

Intermediate Graphic Communication

Curriculum Content Frameworks

Please note: All assessment questions will be taken from the knowledge portion of these frameworks.

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Intermediate Graphic Communication

Grade Levels: 10, 11, 12

Prerequisite: Fundamentals of Graphic Communication

Course Code: 493610

Course Description: Intermediate digital imaging, as well as platemaking techniques, offset press operation, basic workplace skills, and finishing and binding are presented in this course. This course is directed at building entry-level skills.

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Unit 1: Safety

Hours:10

Terminology: Decibel, Ergonomics, First aid, Flash point, Lockout, Machine guard, MSDS, OSHA, Personal protective devices, Safety color codes, Tag out, UV, Volatile Organic Compound (VOC's)

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
1.1 Define terms related to the safety	1.1.1 Apply terminology in appropriate situations	Foundation	Reading	Applies and understands technical words that pertain to safety [1.3.6]
			Listening	Comprehends ideas and concepts related to Graphic Communication [1.2.1]
			Writing	Uses words appropriately [1.6.21]
			Speaking	Applies/uses technical terms as appropriate to audience [1.5.2]
1.2 Discuss the use of personal protective equipment in Graphic Communication Safety class	1.2.1 Use personal protective equipment in a timely and appropriate manner	Foundation	Science	Uses equipment and techniques related to Graphic Communication [1.4.23]
		Interpersonal Skills	Teamwork	Contributes to group with ideas, suggestions, and effort [2.6.2]
1.3 Identify safety practices for various situations	1.3.1 Follow proper safety procedures for using fire extinguishers	Foundation	Science	Follows safety guidelines [1.4.15]
		Thinking	Knowing How To Learn	Applies new knowledge and skills to safety procedures [4.3.1]
	1.3.2 Follow environmentally friendly practices for use and disposal of materials	Foundation	Science	Analyzes environmental issues related to disposal of materials [1.4.2]
		Personal Management	Responsibility	Sets high standards for self in completion of a task [3.4.9]
	1.3.3 Follow proper safety procedures for all equipment	Foundation	Science	Follows safety guidelines [1.4.15]
		Personal Management	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]
	1.3.4 Follow proper safety procedures for ventilation	Foundation	Science	Follows safety guidelines [1.4.15]
		Personal Management	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
	1.3.5 Follow proper safety procedures for evacuation	Foundation Personal Management	Science Responsibility	Follows safety guidelines [1.4.15] Maintains a high level of concentration in completion of a task [3.4.7]
	1.3.6 Follow proper safety guidelines and procedures for injuries	Foundation Personal Management	Science Responsibility	Follows safety guidelines [1.4.15] Maintains a high level of concentration in completion of a task [3.4.7]
	1.3.7 Follow proper housekeeping procedures for classroom and lab areas	Personal Management	Integrity/Honesty/ Work Ethic	Complies with safety and health rules in a given work environment [3.2.2]

Unit 2: Workplace Skills Development

Hours: 15

Terminology: Ability, Copyright, Cover letter, Downtime, Interpersonal skills, Interview, Knowledge, KUDER, Leadership, Portfolio, Resume', Skill, Teamwork, Vendor, Workplace

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
2.1 Define terms related to workplace skills development	2.1.1 Apply terminology in appropriate situations	Foundation	Reading Listening Writing Speaking	Applies and understands technical words that pertain to workplace skills development [1.3.6] Comprehends ideas and concepts related to Graphic Communication [1.2.1] Uses words appropriately [1.6.21] Applies/uses technical terms as appropriate to audience [1.5.2]	
2.2 Reinforce basic interpersonal skills essential to workplace success	2.2.1 Review basic interpersonal skills essential to workplace success (timeliness, regular attendance, appropriate dress, personal cleanliness, workplace cleanliness, appropriate work ethics, communication, leadership, teamwork)	Interpersonal Skills Personal Management Personal Management Personal Management	Teamwork Integrity/Honesty/Work Ethic Responsibility Self-Esteem	Demonstrates understanding, friendliness, adaptability, empathy, and politeness in new and ongoing group settings [2.6.3] Describe/explain significance of integrity, honesty and work ethics [3.2.4] Is punctual to class, school meetings, and work [3.4.6] Comprehends the importance of a positive self-concept [3.5.1]	
2.3 Explain the connection between taking responsibility and success on the job	2.3.1 Evaluate the success of a particular project 2.3.2 Explain personal and organizational consequences of meeting or failing to meet performance requirements	Thinking Thinking Thinking	Reasoning Reasoning Creative Thinking	See relationship between two or more ideas, objects, or situations [4.5.5] Uses logic to draw conclusions from available information [4.5.6] Makes connections between seemingly unrelated ideas [4.1.6]	

