustrations.

Supportive Instructional Materials:

Collect various samples of shingles.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in installing vapor barrier

Code: CON - RC31

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. describe the basic purpose of vapor barrier. 2. identify specific vapor barrier materials: a. asphalt coated paper b. aluminum foil c. polyethylene films. 3. perform the following job skills with accuracy to meet construction code specifications: a. apply vapor barrier materials around door and window openings, boxes, outlets, etc. b. apply vapor barrier materials to wall sections following installation of heat ducts, plumbing, and electrical wiring.	• Local insulation installer visits class to describe and demonstrate different processes. • Students review illustrated text materials and charts. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1	Maximum Control Temperature Barrier Material	13	38
NUMBERS B 4a	"Criteria for Selection and Design of the Residential Slab on the Ground"	13	38
APPLICATION C 5	Thermal insulation thickness (charts)	16	38
PHYSICAL D 1a,d 2b 3 —			

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC31 TASK: Assist in installing vapor barrier

Basic Information for Cooperative Teaching

Language of the Task

Vapor

Barrier

Warm-side

Inside surface

Moisture penetration

Asphalt-coated paper

Aluminum foil

Polyethylene film

Quantitative Concepts

Square feet

Linear feet

Determine the number of square yards of vapor barrier material needed to cover a wall frame 8'x24'.

Determine the number of square yards of vapor barrier in a roll.

Suggestions:

- Pour hot liquid in cup, cover with clear plastic food wrap to show principle of a vapor barrier.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Install batt and blanket insulation

Code: CON - RC32

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. describe the basic types of batt and blanket insulation.
2. select and operate tools for cutting and installing batt and blanket insulation:
   a. fine tooth, crosscut saw
   b. shears
   c. large knife
   d. pneumatic stapler.
3. perform the following job skills in installing blanket insulation:
   a. unroll blanket on floor and cut to required length.
   b. staple top end to plate.
   c. staple down each side along studs.
   d. staple bottom edge to sole plate.
4. perform the following job skills in installing batt insulation:
   a. place unit at the bottom of the stud and press into place.
   b. start the second batt from top.
   c. butt units together at midpoint.
   d. overlap vapor barrier 1" to hold in place.
5. demonstrate procedures/techniques for installing insulation in:
   a. wall section
   b. ceiling
   c. under cross bridging
   d. around outlet openings and plumbing pipes.

Instructional Methods

- Students install insulation in a full-size wall section mock-up.
- Students review booklets illustrating the procedures/techniques of installation.
- Teacher encourages small peer group cooperation and interaction.
- Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 7,9	"Fiberglass Insulation"	13	41
NUMBERS B 2a,4a	"Fiberglass Insulation"	13	28
APPLICATION C 5			
PHYSICAL D 1a,b,d 2c, 3—			

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC32 TASK: Install batt and blanket insulation

Basic Information for Cooperative Teaching

Language of the Task

Blanket

Roll

Batt

Fiberglass

Thermal

B.T.U.

Pneumatic stapler

Hand stapler

Air space

Vapor barrier

Quantitative Concepts

14 1/2" blanket fits between studs which are 16" apart on center (oc)

50' rolls will cover 6 vertical stud spaces.

Define British Thermal Units (B.T.U.).

Suggestions:

- Visit building sites.
- Construct mock-up of installation job.
- Display samples of various types of insulation.
- Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Install reflective insulation

Code: CON - RC33

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify specific forms of reflective insulation materials: a. single sheet b. blanket. 2. name two methods of installation of reflective insulation. 3. describe the air space requirements for: a. vertical wall sections. b. ceilings and floors. c. specific manufacturer's recommendations.	• Students install reflective insulation in a full-size wall section mock-up. • Students review manufacturer's booklets and charts illustrating installation procedures/techniques. • Teacher encourages small peer group cooperation and interaction. • Teacher concentrates his effort with students having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 7,9 NUMBERS B 2a,4a APPLICATION C 5 PHYSICAL D 1a,b,d 2c 3	"Reflective Insulation"	13 16	1

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC33 TASK: Install reflective insulation

Basic Information for Cooperative Teaching

Language of the Task

Blanket

Roll

Batt

Fiberglass

Thermal

B.T.U.

Pneumatic stapler

Hand stapler

Air space

Vapor barri r

Quantitative Concepts

14 1/2" blanket fits between studs which are 16" apart on center (oc).

50' rolls will cover 6 vertical stud spaces.

Define British Thermal Units (B.T.U.).

Suggestions:

- Visit building sites.
- Construct mock-up of installation job.
- Display samples of various types of insulation.
- Drill deaf student extensively on lanugage of the task.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Install fill insulation

Sheet 1 of 1

Code: CON - RC34

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. recognize the methods of installation of fill insulation: a. pouring b. blown-in. 2. describe the uses/applications of fill insulation: a. ceilings b. blown-in walls of permanent structure c. poured in core of block walls. 3. demonstrate the basic procedure for installing fill insulation: a. empty bag contents between joists or studs, over vapor barrier material. b. in ceiling application, level fill between joists with straight edge.	• Teacher encourages small peer group cooperation and interaction. • Students view film loop. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,9 NUMBERS B 2b,4b APPLICATION C 5 PHYSICAL D 1a-f, 2d, 3 —	"Insulators and Conductors"	9	6

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC34 TASK: Install fill insulation

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	• Teacher and deaf student should cooperatively develop some simple signs related to language of the task. • Handle and discuss fill insulation material.
Pour bag Blown-in (commercial) Ceilings Joist-space Vapor barrier Masonry cavity Thermal resistance Insulation	Cubic feet 8" block U factor-standard Determine the number of cubic feet of insulation material in bags of different sizes. Calculate the number of cubic feet of material needed to distribute 6" deep over a given area.	

