APPENDIX I

Job Aids for Design

Table of Contents

These job aids are designed to work in concert with the Design phase worksheets presented in Appendix J. There is not a one-to-one relationship since not all jobs aids need a standard way of capturing the associated data.

Use the following listing to access the job aid for the task you want to complete.

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JA – I.1: How to Write Terminal Performance Objectives

Purpose	This job aid describes how to write a Coast Guard terminal performance objective (TPO). When executed correctly, you will be able to write TPOs that accurately describe the tasks that students must be able to perform upon completion of instruction.
Who should use this JA	You should use this job aid if you are a course developer responsible for developing performance objectives for a resident instruction program. Ideally, you are a graduate of the Coast Guard Course Designer Course (CDC) or the SABA Knowledge Service Peak Performance System workshops (previously known as Accomplishment-Based Curriculum Development (ABCD) workshops)
When you should use this JA	Use this job aid after a task has been determined for the particular job specialty.
How to use this JA	Follow the steps as literally as is practical, and in the order presented. Inputs are provided from Analysis phase, using the Task Detailing information you collected (along with other analysis data using a methodology from Volume 2 of the SOP (such as FEA, JTA, TRA, etc.) If you have no task data whatsoever, you have reached this job aid prematurely and you should go back to Chapter 3 to complete your task analysis for the project.

JA – I.1: How to Write Terminal Performance Objectives, Continued

Overview

As mentioned in Chapter 4, the purpose of TPOs is to describe the task that students must be able to perform upon completion of the instruction. TPOs guide the course developer in designing and developing instructional materials for the course.

Performance Statement

Step 1 and 2 of this job aid deals with the performance statement. The performance statement describes the behavior and the output of the task that the graduate will perform on the job. The statement consists of an action verb and the output resulting from the action.

The performance in the performance statement must match the performance expected on the job. Do not compromise on the performance statement in the PO.

Conditions Statements

Steps 3 through 6 of this job aid address the conditions statements. The conditions informs us, as applicable, what information cues the graduate to perform the task, what the graduate is given to perform the task, and what the graduate will have to do without when performing the task. The statement should match as closely as possible to those on the job that are critical to task performance.

The conditions statements may also alert us to the ***limitations of the training environment*.** For example, the Emergency Medical Technician curriculum can only guarantee that graduates can perform cardiopulmonary resuscitation (CPR) on a mannequin, not on a live patient. Therefore, the conditions statement will tell us that the CPR will be performed “on a mannequin.”

Caution!

Be careful not to overload your conditions statement. DO NOT put anything in the statement unless it is either necessary to perform the behavior or affects the actual performance of the behavior.

Standard Statements

Steps 7 through 9 of this job aid address the standard statements. The standards tell how well the PO must be completed. Clear standards for the output, and where necessary, the actions are the foundation for the testing and training of the PO.

The standards in the standards statement must match the standards expected on the job. Do not compromise on the standards in the PO.

JA – I.1: How to Write Terminal Performance Objectives, Continued

Format

The worksheet below aligns with the steps of the job aid on the following pages.

WS-J.1	Terminal Performance Objective(s)		
Project			
Designer		**Date**	
Task Number		**Objective Number**	
RPQ *(if applicable)*	**Step 1**		
Conditions *Cue that signal the performer to act / Stimulus* *Tools and equipment needed:* *References, job aids, and assistance needed:* *Physical Environment*	**Step 3 - 6**		
Performance	**Step 2**		
Standards *Time* *Accuracy* *Safety* *Security* *Process / Product*	**Step 7 - 9**		
TPO Statement	**Step 10**		

JA – I.1: How to Write Performance Objectives, Continued

Steps

Step	Action
1	If the course is developed from EPQ's / RPQ's (off which the task list was developed), you may wish to reference that EPQ in the first block. If not, state N/A or None.
2	List the Task Statement (from RPQ) or task list (also on Analysis WS_F.1: Task Detailing). The performance statement must match the performance expected on the job. Do not change the Task statement when writing the performance statement in the TPO (unless due to limitation in the training environment, or to more accurately represent the behavior expected of students that is outlined in the RPQ).
3	Conditions: Transfer from your analysis data, the **signal/stimulus** that prompts the start of the task to the conditions block. At this point, you also have to start considering if there are any constraints on testing the task and record the updated conditions at his time. Following are some examples of cues: • "Upon hearing the General Quarters alarm…" • "At the smell of burning food…" • "When the light goes out…" • "When the door feels hot to the touch…" • "On the last day of a voyage…" • "At the beginning of a work shift…"
4	Conditions Transfer from your analysis data, the **tools and equipment** needed in performance of this task to the conditions block Examples include a(n): • Oscilloscope • Standard workstation • Signal flare • Blood pressure cuff
5	Conditions Transfer from your analysis data, the **references, job aids, and assistance** needed in performance of this task to the conditions block. Assistance includes any persons or organizational units with whom the performer interacts when performing the task. Examples include: • The Joint Travel Regulations • The manufacturer's technical manual • The "Writing a Test for a PO" job aid • With a teammate • Supervisor • Servicing personnel office