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
2.4 Identify workplace skills systems relevant to the graphic communications industry	2.4.1 Discuss the importance of recognizing chain of command to workplace success	Thinking	Reasoning	See relationship between two or more ideas, objects, or situations [4.5.5]	
	2.4.2 Demonstrate recognition of authority	Personal Management	Integrity/Honesty/Work Ethic	Follows established rules, regulations, and policies [3.2.5]	
	2.4.3 Demonstrate the ability to utilize systems relevant to the graphic communications industry	Thinking	Knowing How To Learn	Uses available resources to apply new skills [4.3.6]	
2.5 Discuss the purpose of job evaluations	2.5.1 Identify major duties within each of the graphic communication areas.	Personal Management	Organizational Effectiveness	Comprehends the organization's modes of operation [3.3.6]	
2.6 Begin process for career planning	2.6.1 Begin career portfolio	Personal Management	Career Awareness, Development, and Mobility	Develops skills to locate, evaluate, and interpret career information [3.1.4]	
			Self-Esteem	Comprehends the importance of a positive self-concept [3.5.1]	
	2.6.2 Prepare job seeking documents	Personal Management	Self-Esteem	Presents positive image of personal attitudes and abilities [3.5.7]	
			Self-Esteem	Creates a positive self-image by selling self in a letter of application [3.5.2]	
	2.6.3 Develop a personal resume and cover letter	Personal Management	Self-Esteem	Develops self-confidence by creating a resume' which promotes personal strengths and abilities [3.5.5]	
			Self-Esteem	Comprehends the importance of a positive self-concept [3.5.1]	
2.6.4 Demonstrate interviewing skills	Personal Management	Self-Esteem	Comprehends the importance of a positive self-concept [3.5.1]		
2.6.5 Collect samples of work	Thinking	Decision Making	Evaluates information/data to make the best decision [4.2.5]		
2.6.6 Collect references, letters of recommendation, and documentation of certifications, honors, and awards	Personal Management	Self-Esteem	Presents positive personal references of education and work experience [3.5.8]		

Unit 3: Paper and Substrates

Hours: 10

Terminology: Basis weight, Bleaching, Coated, Grades, Index, Newprint, Offset paper, Pulp, Ream, Recycled, Sizing, Uncoated

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
3.1 Define terms related to paper and substrates	3.1.1 Apply terminology in appropriate situations	Foundation	Reading	Applies and understands technical words that pertain to paper and substrates [1.3.6]	
			Listening	Comprehends ideas and concepts related to Graphic Communication [1.2.1]	
			Writing	Uses words appropriately [1.6.21]	
			Speaking	Applies/uses technical terms as appropriate to audience [1.5.2]	
3.2 Review the use of substrates in printing	3.2.1 Collect various samples of substrates in printing	Thinking	Knowing How To Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]	
	3.2.2 Compare and contrast printing processes for substrates	Thinking	Reasoning	See relationship between two or more ideas, objects, or situations [4.5.5]	
3.3 Review the use of paper in printing	3.3.1 Explain the process of paper making (science)	Foundation	Science	Describes/explains scientific principles related to paper making [1.4.13]	
	3.3.2 Interpret paper carton/package labels	Thinking	Problem Solving	Comprehends ideas and concepts related to carton/package labels [4.4.1]	
	3.3.3 Categorize the different paper weights, different grades, grain direction, and paper finishes	Thinking	Seeing Through the Mind's Eye	Organizes and processes images - symbols, pictures, graphs, objects, etc. [4.6.2]	

Unit 4: Digital Imaging & Platemaking

Hours: 35

Terminology: Bold, Color, Digital imaging, Italic, Line spacing, Mechanical, Novelty, Roman, Underline, San serif, Script, Serif, Square serif, Sizing, Texture, Typographer, Typography

