

MPS 12 Learning skills

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This unit has prerequisite connections with MPS 1, awareness, MPS 6, analysis: classification and MPS 11 Unique you.

For activity XX they must bring lecture notes they have taken from another course. Naturally all should bring notes from the same course and the same class.

Topic	Image	time min	elapsed time	clock	work sheet	Comments
1. Why workshop? Violin cartoon; Lucy		0.5				Introduce idea you can't develop soft skills by watching others
2. Develop confidence, bull's eye; Hagar cartoon		0.5	1			Need a lot of practice; it's not easy to develop some of these skills
Get organized, distribute stuff		2				
3. Definition; why?	1	1	2			
4. Where it fits in	2	0.5	2.5			Good advance organizer and context for other units in the MPS program.
5. Pretest	3					5 s each
6. Objectives	3	3	5.5		1,2	Either you read or ask different students to read each. Remind them that they might not understand the meaning of the objective until after the workshop
7. Target behaviours		1	6.5		3	
8. Route ahead	4	0.5	7			Good advance organizer
9..Research says	5	1	8			
10. Be motivated; expect success	5A	0.5	8.5			Challenge with the idea that they are in charge of their learning
11. Activity: list activity	5A	3	11.5		1201	Check to be sure that all understand the task; write in the time on transparency. Set timer. Check that they are complete and shorten the time or lengthen it depending on the student response. Communicate to them that "this is not a race for time! do the task carefully, but I don't want to waste your time if you complete this quickly."

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12. Share results	6	4 min or 90 s	13			Whenever they complete a task they want to see ideas of others and talk about their ideas..Point out “You are not expected to show the other person your answers. Rather talk about: was this an easy task? what are you discovering?” How easy it is to say they are in charge depends on their Rotter Locus of Control (from MPS 11) But they can set goals, what might they be? How? They can reward self! Use positive self talk (MPS 5)	
13. Write reflections	6	2 min	15		1200		
14. Clear time on task	7	1	16		1201	May want to list ideas on how to do this.	
15. Be active, Dale’s cone	8	1	17				
16. Activity: how to be active	9	4	21		1202		
17. Discuss with neighbor or tutor write ideas	10	1.5	22.5			Vital that they talk about the task.	
20 min boredom exercise						You and they may feel they have had activity so far but here is a time to think if such an intervention is needed.	
18. Cooperation	11	0.5	25				
19. Activity: force field diagram summary and write reflections discuss with neighbor	11	1	26		1202	Activity	
		1	27		1200	Reflections	
		1	28			Discuss with neighbor because after personal reflections we all want to talk briefly about it	
20. Activity: Interaction between teacher-student summary and write reflections discuss with neighbor	12	2	30		1203	Activity	
		13	2	32			Summary
			2	34		1200	Reflections
			1	35			Discuss with neighbor because after personal reflections we all want to talk briefly about it

Topic	Image	time min	elapsed time	clock	work sheet	Comments
21. Activity: Prompt feedback summary and write reflections discuss with neighbor	14	2	30		1203	Activity
	15	2	32			Summary
		2	34		1200	Reflections
		1	35			Discuss with neighbor because after personal reflections we all want to talk briefly about it
22. Learning enviro selected by teacher	16	0.5	35.5			
31. Activity: Purpose of lecture	17	2	37.5		1204	
32. Example responses	18	1	36			Option
28. Activity: summary and write reflections discuss with neighbor	19	2	38			Summary
		2	40		1200	Reflections
		1	41			Discuss with neighbor because after personal reflections we all want to talk briefly about it
40 min Boredom: Stretch, break. Students bring lecture notes from common class they have taken. You need to have attended the same class and taken notes too						
29. Activity: classify information from first 15 min of lecture notes	20	3	44		1204	
30. Skill in taking notes. Example from 1 st year Chem. Be proactive; see self in control	21	2	44			Compare B note's (not very good) with A's B missed date and section notation in text missed key comment "since..." comment missed notation about state, wrong sign A missed "Applications.."
31. Activity: See how personal style affects lecture note taking summary and write reflections discuss with neighbor	22	2	47			Activity: form a line based on S-N preference.
		3	50			Then pairs compare
	22	2	52		1200	Reflections
		1	53			Discuss with neighbor because after personal reflections we all want to talk briefly about it