Continued on the next page

JA – I.1: How to Write Terminal Performance Objectives, Continued

Steps, Continued

Step	Action
6	Conditions**:** Transfer from your Analysis data, the **Safety Requirements, Performance Locations/Enables/Inhibitors** to the conditions block. These are things that limit or control how the task is completed or are restrictions placed on the performance or environment. Examples include: • "underwater" • "while attached to a tether" • "from a sitting position" • "while wearing a breathing apparatus" • "without any light" • "with one hand"
7	Standards: Transfer from your Analysis data, the standards needed for task accuracy and completeness to the Standards Block. Be sure to consider if is necessary to write standards for the student's actions as well as the output of the PO. Examples include: • "completed the first time without error" • "making no 'major' errors and less than three 'minor' errors • "form must be filled out completely"
8	Standards: Transfer from your Analysis data, the standards needed for safety (safe task completion), following all security, standard operating procedures, or other published standard to the Standards Block. Examples include: • "without violating grounding procedures" • "using the checklist provided in the SOP" • "following every step in the job aid"
9	Standards: Transfer from your Analysis data, any time or rate of production requirements to the Standards Block. These are usually time (i.e. the maximum time allowed for production of a single output) or rate of production (i.e. the specific number to be produced in a given time). Examples include: • "entering three travel claims an hour" • "within 20 minutes"
10	Draft your complete Terminal Performance Objective Statement combining all three elements: Conditions, Performance and Standards. **Note**: *You will have a chance to review / revise this TPO based on testing constraints in the next part of the Design phase.*
End of Procedure	

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JA – I.2: How to Select Evaluation Criteria

Purpose	This is a job aid to help you select evaluation criteria for a task lesson.
Who should use this JA	You should use this job aid if you are a course designer responsible for designing preparation activities. Ideally, you are a graduate of the Coast Guard Course Designer Course (CDC) or the SABA Knowledge Service Peak Performance System workshops (previously known as Accomplishment-Based Curriculum Development (ABCD) workshops)
When you should use this JA	Use this job aid *after* you have written the TPOs.
How to use this JA	Follow the steps as literally as is practical, and in the sequence provided. The reason you should start thinking about evaluation criteria right now is because you have already detailed the conditions from the performance objective and now you just have to transfer it to the performance test checklist. In the Development phase you will actually build the performance tests, but now is a good opportunity to capture the evaluation criteria.
Worksheet	Use of worksheet WS-J.2 is valuable in helping you capture the decision made when selecting your evaluation criteria. It also makes it easier to transfer this information to WS-N.1 when developing your performance test checklists.

JA – I.2: How to Select Evaluation Criteria, continued

Format

Use WS-J.2 as a tool to capture your evaluation criteria selection decisions; but it is also valuable in the development of your performance test checklist (WS-N.1).

WS-J.2	Evaluation Criteria Selection Worksheet		
Project			
Designer		Date	
Terminal Performance Objective		**TPO Number**	
	Step 1		
Testing Parameters / Constraints (Conditions)	**Step 2**		
Standards NOT required for Task Proficiency	**Step 3**		
Modifications to TPO (if applicable)			
	Step 4		
Student may use the following	Job Aid ☐	Reference Materials ☐	Other *(list)*
Evaluation Criteria *(correct performance will be based on this)* — **Step 5**	Product Only ☐	Process and Product ☐	
Accuracy *(list criteria as applicable)* — **Step 6**			
Time *(list criteria as applicable)*			
Safety *(list criteria as applicable)*	**Step 7**		
Rate of Production *(list criteria as applicable)*			
Other Criteria: _____ — **Step 6**			