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in installing rigid insulation

Code: CON - RC35

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. describe the forms of rigid insulation materials: a. insulating board 1) exterior walls 2) roof sheathing b. glass fiber and foamed plastic 1) concrete slab floors 2) masonry walls 2. demonstrate the procedures for installing rigid insulation: a. nail to exterior wall or roof studs b. lay under slab flooring before pouring of slab c. bonding to exterior of masonry wall with mastic.	• Students view film and filmstrip. • Students follow a teacher demonstration with hands-on" supervision. • Students install rigid insulation on full size wall section mock-up in the construction lab.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 9 NUMBERS B 4a,5 APPLICATION C 5,8 PHYSICAL D 1a,b,d,e 2d 3	"Lifetime Protection"	8	14
	"Building the Shell"	10	45

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC35 TASK: Assist in installing rigid insulation

Basic Information for Cooperative Teaching

Language of the Task	Quantitative Concepts
Foam Ceilings Basement walls Basement floors	Measure thickness in inches from 1"-4" thick. Multiply lengths times widths to find square foot areas since rigid insulation is sold by the sq/ft. Determine thickness of rigid insulation material for a given applicatio . Determine the number of square feet in a 4'x8' sheet of rigid insulation.

Suggestions:

- Consult Building Trades instructor for samples for identification and measurement.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.

Supportive Instructional Materials:

Scraps supplied by local supplier or vocational instructor

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in applying or installing acoustical insulation materials

Code: CON - RC36

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify the different types of acoustical insulation materials: a. glass wool b. sound deadening board c. felt, metal, rubber strips d. spring clips e. resilient clips. 2. describe the different applications for acoustical materials: a. door/window jambs b. flooring c. ceiling joists. 3. perform the following job skills in installing acoustical insulation materials: a. install sound deadening board to underside of floor joists. b. install spring clips and resilient clips to space sheathing materials from main studs or joists. c. lay glass wool over subflooring and floating finish floor with sleepers. d. install felt, metal, or rubber strips in door and window jambs.	• Representative from an acoustical manufacturing company (Upson or Homasate) speak to the class demonstrating the application of samples of acoustical insulation materials. • Students review illustrative manufacturer's booklets on acoustical insulation materials. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 9 NUMBERS B 4a,5 APPLICATION C 5,8 PHYSICAL D 1a,b,c,d,e 2d 3	"Sound Ending Board"	13	24
	"Acoustical Insulation Materials"	13	52

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC36 TASK: Assist in applying or installing acoustical insulation materials

Basic Information for Cooperative Teaching

Language of the Task

Glass wool
Fibrous
Stapling
Rigid
Poured
Vapor barrier
Exterior wall
Fiber glass
Foamed plastic
Crawl space
Air leakage
Weather stripping
Batts
Masking
Double walls
Acoustical plastic
Suspended ceiling

Quantitative Concepts

Calculate areas in square feet which represent a typical wall or ceiling.

Suggestions:

- Drill deaf students extensively on language of the task.
- Describe advantages of acoustical insulation.

Supportive Instructional Materials:

Collect samples for discussion.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Recognize types and parts of windows

Code: CON - RC37

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify by name specific types of windows:
   a. sliding
      1) double hung
      2) horizontal sliding
   b. swinging
      1) casement
      2) awning
      3) hopper
      4) multiple use
   c. fixed
      1) jalousies
      2) fixed windows.

2. identify and describe the position of parts of a window:
   a. sill
   b. jamb
   c. casing
   d. drip cap
   e. stool
   f. apron
   g. side stile
   h. rail.

Instructional Methods

- Teacher develops activity/quiz worksheet on identification of windows and their component parts.
- Students review window literature from manufacturer.
- Students simulate installation of windows on wall section with rough window opening in construction lab.
- Teacher encourages small peer group cooperation and interaction.

Note: This task is performed as a part of the following task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE			
A 1,9	"Window Details"	12	13
NUMBERS	Window manufacturer's literature	13	
	Anderson Corp.		
	Malta Windows		
APPLICATION	Rimco Co.		
PHYSICAL			

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC37 TASK: Recognize types and parts of windows

Basic Information for Cooperative Teaching

Language of the Task

Sliding
- double hang
- horizontal

Swinging
- vertical-casements
- horizontal-awnings
- hoppers

Fixed
- jalousies

Mullions

Cranking mechanisms

Latches

Screen and storm sash

Outside clearance

Lock handle

Weather tightness

Window well

Window sill

Glass
- single strength
- double strength
- tempered
- thermopane

Quantitative Concepts

Consult with vocational instructor about standard window height i.e. 36", 42", 48", and standard window widths i.e. 18", 24" as they relate to various types of windows.

Suggestions:

- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.
- Visit a building materials supplier to discuss various types and standard sizes of windows.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in setting windows

Code: CON - RC38

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. perform the following job skills while installing and setting windows: a. unpack from carton and inspect for shipping damage. b. check rough opening for size. c. prime window before installation. d. place window in openings and temporarily secure in place. e. adjust wedges so frame is level. f. nail through the lower end of the side casing to secure bottom in place. g. drive nails temporarily into top of side casing. h. check for sag in the head or bow. i. nail window permanently into place with aluminum or galvanized casing nails, spaced 16" o.c. j. use a nail set in setting nail heads below surface in window frame material.	• Students simulate installation of windows on a full-size wall section with rough window opening in the construction lab. • Students review window manufacturer's literature. • Teacher concentrates his effort with students having difficulty. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,3,9 NUMBERS B 4a,i,5 APPLICATION C 5,7,8 PHYSICAL D 1a,b,e 2c 3a,b,c,f,g	Window manufacturer's literature Anderson Corp. Malta Windows Rimeo Co.	13	

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC38 TASK: Assist in setting windows

Basic Information for Cooperative Teaching

Language of the Task

Plumb

Diagonal braces

Spacer strips

Primed

Weather stripping

Sag

Galvanized casing nails

Polyethylene film

Fixed units

Sash

Glazing

Insulating glass

Quantitative Concepts

Discuss the concepts of level and plumb as they relate to installing windows.

Simulate centering a window in a rough opening, i.e. 36" window centered in a 37 1/2" rough opening.

Common trademarks/tradenames
- Thermalpane
- Pilla
- Twindow
- Anderson Windowalls

Suggestions:

- Collect installation instructions to discuss so students will recognize and follow common manufacturer's directions.
- Discuss the principles of judging length of nails for penetration.
- Discuss reasons for using an insulated window.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.

Supportive Instructional Materials:

Collect 16d finishing nails.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in installing door frames

Code: CON - RC39

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify the different parts of the door frame.