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do			ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
4.1 Define terms related to imaging and platemaking	4.1.1	Apply terminology in appropriate situations	Foundation	Reading	Applies and understands technical words that pertain to digital imaging and platemaking [1.3.6]
				Listening	Comprehends ideas and concepts related to Graphic Communication [1.2.1]
				Writing	Uses words appropriately [1.6.21]
				Speaking	Applies/uses technical terms as appropriate to audience [1.5.2]
4.2 Identify health and safety procedures for digital imaging and platemaking	4.2.1	Follow proper safety procedures for use of chemicals	Foundation	Science	Follows safety guidelines [1.4.15]
	4.2.2	Follow health and safety procedures for computer equipment/ergonomics	Personal Management Skills	Integrity/Honest/ Work Ethic	Complies with safety and health rules in a given work environment [3.2.2]
4.3 Discuss measurement techniques related to digital imaging and platemaking	4.3.1	Use a proportion scale to reduce/ enlarge an image	Foundation	Science	Solves practical problems using scientific methods and techniques [1.4.22]
	4.3.2	Use screens to determine appropriate contrast and shading	Foundation	Science	Uses equipment and techniques to determine contrast and shading [1.4.23]
	4.3.3	Use half-tones (LPI, DPI) screens appropriately	Foundation	Science	Uses equipment and techniques to determine contrast and shading [1.4.23]
4.4 Demonstrate principles and elements of design	4.4.1	Create a project integrating all principles and elements of design	Thinking	Seeing Things in the Mind's Eye	Visualizes a finished product [4.6.4]

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
4.5 Demonstrate principles and elements of typography	4.5.1 Create a project integrating all principles and elements of typography	Personal Management Skills	Responsibility	Comprehends ideas and concepts related to typography [3.4.1]
		Thinking	Seeing Things in the Mind's Eye	Visualizes a finished product [4.6.4]
4.6 Research various platemaking methods	4.6.1 Demonstrate at least one platemaking method	Thinking	Decision Making	Evaluates information/data to make the best decision [4.2.3]
		Thinking	Reasoning	Uses logic to draw conclusions from available information [4.5.6]

Unit 5: Offset Press Operation

Hours: 35

Terminology: Continuous dampening system, Digital printing, Flexography, Form roller, Grippers, PH, Perfecting press, Scumming, Set-off, Stream feeder, Waterless press, WebFed press

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
5.1 Define terms related to offset press operation	5.1.1 Apply terminology in appropriate situations	Foundation	Reading	Applies and understands technical words that pertain to offset press operation [1.3.6]
			Listening	Comprehends ideas and concepts related to Graphic Communication [1.2.1]
			Writing	Uses words appropriately [1.6.21]
			Speaking	Applies/uses technical terms as appropriate to audience [1.5.2]
5.2 Identify health and safety procedures for offset press operation	5.2.1 Demonstrate proper safety procedures for handling and disposing of chemicals	Foundation	Science	Follows safety guidelines [1.4.15]
			Personal Management Skills	Responsibility
	5.2.2 Discuss press specific safety features (guards, nip points, lockout devices, tag out devices, MSDS)	Thinking	Decision Making	Comprehends ideas and concepts related to health and safety procedures for offset press operation [4.2.2]
5.2.3 Demonstrate proper paper loading/unloading techniques	Personal Management Skills	Responsibility	Pays close attention to details [3.4.8]	
		Thinking	Knowing how to Learn	Uses available resources to acquire new skills or improve skills [4.3.4]

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
5.3 Discuss measurement techniques related to offset press operation	5.3.1 Use a line gauge to position an image	Personal Management Skills	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]	
	5.3.2 Prepare a press for using different sizes and weights of paper	Thinking	Problem Solving	Comprehends ideas and concepts related to offset press operation [4.4.1]	
5.4 Research various press classifications	5.4.1 Demonstrate use of at least one press classification (lithography, flexography (relief), gravure, and screen printing)	Personal Management Skills	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]	
		Thinking	Seeing Through the Mind's Eye	Visualizes a system's operation [4.6.3]	
5.5 Analyze offset press operating systems	5.5.1 Demonstrate/adjust press setups and monitor operations (delivery, feed, inking, dampening, and printing)	Personal Management Skills	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]	
	5.5.2 Demonstrate safe working practices	Personal Management Skills	Integrity/Honest/Work Ethic	Complies with safety and health rules in a given work environment [3.2.2]	
	5.5.3 Demonstrate regular maintenance of equipment (cleaning and lubricating)	Thinking	Problem Solving	Comprehends ideas and concepts related to maintenance of equipment [4.4.1]	
5.6 Analyze press controls	5.6.1 Demonstrate/adjust press controls (air, vacuum, pile height, double sheet detector)	Thinking	Seeing Through the Mind's Eye	Visualizes a system's operation [4.6.3]	
5.7 Discuss the impact of high-speed copiers on the printing industry	5.7.1 Analyze the difference between quick copy and traditional operations	Thinking	Decision Making	Evaluates information/data related to quick copy and traditional operations [4.2.5]	