JA – I.2: How to Select Evaluation Criteria, Continued

Steps

Step	Action
1	Transfer the Terminal Performance Objective as captured on WS-J.1.
2	Review the Course Parameters and Constraints for testing and evaluation as noted during the Analysis phase.
3	Determine if any of the standards are NOT required for task proficiency. **Note: Typically, all standards are required for task proficiency.**
4	Reword the TPO statement, removing any standards not required (as identified in Step 3) and modifying conditions as necessary to account for any testing constraints as identified in Step 2.
5	Determine type of evaluation required for successful task completion. Chapter 4 discusses the differences between product evaluation and process / procedure evaluation. If it only matters what the resulting "product" looks like at the end and how it gets done doesn't matter, then select "Product Only" – Typically we will be evaluating student on HOW (process) they perform, as well as successful performance of the specified task resulting in a measurable / observable output (product).
6	From WS-J.1, identify those criteria that will determine 100% accuracy and group into appropriate categories to create your evaluation criteria "blocks" – these should be tailed to each specific TPO. (i.e. Timing, Product outcome (accuracy), Safety, Rate of Production, Security, etc)
7	Continue completing the form by listing those criteria into the appropriate "blocks/categories" on the worksheet.
End of Procedure	

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JA – I.3: How to Determine an Instruction Strategy (Group and Sequence Tasks)

Purpose

This job aid is provided to help you sequence tasks to create your course "blueprint" or course map, identifying the different units (if course is broken up into units), and determine activities within a lesson.

Who should use this JA

You should use this job aid if you are a course developer responsible for sequencing instruction. Ideally, you are a graduate of the Coast Guard Course Designer Course (CDC) or the SABA Knowledge Service Peak Performance System workshops (previously known as Accomplishment-Based Curriculum Development (ABCD) workshops).

When you should use this JA

Use this job aid *after:*

- Analysis completed (worksheet F.1)
- TPOs have been written
- Course activities and evaluation criteria have been selected

How to use this JA

Follow the steps as literally as is practical, and in the sequence provided. A worksheet for each of the three parts of "Determining Instructional Strategy" have been provided for you in *Appendix J*.

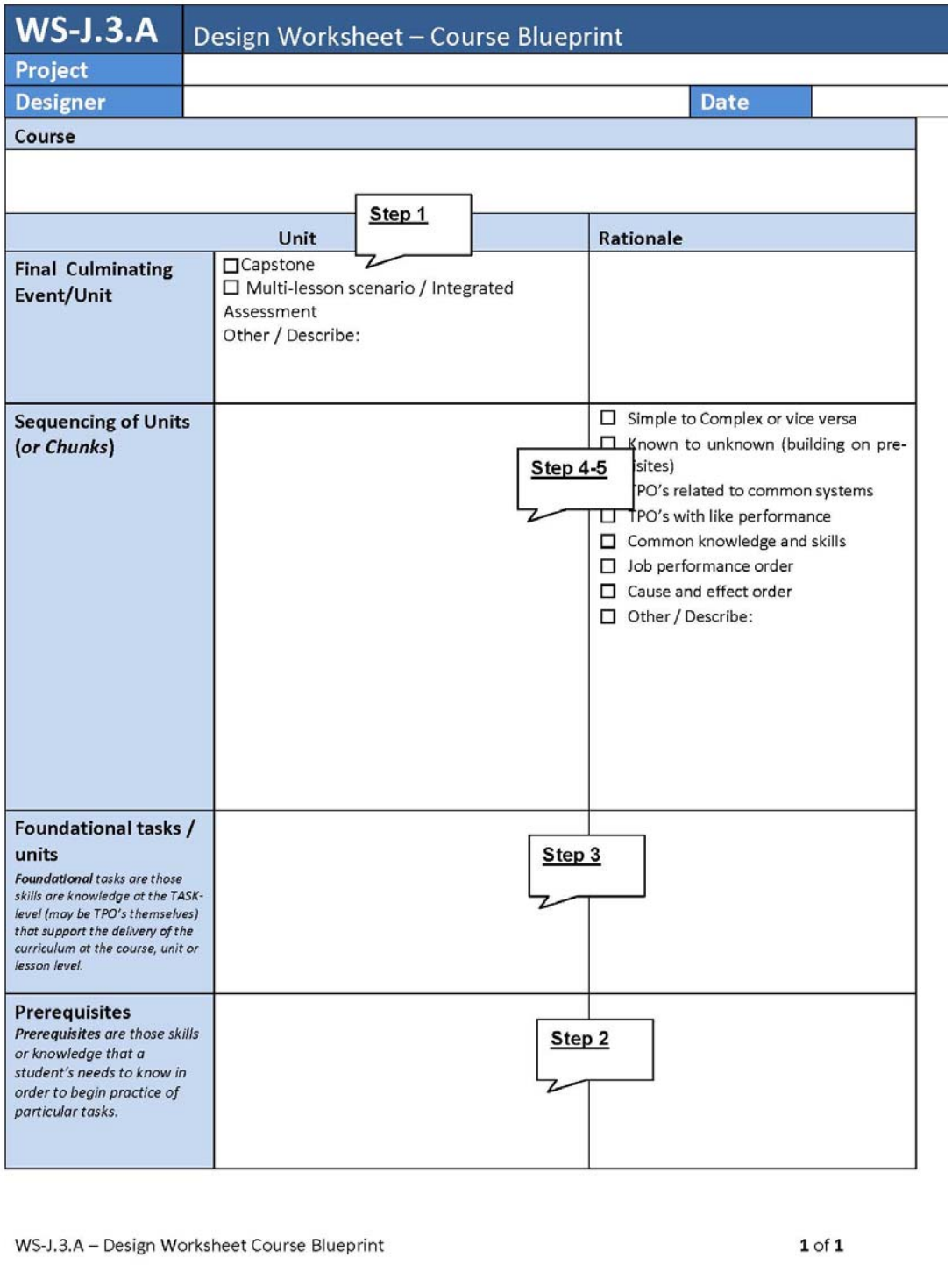
From the analysis phase, you should have a list of tasks, in order of occurrence, within each job output. Use the job aids from the table below to organize: your course into units, your units into lessons, and your lesson into topics or activities.