Topic	Image	time min	elapsed time	clock	work sheet	Comments
32. Activity: Compare SN lecture notes with yours Summary and write reflections discuss with neighbor	23	2	55			Activity
	23	2	57			Report
		2	59		1200	Reflections
		1	60			Discuss with neighbor because after personal reflections we all want to talk briefly about it
Boredom: activity		4	64			
33. Activity: requests of prof to improve your learning	24	2	66			Activity: form a line based on S-N preference.
	25	3	69			Share
	26	4	73			Example responses
34. Personal style: Visualizer, verbalizer, Symbolizer	27	1	74			
35. VVS Example task	28	1	75			
36. Activity: implications of personal style	29	2 + 4	76			Find group, discuss
37. Improve retention	30	1	77			
Boredom: break 3 min						
New Topic Knowledge structure						
38. Characteristics of knowledge	31	1	81			
39. New into old knowledge	32	0.5				
40. Cartoon	33a	0.5	82			Please sir can I be excused. My head is full
41. Misconceptions	33b	2	84			Examples are given in Physics but may want to use ones from your course
42. New into old	34a	1	85			

Topic	Image	time min	elapsed time	clock	work sheet	Comments
43. Activity: for concept identify past pertinent experiences	34a	1	86			
	34b	5	91			List and how related?
44. Knowledge structure: characteristics	35	2	93			
45. Examples: Physics	36	2	81			Note pointers and cues; note structure
46. Example: conservation of energy and how it is linked to most undergrad Chem E. Courses	37	2-6	83			This is a complex one but it relates to Mass and energy balances, thermo fluids, heat transfer and reactor design
47. Importance of making connections; rehearsal; use of LASQ	38	3	86			STM = short term memory; limited capacity of 7 bits; rehearse to bring into Long term memory; rehearse to connect with previous knowledge.
48. Example of important cues and details: Physics	39	2	88			details needed for different concepts.
49. Laws: only about 8 whereas most students have memorized 2000 equations	40	2	90			
50. 10 types: laws to postulates	41	2	92			
51. Example for v-l equilib	42	1	93			law at top down to "wishes" because of assumptions and limitations in applicability
52. Concept map for v-l equilib	43	1	94			Either ask them to draw from thermo course or bring in from MPS 6 if they created such a concept map in that MPS unit.
53. Overview of the type of details that should be considered.	44	1	95			Larkin's research is given on #44
53. Most difficult in Physics	45	1	96			

Topic	Image	time min	elapsed time	clock	work sheet	Comments
54. Activity: complete a 2 page Larkin checklist for equation in your discipline	46	4	100			Visuals 47 and 48 can be used to illustrate the task before it is done by the students; OR it can be used to summarize the student's efforts after they have done the task.
55. Example Larkin checklist, page 1	47					
56. Example Larkin checklist, page 2	48					
Boredom: 3 min break						
57. Importance of knowledge and knowledge structure for problem solving	49	4	107			emphasize the importance of using pointers or cues to make links between problem statement and knowledge; importance of knowledge structure
58. Exercise solving and the importance of cueing and elaborating	50	4	111			
59. Target behaviors for knowledge access and problem solving	51	4	115			
60 Clements model of different types of info and how it's stored	52	1	116			Modes of mental thinking
61. Surface vs depth of processing initial information	53	2	118			Students asked to group problems that they thought were similar. The unsuccessful persons took the surface wording " a man is rowing across the river..." and said this is a vector problem. The successful people looked at what fundamentals were needed to solve the problem.
62. Activity: list pointer or cues that identify fundamental law	54	4	122			drops from a height > potential energy flows thru a valve > $\Delta H = \text{constant}$
63. Activity: identify experience knowledge	55	4	126			
64 Return to pretest Objectives	56					5 seconds
		4	130			Objectives
65 Discovery	57	5	135			