2. perform the following job skills while installing door frames:
   a. cut out sill area if necessary to fit.
   b. place frame in opening, center it horizontally, and secure with temporary brace.
   c. drive a nail through the casing into the wall frame at the bottom of each side.
   d. insert blocking or wedges between the studs and the top of the jamb.
   e. place additional wedges between the jambs and the stud frame at the location of the lock strike and hinges.
   f. secure the wedges by driving a nail through jamb, wedge, and into the stud.
   g. nail casing in place with nails located 16" o.c.

Instructional Methods

- Students simulate installation of rough door openings in mock wall section in lab.
- Students review illustrated text materials and transparencies.
- Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE			
A 2,3,9	"Door Construction"	12	56
NUMBERS	Modern Carpentry	13	22
B 4a,i, 5	Door Details	13	35
APPLICATION			
C 5,7,8			
PHYSICAL			
D 1a,b,e			
2c			
3a,b,c,f,g			

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC39 TASK: Assist in installing door frames

Basic Information for Cooperative Teaching

Language of the Task

Clear pine or redwood

Brick mold

Casing nails

Header

Hambs

Sills

Rabbet joint

r.o. (rough opening)

Blocking

Level

Casing

Threshold

Pre-hung

Heat loss

Condensation

Level

Square

Plumb

o.c. (on center)

Hammer marks

Quantitative Concepts

Discuss various common door sizes, i.e.
exterior doors (6'8" high, 7' available)
main entrance door(3'0" wide)
service and rear(2'8" and 2'6")
FHA minimum (2'6" wide)

Recognize various sizes of finishing nails, i.e. 10d, 12d, 16d.

Suggestions:

- Stress the importance of being extremely accurate and if there are any questions, ask advice before doing a job.
- Emphasize that hammering must be 100% accurate since missing the nail leaves "hammer marks" on finished surfaces.
- Informally encourage voluntary buddy system for assisting deaf students (individualize without calling attention to the individual).

Supportive Instructional Materials:

Collect 16d finishing nails.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Install a garage door

Code: CON - RC40

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify by name and describe the location of different parts of a garage door and frame.
2. identify the different types of garage doors.
3. perform the following job skills while installing a garage door:
   a. tack stops temporarily in place.
   b. assemble door sections in opening and attach hinges.
   c. attach rollers to door.
   d. place track on rollers and attach track to jamb.
   e. attach horizontal track sections.
   f. raise and prop door in open position.
   g. attach counterbalancer.
   h. open and close door, making adjustments.
   i. reset stops.

Instructional Methods

- Students organize a field trip to garage door construction company.
- Students view garage door installation.
- Students review and discuss installation instructions supplied by various manufacturers.
- Teacher makes contact with <u>each</u> student during the class period.
- Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,3,9 NUMBERS B 4a,i, 5 APPLICATION C 5,7,8 PHYSICAL D 1a,b,e 2c 3a,b,c,f,g	"Garage Door Information and Details" (pamphlet)	13	23

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC40 TASK: Install a garage door

Basic Information for Cooperative Teaching

Language of the Task

Swing up

Roll up

Counterbalancing

With or without windows

Fiberglass

Wooden

Contemporary

Traditional

Jambs

Header

Remote control

Torsion spring

Mill work order

Masonry

Log screw

Carriage bolt

Head room height

Inside head room height

Track

Extension spring

Quantitative Concepts

Recognize FHA minimum standards:
- width 8'
- height 6'4" (single)
- common width 9'
- two car width 16'
- standard heights 6'8" or 7'

Practice making accurate (within 1/16") measurements in the range of 6' to 9'.

Suggestions:

- Drill deaf student extensively on language of the task.
- Reinforce the importance of being accurate since installing the garage door is a finishing operation.
- Since appearance and accuracy are important qualities, ask questions when there is lack of understanding.

Supportive Instructional Materials:

Collect installation instructions from local supplier or the vocational instructor.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Construct rake and cornice sections

Code: CON - RC41

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name the components of a rake and cornice section: a. lookout b. soffit c. fascia d. ledger e. frieze f. plancier g. soffit vent. 2. perform the following job skills in framing in a rake and cornice section: a. nail a ledger along a predetermined line. b. cut the lookouts (2x4 material) to length. c. install lookouts by nailing to rafter and toe nailing to ledger. d. cut soffit material to size and nail or screw to lookouts with rust-resistant fasteners. e. install screened slots or vents in soffit to provide for air circulation.	• Students simulate construction of rake and cornice section on scale model or wall section mock-up. • Teacher provides demonstration of rake and cornice construction techniques using transparencies. • Students review illustrated materials. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 2,3,9 NUMBERS B 4a,i, 5 APPLICATION C 5,7,8 PHYSICAL D 1a,b,e 2c 3a,b,c,f,g	Modern Carpentry	13	22
	Audel's Builder's Manual	13	32
	"Roof Construction"	12	29
	"Aluminum Soffit and Fascia System"	13	1

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC41 TASK: Construct rake and cornice sections

Basic Information for Cooperative Teaching

Language of the Task

Cornice trim boards
Breezeway
Cornice-eave
Boxed cornice designs
Rafters
Underside
Overhangs
Rake
Trim members
Fascia
Ledger strip
Lookouts-nailers
Nailing strip
Mineral fiber board
Boxed rake section
Roof sheathing
Exterior trim
Caulking compounds
Chalkline
Toe-nailing
Gable

Quantitative Concepts

Recognize and select 1/2", 3/8", and 1/4" thick plywood samples.

Discuss the "on-center" concept.

Simulate nail spacing at 6" intervals.

Identify a miter joint as being cut at a 45° angle.

Suggestions:

- Attention to details and accuracy is of extreme importance.
- Informally encourage voluntary buddy system for assisting deaf students (individualize without calling attention to the individual).
- Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

Collect samples of plywood of various thicknesses.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Install horizontal siding

Code: CON - RC42

Student Name: _____

Student Progress: Introduced | Involved | Productive | Employable

Behavioral Task Knowledges/Task Skills

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify by name the types of horizontal siding:
   a. clapboards
   b. bevel siding
   c. rabbeted bevel siding
   d. rustic
   e. drop.
2. identify the common sizes of siding:
   a. nominal size (width)
   b. dressed dimensions:
      1) standard thickness
      2) standard face width.
3. install flashing around openings with:
   a. copper-coated paper
   b. polyethylene film.
4. perform the following job skills for the installation of horizontal siding:
   a. transfer each of the markings on the story pole to each inside and outside corner to be sided.
   b. nail a spacer strip along the foundation line.
   c. apply the first piece, allowing bottom edge to overlap strip.
   d. nail metal corners to inside corners of outside walls.
   e. nail metal corner caps over outside corners.
   f. cut and closely fit siding.
   g. caulk or treat siding with perservative after attached.