For short courses, you may not have units within your course, just multiple lessons – if so it might be easiest to skip JA-I.3.A altogether and just go straight to JA-I.3.B.

Job Aid	Element	Hierarchy
JA – I.3.A	1 or more UNITS	COURSE
JA – I.3.B	1 or more LESSONS	UNIT
JA – I.3.C	1 or more TPOs	LESSON
	Smaller parts of a lesson that are part of the lesson design	TOPIC

JA – I.3.A: How to Create a Course Blueprint

Course Blueprint



WS-J.3.A	Design Worksheet – Course Blueprint	
Project		
Designer		Date
Course		

Step 1

	Unit	Rationale
Final Culminating Event/Unit	☐ Capstone ☐ Multi-lesson scenario / Integrated Assessment Other / Describe:	
Sequencing of Units (*or Chunks*)	Step 4-5	☐ Simple to Complex or vice versa ☐ Known to unknown (building on pre-sites) ☐ TPO's related to common systems ☐ TPO's with like performance ☐ Common knowledge and skills ☐ Job performance order ☐ Cause and effect order ☐ Other / Describe:
Foundational tasks / units ***Foundational** tasks are those skills are knowledge at the TASK-level (may be TPO's themselves) that support the delivery of the curriculum at the course, unit or lesson level.*	Step 3	
Prerequisites ***Prerequisites** are those skills or knowledge that a student's needs to know in order to begin practice of particular tasks.*	Step 2	

WS-J.3.A – Design Worksheet Course Blueprint 1 of 1

JA – I.3.A: How to Create a Course Blueprint, Continued

Instructions

Follow the steps in the table below to group and sequence tasks in order to create a course blueprint.

Before entering the step action table below, review your analysis data, as you may determine that additional task grouping is necessary due to excessive pre-requisites or foundational skills/knowledge identified for the course.

***Note**: These sub-steps may be necessary when excessive pre-requisites or foundational skills / knowledge are identified for course – see Appendix K, for examples.*

a. Group any clusters of *prerequisite* knowledge and skills into a core unit of instruction. Prerequisites are those skills or knowledge that a student's needs to know in order to begin practice of particular tasks.

b. Group performance objectives that relate to a common system or require the same type of action.