Unit 6: Finishing and Binding

Hours: 15

Terminology: Accordion fold, Buckle fold, Coil binding, Embossing, Foil stamping, In-line finisher, Knife folder, Numbering, Parallel fold, Perforating, Right angle fold, Scoring

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
6.1 Define terms related to finishing and binding	6.1.1 Apply	Foundation	Reading	Applies and understands technical words that pertain to finishing and binding [1.3.6]
			Listening	Comprehends ideas and concepts related to Graphic Communication [1.2.1]
			Writing	Uses words appropriately [1.6.21]
			Speaking	Applies/uses technical terms as appropriate to audience [1.5.2]
6.2 Identify proper safety procedures for finishing and binding	6.2.1 Demonstrate proper safety procedures for using finishing and binding equipment and tools (cutter, stitcher, folder, paper drill, collator, padding procedures, and packaging)	Foundation	Science	Follows safety guidelines [1.4.15]
		Thinking	Knowing How To Learn	Applies new knowledge and skills to safety procedures [4.3.1]
6.3 Discuss calculations for finishing and binding	6.3.1 Determine number of cuts from stock sheet to limit paper waste	Thinking	Decision Making	Evaluates information/data to make best decision [4.2.5]
	6.3.2 Calculate total weight of a given quantity and size of paper	Foundation	Mathematics	Calculates/estimates weights related to finishing and binding [1.1.8]
6.4 Examine cutting operations	6.4.1 Demonstrate cutting operations for a given project (cuts, counting, and trimming)	Personal Management Skills	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]
		Thinking	Problem Solving	Comprehends ideas and concepts related to cutting operations [4.4.1]

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
6.5 Examine folding operations	6.5.1 Demonstrate folding operations for a given project (letter fold, tri-fold, single or half fold)	Personal Management Skills	Responsibility	Pays close attention to details [3.4.8]
		Thinking	Seeing Through the Mind's Eye	Visualizes a system's operation [4.6.3]
	6.5.2 Compare various folding operations	Thinking	Reasoning	See relationship between two or more ideas, objects, or situations [4.5.5]
6.6 Review finishing and binding operations (stitcher, paper drill, collator, padding procedures, and packaging)	6.6.1 Demonstrate use of finishing and binding operations in a given area	Personal Management Skills	Responsibility	Pays close attention to details [3.4.8]
		Thinking	Seeing Through the Mind's Eye	Visualizes a system's operation [4.6.3]

Glossary

Unit 1: Safety

1. Decibel – a unit for measuring the intensity of sound for a period of time
2. Ergonomics – the science of fitting the job to the worker
3. First aid – medical supplies carried in the shop area that will cover minor cuts and abrasions
4. Flash point – a temperature at which a substance will ignite
5. Lockout – a key or combination – type lock used to hold an energy isolating device in the safe position to prevent the machine from energizing
6. Machine guard – protects the human body from injury and the equipment from foreign objects
7. MSDS – Material Safety Data Sheet
8. OSHA – Occupational Safety Health Administration
9. Personal protective devices – clothing or equipment worn for protection from potential bodily injury associated with chemical use or machine operation
10. Safety color codes – hazardous identification chart with icons identifying personal protection required for various hazard categories
11. Tag out – in Graphic Communication, it is a prominent warning device, such as a tag, securely fastened to an energy isolating device, to indicate that electrical power is off and must remain off until the tag is removed
12. UV – abbreviation for Ultra Violet
13. Volatile Organic Compound (VOC's) – toxic substances contained in blanket and roller washes, fountain solutions, plate cleaners, glaze removers, degreasers, and film cleaners

Unit 2: Workplace Skills Development

1. Ability – competence in an activity or occupation because of one's skill, training or qualification
2. Copyright – the legal right to reproduce, license or sell an artistic or literary work
3. Cover letter – a document focusing on one's qualifications that is sent along with a résumé to assist in obtaining an interview
4. Downtime – a period of non-production that results from equipment failures, accidents or personnel errors
5. Interpersonal skills – the ability to communicate and interact effectively with customers, co-workers, supervisors and subordinates
6. Interview – a meeting between a job applicant and an employer in order to evaluate the applicant's qualifications
7. Knowledge – familiarity with a particular skill gained by sight, training or experience
8. KUDER – an assessment tool that allows one to continue their career planning process after high school
9. Leadership – the act of giving guidance or direction to personnel
10. Portfolio – an organized presentation of an individual's work samples and skills
11. Résumé – a short, one page summary of one's academic and work qualifications used in applying for a job
12. Skill – proficiency or competency gained through training or experience
13. Teamwork – a co-operative effort on the part of a group to accomplish a goal
14. Vendor – a person or company who sells printing equipment, products or services
15. Workplace – a person's place of employment