Instructional Methods

- Siding company sales representative visits class to discuss characteristics of siding materials.
- Students simulate installation of horizontal siding on a scale model or mock wall section in the lab.
- Students review manufacturer's brochures and information.
- Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,2,6,9 **NUMBERS** B 4a,i **APPLICATION** C 5 **PHYSICAL** D 1a,d,e 2a 3a,b,c,f,g	Manufacturer's booklets on siding materials Armstrong Co. Insulite Co. Monsonite Co.	13	

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC42 TASK: Install horizontal siding

Basic Information for Cooperative Teaching

Language of the Task

Sheathing

Sheathing paper

Asphalt saturated felt

Drip edge

First course

Vapor barrier

Flashing

Drip caps

Head flashing

Soffit

Jambs

6 mill polyethylene film

Beveled

Square butt joints

Scaffolds

Drip edge

First course

Lapped

Story pole

Notching

Chalk line

Aluminum

Zinc coated

Non-corrosive

Countersunk

Successive

6d nails

7d nails

Quantitative Concepts

Discuss the concepts of (vertical) plumb and (horizontal) level.

Practice linear measurements from 8'-12' with 1/8" accuracy.

Select rust proof nails.

Suggestions:

- Since siding is to minimize the air leakage and moisture passage, the installation procedures must be followed conscientiously.
- Drill deaf student extensively on language of the task.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.

Supportive Instructional Materials:

Collect samples of horizontal siding materials.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 2 of 2

TASK: Install horizontal siding

Code: CON - RC42

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 5. describe and demonstrate the following special techniques for nailing siding: a. types of nails to use: 1) zinc coated 2) aluminum 3) non-corrosive. b. face nail siding to each stud: 1) 6d nails 2) 8d nails. c. location of nails: 1) 1/2" above the butt edge or 2) nail just above lap edge. d. drill holes if siding material splits.	

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE			
NUMBERS			
APPLICATION			
PHYSICAL			

SUBCLUSTER:

Code: ___ - ___ TASK:

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Install vertical siding

Code: CON - RC43

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name different types of vertical siding: a. board and batten b. matched boards c. patterned boards. 2. perform the following job skills for installing vertical siding: a. install matched vertical siding with 8d nails less the four feet apart. b. undercut boards to form drip cap. c. nail batten strips to only one side of siding board to permit expansion and contraction.	• Students simulate installation of vertical siding on scale model or wall section mock-up in lab. • Teacher demonstrates procedures for installing vertical siding at a building site. • Teacher concentrates his effort with students having difficulty. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,6,9 NUMBERS B 4a,i APPLICATION C 5 PHYSICAL D 1a,d,e 2a 3a,b,c,f,g	Siding manufacturer's booklets	13	

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC43 TASK: Install vertical siding

Basic Information for Cooperative Teaching

Language of the Task

Gable ends

Outercoursing

Undercoursing

Expansion

Contraction

Adjacent

Vertical

Random boards

Batten strip

Triple starting course

Backer blocks

Starter course

Undercut

Waterdrip

Composition material

Quantitative Concepts

Practice making measurements from 1" to 12" with accuracy to 1/16" and measurements from 8' to 12" with accuracy to 1/4".

Prepare to sort and drive 3d, 6d, 8d, finishing nails.

Compute areas in square feet.

Suggestions:

- Read and interpret a set of manufacturer's directions.
- Discuss different wall finishes for different needs i.e. climate, durability, cost, creative and critical thinking in judgment.
- Emphasize the importance of nailing accuracy since missing the nail may cause "hammer marks" on a finished surface.
- Informally encourage voluntary buddy system for assisting deaf students (individualize without calling attention to the individual).
- Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

Collect various sizes of finishing nails and different types of vertical siding.

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in installing siding systems

Code: CON - RC44

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify the basic types of systems: a. lap b. aluminum fastener. 2. demonstrate the installation of the lap joint system: a. bottom strip of a piece of siding hooks over the top of the previously applied course. b. nail piece in place at top through pre-drilled holes. c. drill metal joint molding in place with hammer. d. caulk joints. 3. demonstrate the installation of an aluminum fastener system: a. attach a metal starter strip to the bottom of the sheathing or sill plate. b. top edge of siding is nailed in place with a special metal fastener every 16". c. bottom edge of attached piece is driven into prong of fastener underneath by placing a softwood block over the position and striking with a hammer.	• Instructor provides actual experience with on site siding installation. • Students simulate the assembly and installation of a siding system donated from a local business on a wall section mock-up in the lab. • Students survey literature to review different types of systems. • Teacher makes contact with <u>each</u> student during the class period. • Teacher matches successful students who are interested in helping those having difficulty. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,9 NUMBERS B 4a APPLICATION C 5 PHYSICAL D 1a,b 2c 3a,b,c,f,g	Siding system manufacturer's literature Major Materials, Inc. Byrd Corp.	13	

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC44 TASK: Assist in installing siding systems

Basic Information for Cooperative Teaching

Language of the Task

Mounting strip

Joint molding

Vertical siding

Starter strip

Batten strip

Hardboard batten backers

Aluminum siding

Baked-on enamel

Alloy

Gauge

Inter-locking

Grounding

Vinyl siding

Outside corner post

Quantitative Concepts

Discuss the concepts of level (horizontal) and plumb (vertical).

Practice measuring distances from 1 to 8 feet with accuracy of 1/4".

Sort rustproof nails from common nails of the same size.

Suggestions:

- Discuss the need for grounding the siding to prevent possible electrocution with electrical tools and aluminum siding.
- Handle and inspect various siding materials to generate discussion related to appearance, durability, cost, etc.
- Discuss the significance of consumer protection agency approval of siding system products, i.e. UL (Underwriters Laboratory).
- Discuss and interpret [illegible] manufacturer's assembly [illegible].
- Speak distinctly and [illegible], use simple sentences, and look directly at lip reading deaf students.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.