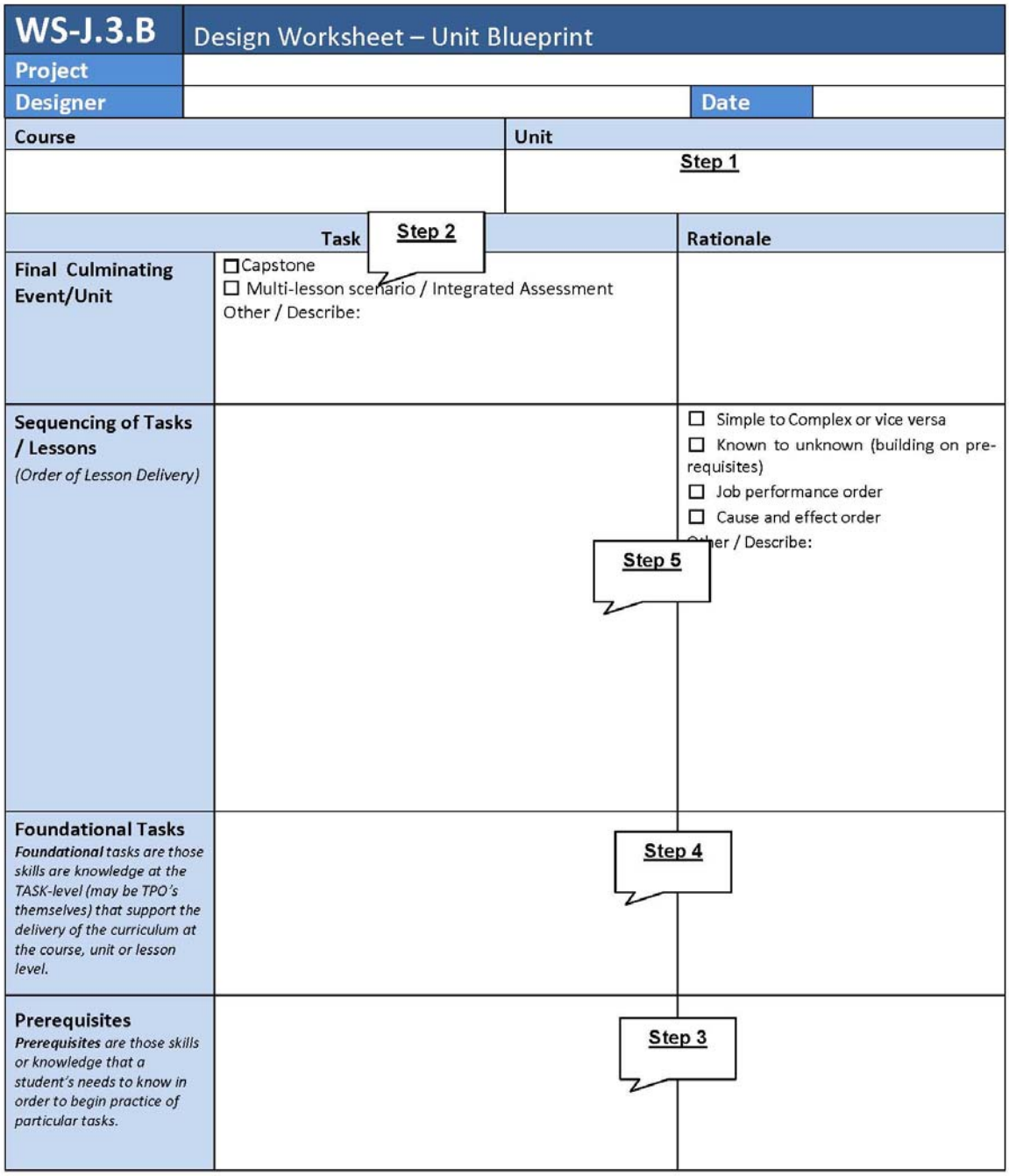
c. Group common *foundational* skills and knowledge. Foundational tasks are those skills are knowledge at the TASK-level (may be TPO's themselves) that support the delivery of the curriculum at the course, unit or lesson level.

Steps

Step	Action
1	Identify the final course evaluation, other special activities, or capstone event that is the culmination of all other units.
2	List the prerequisite skills and knowledge or introductory units required for the course. Explain rationale.
3	List the foundational tasks or units that follow a logical sequence immediately after the prerequisite elements. If you have multiples tasks or units within the foundational block, identify those "opening units" and order the rest in appropriate order of delivery prior to moving to core units of curriculum. Explain rationale.
4	Once units from steps 2 and 3 have been identified, list the remaining units in logical order (i.e.: by job output/job specialty outputs that relate to a common system or require the same type of action, or common knowledge and skills). Explain rationale.
5	Modify this list of units from step #4 until the order reflects those units that need to be taught before others, or if ordering does not matter, include that explanation in Rationale block.
End of Procedure	

