A RUBRIC FOR SCENARIO DESIGN	Setting: Dewey's middle-schoolers studying 19th Century American History (*School and Society*, Part I)
Identify (for yourself) the key theme or question	19th C. mechanization of productivity, exemplified by the cotton gin
Specify (for yourself) basic learning point(s)	Understanding how a functional gin could transform cotton production
Recreate the key dynamic in a miniature or structural analogue / simulation	Have students card cotton (remove seeds), first by hand; then design and build simple devices to do so… reinvent the gin!
Jump right in *(minimal or no scaffolding. bit of trickery perhaps? let students "work it out for themselves")*	Launch the session with the handwork: raw cotton already on work tables. First learning: it's *hard!* (and they learn this *in their hands*)
Kick it up halfway *(unexpected challenge or wild card that emerges or is posed along the way)*	After students have laboriously separated the seeds by hand, challenge them to design and build a mechanical way to do it faster and better (bring materials, or big box of random items)
Manifest and concrete criteria for success *(how will the students know without you telling them when/if they've met the challenge?)*	First, fully carded cotton (no seeds). Later, a working cotton gin (primitive device for removing seeds)
Headlong flow to next steps *(how does this work manifestly and urgently unfold the next steps in the course?)*	Historical themes: how the mechanization of handwork in general transformed 19th century economy Machine thinking: conceiving and building basic machinery (Dewey's students eventually also built spinning wheels and looms and made their own clothes)

SCENARIO DESIGN CHALLENGE	General theme: SUSTAINABILITY (Ecology, Systems Thinking, Environmental Studies, Environmental Ethics)
Identify (for yourself) the key theme or question	Why there can be no such thing as "waste" in a closed system.
Specify (for yourself) basic learning point(s)	Every system output needs to be an input somewhere else, and circle back to output again.
Recreate the key dynamic in a miniature or structural analogue / simulation	
Jump right in *(minimal or no scaffolding. bit of trickery perhaps? let students "work it out for themselves")*	
Kick it up halfway *(unexpected challenge or wild card that emerges or is posed along the way)*	
Manifest and concrete criteria for success *(how will the students know without you telling them when/if they've met the challenge?)*	
Headlong flow to next steps *(how does this work manifestly and urgently unfold the next steps in the course?)*	- Sustainability is not just about low/efficient resource use, but literally (re)cycling. -

SCENARIO DESIGN <u>CHALLENGE</u>	General theme: **HARMONY** (Music, Music Theory)
Identify (for yourself) the key theme or question	Structure and feel of basic harmony
Specify (for yourself) basic learning point(s)	How a chord is built; an ear for harmony: the resonance of a well-tuned 3- or 4-note chord
Recreate the key dynamic in a miniature or structural analogue / simulation	
Jump right in *(minimal or no scaffolding. bit of trickery perhaps? let students "work it out for themselves")*	
Kick it up halfway *(unexpected challenge or wild card that emerges or is posed along the way)*	
Manifest and concrete criteria for success *(how will the students know without you telling them when/if they've met the challenge?)*	
Headlong flow to next steps *(how does this work manifestly and urgently unfold the next steps in the course?)*	- Major v. minor harmony? -

SCENARIO DESIGN CHALLENGE	General theme: **FROM OBSERVATION TO INFERENCE** (Critical Thinking, Problem-Solving)
Identify (for yourself) the key theme or question	Thinking like a detective
Specify (for yourself) basic learning point(s)	Observational persistence and care (e.g. look *thoroughly*; don't jump to conclusions; check initial biases and assumptions) Careful observation of events and scenes, especially keying to the most telling clues
Recreate the key dynamic in a miniature or structural analogue / simulation	
Jump right in *(minimal or no scaffolding. bit of trickery perhaps? let students "work it out for themselves")*	
Kick it up halfway *(unexpected challenge or wild card that emerges or is posed along the way)*	
Manifest and concrete criteria for success *(how will the students know without you telling them when/if they've met the challenge?)*	
Headlong flow to next steps *(how does this work manifestly and urgently unfold the next steps in the course?)*	

SCENARIO DESIGN EXAMPLE	General Theme: SETI (The Search for Extraterrestrial Intelligence)
Identify (for yourself) the key theme or question	The basic search strategy of contemporary radio-astronomical SETI
Specify (for yourself) basic learning point(s)	How we could possibly find alien minds who might be also seeking contact but without either side having any knowledge of the other
Recreate the key dynamic in a miniature or structural analogue / simulation	Actually try to make contact, right now, with someone who is looking for you but without either side having any other knowledge of the other.
Jump right in *(minimal or no scaffolding. bit of trickery perhaps? let students "work it out for themselves")*	Just announce that "someone" is looking for them – right then! Challenge: Find them!
Kick it up halfway *(unexpected challenge or wild card that emerges or is posed along the way)*	Plant question: How do we know that there even *is* "someone" looking for us? (Answer: we don't – and that is like SETI too)
Manifest and concrete criteria for success *(how will the students know without you telling them when/if they've met the challenge?)*	Actual contact – for there was such a person in this case (could be friendly contest with a small prize)
Headlong flow to next steps *(how does this work manifestly and urgently unfold the next steps in the course?)*	- Call or Zoom the other searcher to compare strategies (esp. when there are "near misses") - Specific SETI search foci today (prime number sequences in the H radio frequency)

SCENARIO DESIGN EXAMPLE	General theme: FREUD'S THEORY OF HUMAN NATURE
Identify (for yourself) the key theme or question	How could anyone think that sexual drives and fixations are the chief engine of our feelings and behavior? (and what *is* "sex", anyway?)
Specify (for yourself) basic learning point(s)	How startlingly Freudian the view quickly becomes once we start down a "royal road" to the Unconscious. Yet the data are all super-familiar… if taboo…
Recreate the key dynamic in a miniature or structural analogue / simulation *(basic idea)*	[one possibility!] List our most common obscenities: then explore what preoccupations and taboo drives they reveal
Jump right in *(minimal or no scaffolding. bit of trickery perhaps? let students "work it out for themselves")*	Black out any public view of the board, give students license to mention obscenities (not = using them); then list them on the board. Question: what are they mostly preoccupied with?
Kick it up halfway *(unexpected challenge or wild card that emerges or is posed along the way)*	Categorize the underlying drives into subsets (oral/anal/genital, anyone?) Can they all be considered "sexual"? (Answer: yes)
Manifest and concrete criteria for success *(how will the students know without you telling them when/if they've met the challenge?)*	Full list (this can be fun, if unsettling). Then, getting down to the really bad ones that are totally Freudian, e.g. "m-f-er", "asshole"