Supportive Instructional Materials:

Various siding materials and nails collected from local suppliers or vocational instructor
Tape measure or folding rule

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Install gutter systems

Code: CON - RC45

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify specific gutter system components: a. K-gutter b. square downspout c. K-miter 1) inside 2) outside d. slip joint connector e. end cap f. elbow g. outlet tube h. K-strainer i. pipe band j. fascia hanger k. spike or ferrule. 2. recognize the basic purpose of gutter system control roof drainage. 3. select the tools for assembling gutter systems: a. pop rivets b. sheet metal screws c. screw drivers d. hammer (claw). 4. perform the foliowi..g job skills with accuracy to meet manufacturer's specifications: a. assemble slip joints b. attach hangers to fascia c. attach cutters to hangers.	• Students view film and review illustrated text materials. • Students practice assembly/installation of gutter system on wall section mock-up. • Teacher develops activity/quiz on identification of system components. • Students follow a teacher demonstration with "hands-on" supervision. • Teacher encourages small peer group cooperation and interaction.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 3,6,7,9 NUMBERS B 4a APPLICATION C 5 PHYSICAL D 1a,d,e 2b 3	Modern Carpentry	13	22
	"Rain Carrying Equipment"	8	1

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC45 TASK: Install gutter system

Basic Information for Cooperative Teaching

Language of the Task	Quantitative Concepts
Downspout Elbow Gutter Nail ferrule Hanger strap Slip joint Sealer Aluminum Pre-finish End cap Inside/outside corners Pop-rivets	Practice measuring from 2' to 8' in length with 1/4" accuracy. Recognize 6' and 5' lengths. Determine the total length of gutter needed for the specific project the student is working on in the construction lab.

Suggestions:

- Visit a construction site where gutters are being installed.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Teacher and deaf student should cooperatively develop some simple signs related to language of the task.
- Be careful in using words with multiple meanings when talking to lip reading deaf students.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 2 of 2

TASK: Install gutter systems

Code: CON - RC45

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: d. assemble components with pop rivets or sheetmetal screws. e. slope system for drainage (calculation and layout).	

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE			
NUMBERS			
APPLICATION			
PHYSICAL			

SUBCLUSTER:

Code: ___ - ___ TASK:

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Prepare a brick veneer finish

Code: CON- RC46

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced	Involved	Productive	Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify and describe the location of components for brick veneer finish: a. metal ties b. air space c. base flashing d. weep holes. 2. describe the different types of veneer exterior finishes: a. brick b. concrete units c. stone. 3. demonstrate basic techniques in preparing a brick veneer facing: a. install base flashing over top of foundation and 12" up on sheathing. b. lay bricks on top of foundation with: 1) weep holes in bottom row for drainage. 2) 3/4" air space between sheathing and brick. 3) metal tie strips to secure brick facing to framework.	• Teacher and/or resource person provides a demonstration of the procedures for preparing a brick veneer finish. • Students lay up corners and other small brick projects in the construction lab. • Students review project booklets and select a group activity project. • Teacher matches successful students who are interested in helping those having difficulty. • Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,9 NUMBERS B 4a,i APPLICATION C 5,7 PHYSICAL D 1a,b 2c 3a,b,c,f,g	"Brick Laying" "Brick Laying-Vocational Training Trade Projects" (series of booklets)	12 13	29 48

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC46 TASK: Prepare a brick veneer finish

Basic Information for Cooperative Teaching

Language of the Task	Quantitative Concepts
Veneer Masonry Metal lath Base flashing Louvers Air space	Discuss the concepts of level (horizontal) and plumb (vertical).

Suggestions:

- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Simulate brick laying arrangements with toy (plastic) bricks or rectangular sugar cubes.

Supportive Instructional Materials:

Collect samples of bricks for stacking

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Recognize interior finishing operations

Code: CON - RC47

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify and describe the sequence for the following interior finishing operations:
   a. plaster
   b. drywall
   c. lath
   d. plaster grounds
   e. interior fasteners
   f. paneling
   g. furring
   h. ceiling tile
   i. suspended ceiling
   j. partical board
   k. base
   l. casing
   m. stair well
   n. stair stringer
   o. riser tread
   p. stair riser
   q. cove molding
   r. base shoe
   s. mullion casing
   t. wood flooring.

Instructional Methods

- Students label the interior components on a cut-away drawing.
- Students in small groups review a set of building specifications to determine the specification for each interior finish component on a wall section mock-up.
- Students practice coping joints.
- Students follow a teacher demonstration with "hands-on" supervision.
- Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE			
A 1-9	Modern Carpentry	13	22
NUMBERS	Wood Construction	13	32
APPLICATION			
PHYSICAL			

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC47 TASK: Recognize interior finishing operations

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	**Quantitative Concepts**	
Surfaces Materials Underlayment Baseboard Facing Drawers Trim Plastic laminate Hardware Base shoe	Recognize 6, 8, 10, 12 foot lengths as they relate to finish materials.	• Extreme care must be taken in handling, cutting, and fitting the finishing operations. • Be careful in using words with multiple meanings when talking to lip reading deaf students.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Assist in applying ceiling tile

Code: CON - RC48

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify the different types of ceiling tiles. 2. demonstrate the procedures for applying the following ceilings: a. ceiling tile: 1) space and nail furring strips 2) lay out ceiling 3) apply ceiling tile. b. suspended ceiling: 1) lay out ceiling 2) apply wall molding 3) install metal runner 4) set in panels.	• Students review ceiling tile manufacturer's booklets and brochures. • Ceiling manufacturer's representative can provide information and materials for a relevant instructional program. • Students follow a teacher demonstration with "hands-on" supervision. • Teacher encourages small peer group cooperation and interaction. • Teacher matches successful students who are interested helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1-9 NUMBERS B 4a, 5 APPLICATION C 5-7 PHYSICAL D 1a,b 2c 3a,b,c,f,g	Manufacturer's booklets	13	

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC48 TASK: Assist in applying ceiling tile

Basic Information for Cooperative Teaching

Language of the Task

Ceiling tile

Furring strips

Solid plaster

Plastic board

Pattern

Texture

Overlapping

Tongue

Groove edge

Flange

Staples

Adhesive

Quantitative Concepts

Recognize standard sizes of ceiling tile: 12"x12", 24"x24", 16"x32".