JA – I.3.B: How to Create a Unit Blueprint

Unit Blueprint



WS-J.3.B	Design Worksheet – Unit Blueprint		
Project			
Designer		Date	
Course		Unit	
		Step 1	
	Task (Step 2)		Rationale
Final Culminating Event/Unit	☐ Capstone ☐ Multi-lesson scenario / Integrated Assessment Other / Describe:		
Sequencing of Tasks / Lessons *(Order of Lesson Delivery)*	Step 5		☐ Simple to Complex or vice versa ☐ Known to unknown (building on pre-requisites) ☐ Job performance order ☐ Cause and effect order Other / Describe:
Foundational Tasks ***Foundational** tasks are those skills are knowledge at the TASK-level (may be TPO's themselves) that support the delivery of the curriculum at the course, unit or lesson level.*	Step 4		
Prerequisites ***Prerequisites** are those skills or knowledge that a student's needs to know in order to begin practice of particular tasks.*	Step 3		

WS-J.3.B – Design Worksheet Unit Blueprint 1 of 1

JA – I.3.B: How to Create a Unit Blueprint, Continued

Introduction

Follow the steps in the table below to group and sequence tasks in order to create a unit blueprint.

***Note**: Larger courses (like A-schools) may not "fit" on this worksheet, due to the vast number of tasks that exists within each unit. Therefore, a modification to the worksheet is recommended. Just because a worksheet is provided, don't try to force a fit. You can use the concept to collect and sequence tasks in a form that will work for your situation. One such example as done within the ET-A school HF unit is shown in Appendix K, Examples.*

Steps

Step	Action
1	Add name of unit to Header
2	Identify the final unit evaluation, special activities, or tasks that are the culmination of all other lessons.
3	List the prerequisite skills and knowledge or introductory lessons (*lessons not based off any TPOs*) required for the unit. Explain rationale.
4	List any foundational tasks that are "core" to the unit, and explain the rationale. Core tasks are those tasks or lessons that are TPOs, but should be delivered at the start of the unit. Explain rationale.
5	a. List the remaining tasks for the unit. b. Group any of those tasks together that relate to a common system, require the same action or common knowledge/skill c. Within each task grouping, identify any introductory lessons and move them to the front d. Rearrange and list the tasks in a logical sequence to be delivered after the tasks from steps 3 and 4 (i.e.: by performance objectives that relate to a common system or require the same type of action, or common knowledge and skills). e. List all remaining tasks whose order is independent of others already sequenced. f. Explain rationale. *NOTE: If prerequisite skills / knowledge lessons (step 3) or foundational tasks (step 4) are not taught at start of unit, but still exist - include them within the sequencing of lessons (in this block) as appropriate and explain in the rationale (i.e. if they are instead taught as "just in time" delivery before a particular task or lesson.*
End of Procedure	

JA – I.3.C: How to Create a Lesson Blueprint

Lesson Blueprint (page 1)

WS-J.3.C	Design Worksheet – Lesson Blueprint	
Project		
Designer		Date
Course		Unit
Terminal Performance Objective(s)		
Step 1		
Lesson Activity	Description	
Summary and Review	Step 12	
Assessment (WS-N.1)	Step 2	
☐ Integrated PT (Step 3)		
List TPO's included:		
Practice Exercise (WS-N.2)	Final Level of Simulation	
☐ Integrated Practice (Step 4)	Step 6	
	Intermediate Level of Simulation	
☐ Special Learning Tactics (Step 5)	Step 8	
	First Level of Simulation	
	Step 7	
Demonstration	Step 11	
Content (WS-N.3)	Step 10	
Instructional Method(s)	☐ Instructor-led / Lecture ☐ Self paced tutorial/exercise ☐ Guided Practice ☐ Blended solution (describe)	
Introductory Activity	☐ Questions (Poll audience) ☐ Review / Recall (Step 9)	

WS-J.3.C – Design Worksheet Lesson Blueprint 1 of 2

JA – I.3.C: How to Create a Lesson Blueprint, Continued

Introduction

The purpose of this job aid is to help you design a lesson plan that includes *brief descriptions* of the activities that are recommended during each of the following activities throughout your lesson. The actual *development* of these activities and specific instructions for each will be built on during the Chapter 5: Development. The key parts of a Lesson Plan that should be outlined at this stage:

- Introduction
- Content delivery
- Demonstration and examples
- Practice activities and feedback
- Assessment
- Summary and review

Also included are decision tables to help you document media and material selection for delivering instruction, student to instructor ratios, and estimated length of time for each activity.