Unit 3: Paper and Substrates

1. Basis weight – the weight of a ream of paper
2. Bleaching – a chemical treatment to whiten wood pulp
3. Coated – paper with a mineral substance applied to it for a smoother, stronger surface
4. Grades – categories or classes of paper
5. Index – a paper that is a thick, stiff, smooth paper, frequently two-ply or greater
6. Newsprint – one of the lowest grades of printing paper
7. Offset paper – a paper designed specifically for use on offset printing presses
8. Pulp – the soft, spongy substance produced by the chemical or mechanical breakdown of cellulose fibers for use in papermaking
9. Ream – 500 sheets cut to the common size for that particular paper
10. Recycled – paper made from old or used paper products
11. Sizing – material, such as rosin, that is added to pulp slurry to make the paper stronger and more moisture resistant
12. Uncoated – paper that does not have a mineral layer applied over the surface, so it has a slightly textured feel

Unit 4: Digital Imaging & Platemaking

1. Bold – heavy black type
2. Color – a visual sensation produced in the brain when the eye views various wavelengths of light
3. Digital imaging – this is a series of dots that form a picture
4. Italic – a slanted version of an upright letter
5. Line spacing – determines the distance separating each line of copy
6. Mechanical – the final stage of a layout
7. Novelty – typeface designed to primarily to command special attention, express a mood or provide a special appearance for the theme or occasion
8. Roman – characterized by variation in stroke and by use of serif
9. Underline – a line directly under a character
10. San serif – characterized by uniform strokes and serif shapes without fillets or rounds
11. Script – characterized by a design that attempts to duplicate feelings of free-form handwriting
12. Serif – the thickest tips or the short finishing-off stroke at the top and bottom of a character
13. Square serif – A typeface that has the same weight as the main portion of the letter face, and appears square or block-like
14. Sizing – material, such as rosin, that is added to pulp slurry to make the paper stronger and more moisture resistant
15. Texture – a projection of emphasized structure or weight, it appears as a design element when the visual images reflect the meaning of lines
16. Typographer – a print designer who determines how a manuscript should be expressed in type as well as other details of reproduction
17. Typography – the art of expressing ideas in printed form through the selection of appropriate typefaces. Also, the art of setting type professionally

Unit 5: Offset Press Operation

1. Continuous dampening system – a system of rollers that distributes a continuous flow of fountain solution to the plate
2. Digital printing – any reproduction technology that receives electronic files and uses spot (or dots) for replication
3. Flexography – a relief printing process that uses flexible (usually plastic) printing plates
4. Form roller – a roller which applies a solution to the plate
5. Grippers – metal fingers that hold the paper as it passes through the press and releases it into the receiving end
6. PH – a measurement that indicates the acidity or alkalinity of a solution
7. Perfecting press – a printing system that prints both sides of the substrate at once
8. Scumming – a condition in lithography when the nominate areas of the plate begin to except ink
9. Set-off – a condition that results when wet ink on the press sheets transfers to the back of other sheets in a stack
10. Stream feeder – a method typically known used on high speed presses that allow sheets to partially overlap when paper enters the press
11. Waterless press – a offset lithographic press system that eliminates the use of a dampening system during the printing process
12. Web-Fed press – a lithographic press that prints with one long, continuous web of paper that is fed from a roll

Unit 6: Finishing and Binding

1. Accordion fold – the folding of paper using two or more parallel folds
2. Buckle folder – uses a set of rollers which allow the sheet to slide in or out without puckering the sheet
3. Coil binding – the process of joining together multiple pages of a printed product by spiral binding
4. Embossing – a process that creates a raised image on a substrate by pressing it between two dies
5. Foil stamping – the process of transferring a thin layer of metallic tone or color to a substrate, using heat and pressure
6. In-line finisher – a system capable of performing many finishing operations that can not be accomplished on regular web offset presses
7. Knife folder – where the knife pushes the paper into the rollers, which form the fold by rolling the paper between them
8. Numbering – in Graphic Communication, the process of imprinting tickets, certificates, checks, or other items with consecutive figures (Numbers) using a device that transfers the figures from an inked relief image
9. Parallel fold – all folds being parallel to each other
10. Perforating – operation that places a series of small cuts or slits in the substrate, using various types of blades or wheels on the press or folder
11. Right angle fold – each fold is made of a right angle to each preceding fold
12. Scoring – a slight cut made in heavy stock before it is folded