Suggestions:

- Know types of materials used to make ceiling tile selection based on qualities desired.
- Tactile experience with pattern and texture.
- Stress the importance of the final appearance.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf student.
- Be aware of the key word interpretation which lip reading deaf students make from your speech.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

TASK: Hang interior doors

Code: CON - RC49

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	
				Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. describe and demonstrate the following procedures for hanging an interior door: a. set jamb plumb and level b. hinge jamb c. fit door d. hinge door e. lock door f. mount door stop g. case off door.

Instructional Methods

- Teacher directs demonstration of a procedure for hanging an interior door.
- Students follow a teacher demonstration with "hands-on" supervision.
- Students hang interior doors on a plumb and square door frame previously assembled in the lab.
- Teacher encourages small peer group cooperation and interaction.
- Para-professionals provide sustained involvement with students having difficulty with this task.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 9 NUMBERS B 4a, 5 APPLICATION C 5,7 PHYSICAL D 1a,b 2c 3a,b,c			

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC49 TASK: Hang interior doors

Basic Information for Cooperative Teaching

Language of the Task

Partition	Gauge
Side jamb	Hinge jamb
Head jamb	Casing
Kerfed	Miter joint
Cupping (warping)	Straight edge
Bevel	Level
Panel door	
Flush door	
Sash door	
Louvered door	
Storm door	
Screen door	
Spacer blocks	
Spreader	

Quantitative Concepts

Identify appropriate size and types of nails.

Recognize and/or measure standard door sizes 2'8", 2'10", 3', etc.

Suggestions:

- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Informally encourage voluntary buddy system for assisting deaf students (individualize without calling attention to the individual).
- Extreme care must be taken in handling and installing doors to insure professional appearance.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Apply interior trim

Code: CON - RC50

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods
Introduced / Involved / Productive / Employable	Given the necessary tools, materials, equipment, and requisite knowledge, the learner will: 1. identify by name the different interior trim items. 2. demonstrate the appropriate procedures for installing each of the following interior trim items: a. base b. base shoe c. window stool d. window apron e. window casing f. ceiling cove g. stair risers h. stair treads.	• Teacher provides demonstration of installation of each item to individual students. • Students simulate the application of interior trim on mock-up wall sections in the construction lab. • Students review illustrated materials describing the task. • Teacher encourages small peer group cooperation and interaction. • Teacher matches successful students who are interested in helping those having difficulty.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,9 NUMBERS B 4a, 5 APPLICATION C 5,7 PHYSICAL D 1a,b 2c 3a,b,c	Practical House Carpenter	13	42
	Modern Carpentry	13	22
	Carpentry and Builder's Guide Vol. I.	13	25
	"Staircase Construction"	12	29

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC50 TASK: Apply interior trim

Basic Information for Cooperative Teaching		Suggestions:
Language of the Task	Quantitative Concepts	
Coped joint Base Double-hung window Sash Quarter round Caulking compound Miter Door and window molding Mullion trim Head casing Apron Base shoe Lacquer Varnish Resiliant tile	Measure 6' to 8' lengths within 1/16" accuracy. Recognize 45° angle cuts on matching pieces as miter joints.	• Drill deaf student extensively on language of the task. • Accuracy in cutting, nailing, and finishing are of extreme importance.

Supportive Instructional Materials:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Lay interior floors

Code: CON - RC51

Student Name: _____

Student Progress				Behavioral Task Knowledges/Task Skills
Introduced	Involved	Productive	Employable	

Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:

1. identify by name the common types of interior floors.
2. describe the advantages and disadvantages for each type of interior floor.
3. lay each of the following interior floors, following manufacturer's instructions and specifications:
   a. partical board
   b. wood strip flooring
   c. wood block flooring
   d. tile
   e. others.

Instructional Methods

- Students simulate laying different floors in a mock-up of different house rooms.
- Factory representatives for flooring companies talk to class describing and demonstrating new products.
- Students organize a trip to lumber company to check on floor covering materials.
- Students view slides, transparencies, and illustrated materials.

Task-Related Competencies	Instructional Materials		
	Title	Media	Bib.
KNOWLEDGE A 1,6,9 NUMBERS B 4a,i APPLICATION C 5 PHYSICAL D 1a,c,d,e 2a,b 3a,c,e,g	"Hardwood Floors"	13	9
	"Finishing Hardwood Floors"	14	37
	"Interior Building Maintenance for Homes"	11	36
	"Interior Trim"	12	29

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC51 TASK: Lay interior floors

Basic Information for Cooperative Teaching

Language of the Task

Planks (unit blocks)

Resiliant flooring

Asphalt tile

Vinyl-asbestos tile

Vinyl tile

Rubber tile

Linoleum

Ceramic tile

Edge-grain surface

Tongue and grooved
(side and end matched)

Metal splines

Slate

Hardwood

Carpet

Quantitative Concepts

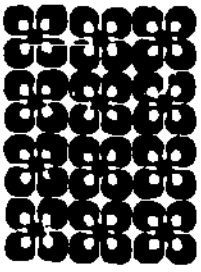
Calculate areas by multiplying lengths by widths of floor areas.

Suggestions:

- Discuss various kinds of flooring by viewing popular "Home Remodeling" magazines.
- Speak distinctly and slowly, use simple sentences, and look directly at lip reading deaf students.
- Drill deaf student extensively on language of the task.

Supportive Instructional Materials:

Collect "Better Homes" and "Home Remodeling" magazines with illustrated floor designs and various flooring materials.



INSTRUCTIONAL MATERIALS BIBLIOGRAPHY

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CONSTRUCTION CLUSTER

Bib. Ref. No.	Company Name/Address	Title
1.	Alcoa Aluminum Co. of America 1213 Alcoa Building Pittsburgh, Pa 15219	Reflective Insulation (booklets/charts) "Rain Carrying Equipment" (free loan) "Aluminum Soffit and Fascia System"
2.	American Floor Company (contact local lumber company for exact address of distributor)	Floor Maintenance "Machines at Work"
3.	American Iron and Steal Co. (contact local lumber company for exact address of distributor)	"Galvanized Steel Pipe for Plumbing" "Plumbing Traps and Vents"
4.	American Technical Society 848 E. 58th Street Chicago, Illinois 60637	Estimating for Building Trades Building Trades Blueprint Book, Parts I & II "Lumber Handling and Piling"
5.	Arco Publishing Company 219 Park Avenue, South New York, N.Y. 10003	"Modern Power Tool and Woodworking Book" How to Build Cabinets for A Modern Kitchen
6.	Armstrong Company (contact local lumber company for exact address of a distributor)	"Sheathing"
7.	Bailey Film Associates 11559 Santa Monica Blvd. Los Angeles, Ca 90025	"Power Tools"
8.	Bobbs Merrill Co., Inc. P.O. Box 693 Lansing, Michigan 48903	Plumbers and Pipefitters Library