Steps

Step	Action
1	List the Terminal Performance Objectives (tasks) that will be covered in the delivery of this lesson (typically 1 TPO = 1 Lesson).
2	Describe the Evaluation Criteria (Performance Test Checklist, WS-N.1) in the Assessment block.
3	Select the box if this is an Integrated Performance Test (multiple tasks combined into one assessment).
4	Select whether *Integrated Practices* will be needed (due to complex tasks or multiple TPO's in one lesson). Integrated practices strengthen the overall learning and sequencing strategies; they provide students with the opportunity to practice complex behaviors presented within the same lesson; or more than one task practices together at a high level of simulation.
5	Select whether *Special Learning Tactics* may need to be considered or if special learning concerns may exist.

Continued on the next page

JA – I.3.C: How to Create a Lesson Blueprint, Continued

Steps, Continued

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>6</td><td>List your FINAL level of Simulation (which should be equal to (or as close to) that expected during the Performance Test.</td></tr>
<tr><td>7</td><td>Select the approximation that is appropriate for the first practice of the task as the FIRST Level of Simulation. The first level of simulation should be as high as the students can handle without error.
<table>
<tr><th>IF the range between the first and final simulations is…</th><th>THEN</th></tr>
<tr><td>Narrow</td><td>Select only the first and final simulation levels for practice.</td></tr>
<tr><td>Wide</td><td>Select an approximation that is between the first and final simulation levels for intermediate practice.(step 3).</td></tr>
</table>
</td></tr>
<tr><td>8</td><td>List your Intermediate levels of simulation (if applicable).</td></tr>
</table>

Continued on the next page

JA – I.3.C: How to Create a Lesson Blueprint, Continued

Steps, Continued

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>9</td><td>
Describe the content needed to support practice / performance of task(s). This could be the pre-requisite skills/knowledge necessary to support this particular task (lesson).

The content delivery is the means by which the student is presented the cognitive behavior or “knowledge” about how to perform the task to be trained in the lesson. The only reason for content in Performance Based training is to determine what students need to know (i.e. nomenclature and safety precautions) before they are allowed to begin to practice. Use the decision table below to determine the instructional method of content delivery.

NOTE: Content Development (and that decision on what is needed) is further explained in Chapter 5, 5.7 – Content Development. Complete decisions as to this section may not be made until that is completed.
<table>
<tr><th>IF…</th><th>THEN the Instructional Method is…</th></tr>
<tr><td>Wide range of entering skills and knowledge in student population</td><td rowspan="2">Self-instructional materials (e.g., homework, student guide, CBT, textbook, videos)</td></tr>
<tr><td>Number of hours available for instruction are very constrained</td></tr>
<tr><td>Behavior is mostly physical</td><td rowspan="5">Instructor-lead</td></tr>
<tr><td>Development time is very constrained</td></tr>
<tr><td>Less than 100 persons in work target population</td></tr>
<tr><td>Procedures to change within two years</td></tr>
<tr><td>Course is needed for three years or less</td></tr>
</table>
Good Content Blocks have the following characteristics. They:
• Define any new terms or equipment or parts of equipment.
• Describe any prerequisite skills or knowledge applicable to the tasks that have NOT been learned previously.
• Describe any precautions involving safety, security, or legal issues.
• Briefly describe any background information or subject matter or “whys” that are relevant to the task and make learning easier.
</td></tr>
</table>

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JA – I.3.C: How to Create a Lesson Blueprint, continued

Steps, continued

Step	Action
10	Describe what type of demonstration or instructor-led activity will be used to guide the students through the performance before they begin to practice themselves. Demonstration involves showing and explaining the proper procedure to complete a task or step. If demonstration is not appropriate method for training the performance objective, other appropriate activities are case-studies and by the use of examples. A good way to cut down on the amount of content delivered via lecture is to include the delivery of that supporting content DURING a demonstration.
11	Describe the introductory activity for the lesson. A good introductory activity has the following characteristics: • Describe the value of learning the task in the lesson. • Describe the task in relation to what has been previously trained and what will be trained after this task. • Describe how to show the students a completed task product with its required quality characteristics emphasized. • Describe how the students will be practicing the task and be tested on the task.
12	Complete the Review and Summary block to: • Include any follow-though activities • Provide students with job aids or memory aids for retention • Allow instructors to provide students with last-minute considerations about newly learned tasks when they return to the field
Continue to Step 13 for completing page 2 of the Lesson Blueprint	

Continued on next page

JA – I.3.C: How to Create a Lesson Blueprint, Continued

Steps, Continued

Step	Action
13	Sequence activities for a lesson as follows: Select the introductory activity as the first activity. • Select content (ideally as homework before class time, if appropriate) as the next activity (-ies). • Select any demonstration activity as the next activity. • Select the order of practice activities in accordance with these rules: a. Practice behaviors with *similar signals* close together. b. Practice behaviors with *similar responses* close together. c. Practice all else in typical job order. d. For the final practice, practice the entire task in typical job order, raising the level of simulation to the same level as used during the task performance test. • Select the performance test as the last activity of the lesson. • Then conclude with summary and review.

Continued on the next page

JA – I.3.C: How to Create a Lesson Blueprint, Continued

Lesson Blueprint (Page 2)

Following is the second page of a lesson blueprint.

WS-J.3.C	Design Worksheet – Lesson Blueprint		
Project			
Designer		Date	

Activity *Presentation / Demonstration / Practice / Lab / Assessment / Capstone*	Media *CBT / Paper-based / graphics / video / audio / Computer*	Student-Instructor Ratio	Length of Time
Step 13	Step 14	Step 15	Step 16

Comments:

WS-J.3.C – Design Worksheet Lesson Blueprint 2 of 2

JA – I3c: How to Create a Lesson Blueprint, Continued

Steps, Continued

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>14</td><td>Use the decision table below to determine the type(s) of media to use for the task
<table>
<tr><th>IF…</th><th>AND…</th><th>THEN select…</th></tr>
<tr><td>Task is job-aided</td><td>→</td><td>Job aid.</td></tr>
<tr><td rowspan="5">Design prescribes source of content as self-instructional</td><td>Long time for development</td><td rowspan="4">Computer/web-based training materials.</td></tr>
<tr><td>High budget</td></tr>
<tr><td>200 or more graduates per year</td></tr>
<tr><td>Course to last five or more years</td></tr>
<tr><td>None of the above</td><td>Paper-based self-instructional materials.</td></tr>
<tr><td>Signals are mostly SIGHT</td><td>→</td><td>Drawings/animation, photographs/video.</td></tr>
<tr><td rowspan="2">Signals are mostly SOUND</td><td rowspan="2">→</td><td>Audio recording.</td></tr>
<tr><td>Instructor’s voice.</td></tr>
<tr><td rowspan="2">Signals are mostly TOUCH</td><td rowspan="2">→</td><td>Actual object.</td></tr>
<tr><td>Model of actual object.</td></tr>
</table></td></tr>
</table>

Continued on the next page

JA – I.3.C: How to Create a Lesson Blueprint, Continued

Steps, Continued

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>15</td><td>Propose a recommended student-instructor ratio based on factors such as outlined below[1] (these will be finalized in your curriculum outline development when calculating ICHs).

Also reference: SABA Course Design Job Aid, Task N (page 24) for a flowchart to guide in determining student-instructor ratios.
<table>
<tr><th>IF…</th><th>THEN select ratio…</th></tr>
<tr><td>Injury to self or others could occur</td><td rowspan="2">≤ 2:1</td></tr>
<tr><td>Damage to expensive equipment could occur`</td></tr>
<tr><td>Fine muscular movement is required</td><td>≤ 4:1</td></tr>
<tr><td>Practice without characteristics above</td><td>≤ 6:1</td></tr>
<tr><td>Self-instructional activity (includes CBT/WBT)</td><td>≤ 10:1</td></tr>
<tr><td>None of the above</td><td>As many students that can fit into training room and still effectively participate in the activity as observed by the instructor</td></tr>
</table></td></tr>
<tr><td>16</td><td>Estimate length of each activity</td></tr>
<tr><td>17</td><td>Complete the worksheet and route for approval</td></tr>
<tr><td colspan="2">End of Procedure</td></tr>
</table>

[1] Background: Most of the S:I ratios listed above originate from ABCD and Army Training Doctrine and Command (TRADOC) guidance from the 1980s; authors added “injury to self or others and damage to expensive equipment” as critical considerations when you want decreased ratios. The CBT/WBT is based on experience of self-paced learning, during which more than 10 students per instructor ends up producing students idle for too long awaiting instructor feedback – commercial examples of that standard include Magers CRI and Nelson’s Expert OJT. Max of six to one for hands-on practice is from Army TRADOC, and it is also the max for hands-on according to the National Highway Transportation Safety Administration requirements for EMT schools. The only CG reference is from the HPT/ISD Handbook which gives 12:1 as the ideal ratio for classroom courses.