9.	E.L. Bruce Co., Inc. 1700 Thomas Street Memphis, Tenn 38101	"Hardwood Floors"
10.	Cenco Educational Films 2600 S. Kostner Avenue Chicago, Illinois 60623	"Power Tools"
11.	Colonial-Williamsburg, Inc. Goodwin Building, Box C Williamsburg, Pa 23185	"Cabinetmaking"
12.	Cornell University Film Cemter Ithaca, N.Y. 14850	"Connecting Wires in an Outlet"
13.	DCA Educational Products, Inc. 4865 Stenton Avenue Philadelphia, Pa 19144	"Hand Saw Nomenclature" "Portable Drills" "Radial Saw" "Lumber Grades and Measurements" "Window Details"
14.	Dow Chemical Company 2030 Dow Center Midland, Michigan 48640	"Lifetime Protection"
15.	E.I. DuPont Co. 1007 Market Street Wilmington, Ce 19898	"Finishing Wood"
16.	Ealing Corporation 2225 Massachusetts Avenue Cambridge, Ma 02140	"Insulators and Conductors"
17.	Encyclopaedia Britannica Educational Corporation 425 N. Michigan Avenue Chicago, Illinois 60611	"Lumber for Houses"
18.	Eye-Gate House, Inc. Ronald Stevens 14816 Greenbriar Court Plymouth, Michigan 48170	"Building the Frame of A House"

19.	Franklin Walls, Inc. R. Spaulding Box 331 Comstock Park, Michigan 49321	First Book of Lumber
20.	GAF Corporation Reprographic Products 140 W. 51st Street New York, N.Y. 10020	"Framing for Openings" "Pouring the Footings" "Footing" "Rafter Construction"
21.	General Motors Corporation 3044 West Grand Blvd. Detroit, Michigan 48238	"ABC'S of Handtools"
22.	Goodheart-Wilcox Co., Inc. 125 W. Taft Drive South Holland, Illinois 60473	Modern Carpentry Cabinetmaking and Millwork
23.	Haas Door Co. (contact local lumber company for exact address of distributor)	"Garage Door Information and Details"
24.	Homasote Co. (contact local lumber company for exact address of distributor)	"Sound Ending Board"
25.	Howard W. Sams & Co., Inc. 4300 West 62nd Street Indianapolis, Indiana 46238	Carpentry and Builder's Guide, Volume I "Getting the Most from Your Home Power Tools" Building Maintenance Plumbing and Heating Janitor-Custodian
26.	Insulite Co. (contact local lumber company for exact address of distributor)	"Sheathing"
27.	Interstate Printers and Publishers, Inc. Danville, Illinois 61832	"Electrical Identification"
28.	Johns-Manville Company 22 E. 40th Street New York, N.Y. 10016	"Fiberglass Insulation"

29.	Minnesota Mining and Manufacturing Co. 2501 Hudson Road St. Paul, Minnesota 55404	"Brick Laying" "Staircase Construction" "Interior Trim" "Ceiling Frame" "Footings and Foundations" "Footing Design" "Block Laying" "Wall Framing" "Roof Construction"
30.	Maize Nails Co. (contact local lumber company for exact address of distributor)	"Correct Nailing" Wall Chart
31.	Masonite Corporation Dept. TR-10 Box 777 Chicago, Illinois 60690	"Sheathing"
32.	McGraw Hill Book Company Tom Troseth 2358 Crestview, S.W. Wyoming, Michigan 49509	Audel's Builder's Manual Audel's Electricity Motor Application and Maintenance "Layout Using Marking Gauge" "Care and Use of Table Saw" "Sectioning" Wood Construction
33.	McIntyre, Inc.	"Planes and Their Uses" "Common and Finish Nails"
34.	McKnight and McKnight Pub. Co. P.O. Box 854 Bloomington, Illinois	Architectural Drafting and Design
35.	Morgan Millwork Company 113 W. North Avenue Baltimore, Md 21201	Door Details
36.	NASCO National Agricultural Supply Co. Fort Atkinson, Wisconsin 53558	"Wiring for Your Home" "Interior Building Maintenance for Homes" "Kinds of Lumber" "Laying Out and Cutting Common Rafters" "Circuits"

37. National Paint and Varnish Co.
2835 E. Washington Blvd.
Los Angeles, California 90023

"Finishing Hardwood Floors" (pamphlet)

38. National Academy of Science
2101 Constitution Avenue, N.W.
Washington, D.C. 20418

Maximum Control Temperature Barrier Material
"Criteria for Selection and Design of the Residential Slab on the Ground"
Thermal Insulation Thickness (charts)

39. National Restaurant Association
Educational Department
1530 N. Lake Shore Drive
Chicago, Illinois 60610

Floors and Floor Maintenance

40. National Safety Council
425 N. Michigan Avenue
Chicago, Illinois 60611

"Lumber Handling and Piling"

41. Owens Corning Fiberglass Co.
Fiberglas Tower
Toledo, Ohio 43601

"Fiberglass Insulation"

42. Plenum Publishing Company
227 W. 17th
New York, N.Y. 10011

Practical House Carpenter Builder's Guide

43. Ronnel Truss Plates
(contact local lumber company for exact address of distributor)

Truss Design

44. Serina Press
70 Kennedy Street
Alexandria, Va 22305

"Carpentry Part I - Measuring, Marking, and Leveling Tools"

45. Society for Visual Education
1345 Diversey Parkway
Chicago, Illinois 60614

"Building the Shell"

46. Stanley Tools
600 Myrtle Street
New Britian, Conn. 06050

Charts

47.	Sterling Educational Films 375 Park Avenue New York, N.Y. 10022	"Plumbing Joints" "Power Drills for Wood-working" "Hammers and Nails" "Correct Use of Nails" "Glues and Clamps"
48.	Structural Clay Products Institute 1750 Old Meadow Road McLean, Va 22101	"Brick and Block Laying" "Brick Laying - Vocational Training Trade Projects"
49.	T.S. Dennison Publication Bordon Publishing Co. 1855 W. Main Street Alhambra, Calif. 91801	School Custodial Service Charts
50.	United Nations Sales Section, Publishing Service New York, N.Y. 10003	Rural Electrification
51.	Universal Education and Visual Arts 221 Park Avenue South New York, N.Y. 10003	"Woodworking-Part I" "Electrical Basic Wiring"
52.	The Upson Company 43 Upson Point Lockport, N.Y. 14094	"Acoustical Insulation Materials" (booklets)
53.	U.S. Department of Agriculture Motion Pictures Service Room 1850 South Building Washington D.C. 20250	"Foundations for Your Home"
54.	U.S. Plywood Association 1119 A Street Tacoma, Wa 98401	"Plywood Industry"
55.	U.S. National A.V. Center National Archives and Records Service Washington D.C. 20409	"3-Wire Service Entrance" "Roughing-in Non-Metallic Sheath Cable"
56.	Van Nostrad - Reinhold 300 Pike Street Cincinnati, Ohio 45202	"Door Construction" Dwelling House Construction Handbook of Adhesives "Asphalt-Its Composition, Properties, and Uses"

57.	Visual Instruction Productions 295 West Fourth Street New York, N.Y. 10014	"How to Use Measuring Tools" "Saw Operations" "Sharpening the Plane" "How to Use Hand Boring Tools"

APPENDIX

- INSTRUCTIONAL MATERIALS CODE
- TASK-RELATED COMPETENCIES CODE

INSTRUCTIONAL MATERIALS CODE

MEDIA CODE/INDEX

Code	Media	Probable Learning Sensations					
		Vis.	Aud.	Tac.	Kin.	Ole.	Sav.
1	Demonstration with real objects/materials	x	x	x	x	x	x
2	3-D models - Mockups	x	x	x	x	x	x
3	Games - Simulators	x	x	x	x	x	x
4	Sound/Slide Programs	x	x				
5	Filmstrip - Cassette/Record	x	x				
6	TV - Broadcast, Closed Circuit	x	x				
7	Video and/or Audio Recorder	x	x				
8	Film, 16mm - BW/Color, Sound	x	x				
9	Film loop, 8mm	x					
10	Filmstrip	x					
11	Slides	x					
12	Overhead transparencies	x					
13	Books, Magazines, Texts, Booklets	x					
14	Pamphlets, Brochures, Manuals, Workbooks	x					
15	Newspapers, Cartoons	x					
16	2-D Displays, Charts, Graphs, Posters	x					
17	Drawings, Photographs, Schematics, Maps	x					
18	Opaque Projectuals	x					
19	Telephone, Intercom		x				
20	Other, specify						

BIBLIOGRAPHY REFERENCE

. . . complete ordering information for each of the commercially or teacher-produced instructional materials may be obtained by checking this reference number in the Instructional Materials Bibliography located in the back of the Cluster Guide.

TASK-RELATED COMPETENCIES

The task-related competencies are a summation of the specific skills, understandings, and/or attitudes that are necessary to satisfactorily accomplish the instructional tasks found in the ten cluster guides. The following listing is used for interpreting the Task-Related Competency code numbers found on each task sheet. A more detailed description of each of the identified competencies can be found either in the Program Guide or the Project Handbook.

A. SKILLS BASED ON KNOWLEDGE

1. Name one or more items
2. Request supplies and/or equipment
3. Check for accuracy and, if necessary, require correction of self and/or others
4. Discriminate sound cues, recognize normal sound as opposed to abnormal sound
5. Identify color
6. Identify form, size, shape, texture
7. Sequencing - Respond by pre-determined plan
8. Write identifying information of persons, places, and/or objects, serial no., weight, and/or types of products on slips or tags, etc.
9. Obtain information through sight, shape, size, distance, motion, color, and other unique characteristics
10. Discriminate olfactory cues

B. CONCEPT OF NUMBERS BASED ON KNOWLEDGE

1. Ordinal
2. Cardinal
   a. read numbers and/or copy
   b. count and/or record
3. Make change (money)
4. Measure
   a. distance
   b. weights - volume - balance
   c. liquids - solids
   d. time (measurement of)
   e. degrees of circle
   f. temperature, pressure and humidity
   g. torque
   h. electricity
   i. vertical-horizontal
5. Perform simple addition and/or subtraction
6. Perform simple multiplication and/or division

TASK-RELATED COMPETENCIES, continued. . .

C. COMPREHENSION AND PERFORMANCE

1. Forms
   a. write
   b. file, post and/or mail
2. Match
   a. duplicate
   b. sort
3. Check lists and/or fill out report forms
4. Time awareness
5. Follow verbal symbol and/or written direction
6. Recognize words (not numbers) or ability to read and/or write
7. Depth perception
8. Ability to select most appropriate solution
9. Concept of distance

D. SKILLS BASED ON PHYSICAL ABILITIES

1. Fine Coordination
   a. coordinate eyes and hands or fingers accurately
   b. make precise movement
   c. move fingers to manipulate objects
   d. move hands skillfully - placing and turning motion
   e. coordinate hand and foot
   f. feeling - perceiving objects and materials as to size, shape, temperature, moisture content, or texture by means of touch
2. Strength (lifting, carrying, pushing, and/or pulling)
   a. sedentary work, 10# occasionally lifting and/or carrying small items such as tools, etc.
   b. light work, 20#, requires a significant amount of standing or walking
   c. medium work, lifting 50#, frequent lifting and carrying objects weighing 25#
   d. heavy work, frequent lifting and/or carrying up to 50#
   e. very heavy work - lifting objects in excess 100#, lifting and/or carrying objects weighing 50# or more
3. Gross Coordination (climbing and/or balancing)
   a. maintain body equilibrium to prevent falling when walking, standing, crouching, or running on narrow, slippery or moving surfaces
   b. ascend and descend ladders, stairs, scaffolding, ramps, poles, ropes, using feet and legs and/or hands and arms
   c. reaching - extending hands and arms in any directions
   d. crawling - moving on knees or hands and feet
   e. kneeling - bend legs at knees to rest on knee or knees
   f. stooping - bend downward and forward by bending legs and spine
   g. bending - downward and forward by bending at the waist