

The Six Facets of Understanding

Facet 1—EXPLANATION

Sophisticated and apt explanations and theories that provide knowledgeable and justified accounts of events, actions, and ideas. Why is that so? What explains such events? What accounts for such action? How can we prove it? To what is the action connected? How does this work?

Facet 2—INTERPRETATION

Narratives, translations, metaphors, images, and artistry that provide meaning. What does it mean? Why does it matter? What of it? What does it illustrate or illuminate in human experience? How does it relate to me? What makes sense?

Facet 3—APPLICATION

Ability to use knowledge effectively in new situations and diverse contexts. How and where can we apply this knowledge, skill, process? How should my thinking and action be modified to meet the demands of this particular situation?

Facet 4—PERSPECTIVE

Critical and insightful points of view. From whose point of view? From which vantage point? What is assumed or tacit that needs to be made explicit and considered? What is justified or warranted? Is there adequate evidence? Is it reasonable? What are the strengths and weaknesses of the idea? Is it plausible? What are its limits? What is a novel way to look at this?

Facet 5—EMPATHY

The ability to get inside another person's feelings and worldview. How does it seem to you? What do they see that I don't? What do I need to experience if I am to understand? What was the author, artist or performer feeling, seeing, and trying to make me feel and see?

Facet 6—SELF-KNOWLEDGE

The wisdom to know one's ignorance and how one's patterns of thought and action inform as well as prejudice understanding. How does who I am shape my views? What are the limits of my understanding? What are my blind spots? What am I prone to misunderstand because of prejudice, habit, and style? How do I learn best? What strategies work for me?

Templates
Stage 1
Stage 2
Stage 3
Peer review
Exercises
Process sheets
Glossary

1-Page Template with Questions

Stage 1—Desired Results	
<p>Established Goals: (G)</p> <ul style="list-style-type: none"> What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address? 	
<p>Understandings: (U) <i>Students will understand that . . .</i></p> <ul style="list-style-type: none"> What are the big ideas? What specific understandings about them are desired? What misunderstandings are predictable? 	<p>Essential Questions: (Q)</p> <ul style="list-style-type: none"> What provocative questions will foster inquiry, understanding, and transfer of learning?
<p>Students will know . . . (K)</p> <ul style="list-style-type: none"> What key knowledge and skills will students acquire as a result of this unit? What should they eventually be able to do as a result of such knowledge and skill? 	<p>Students will be able to . . . (S)</p>
Stage 2—Assessment Evidence	
<p>Performance Tasks: (T)</p> <ul style="list-style-type: none"> Through what authentic performance tasks will students demonstrate the desired understandings? By what criteria will performances of understanding be judged? 	<p>Other Evidence: (OE)</p> <ul style="list-style-type: none"> Through what other evidence (e.g., quizzes, tests, academic prompts, observations, homework, journals) will students demonstrate achievement of the desired results? How will students reflect upon and self-assess their learning?
Stage 3—Learning Plan	
<p>Learning Activities: (L)</p> <p>What learning experiences and instruction will enable students to achieve the desired results? How will the design</p> <p>W = Help the students know Where the unit is going and What is expected? Help the teacher know Where the students are coming from (prior knowledge, interests)?</p> <p>H = Hook all students and Hold their interest?</p> <p>E = Equip students, help them Experience the key ideas and Explore the issues?</p> <p>R = Provide opportunities to Rethink and Revise their understandings and work?</p> <p>E = Allow students to Evaluate their work and its implications?</p> <p>T = Be Tailored (personalized) to the different needs, interests, and abilities of learners?</p> <p>O = Be Organized to maximize initial and sustained engagement as well as effective learning?</p>	

1-Page Template

Stage 1—Desired Results	
Established Goals: G	
Understandings: <i>Students will understand that . . .</i> U	Essential Questions: Q
<i>Students will know . . .</i> K	<i>Students will be able to . . .</i> S
Stage 2—Assessment Evidence	
Performance Tasks: T	Other Evidence: OE
Stage 3—Learning Plan	
Learning Activities: L	

Sample 1-Page Template

Mathematics, High School

Stage 1—Desired Results

Established Goals: G
Students will . . .

- Determine the conditional probability of two events (Bayes' law).
- Solve probability problems involving permutations, combinations, and conditional probability.

From the Alberta (Canada) Mathematics Program of Studies

<p>Understandings: U <i>Students will understand that . . .</i></p> <ul style="list-style-type: none"> • Probability and expectation can be used to make (not always obvious) predictions. • The best way to count is often not by counting. 	<p>Essential Questions: Q</p> <ul style="list-style-type: none"> • How can we predict the outcomes of events? • How can we quantify our predictions about outcomes occurring? • How is expectation different from probability? • What is the best way of making predictions?
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<p><i>Students will know . . .</i> K</p> <ul style="list-style-type: none"> • How to count using fundamental counting principle, permutations, and combinations. 	<p><i>Students will be able to . . .</i> S</p> <ul style="list-style-type: none"> • Calculate probabilities, z-scores for using normal distribution, and tables. • Calculate probabilities using binomial distribution.
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Stage 2—Assessment Evidence

<p>Performance Tasks: T</p> <ul style="list-style-type: none"> • <i>Performance Assessment Outline: Design a game that you know you will win (in the long run). Convince us by using combinatorics, probability, and the expectation that you are guaranteed to win. Your game should be easy to describe to potential players, and the outcome of the game should be ambiguous at first glance, or it should seem like the other players will win.</i> 	<p>Other Evidence: OE</p> <ul style="list-style-type: none"> • Have students assess their own game as well as several others for fairness and according to a provided rubric. • Journal entries: Compare and contrast combinations and permutations; How is expectation different from probability? • Quizzes and assignments including constructed response tasks.
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Stage 3—Learning Plan

Learning Activities: L

- Bus problem to motivate and initiate unit: given an $n \times m$ grid, how many ways are there to get from the farthest SW corner to the farthest NE corner, traveling only north or east? This leads to the use of combinations, permutations including repetition, and Pascal's Triangle and the binomial theorem. (Problem-based learning)
- Play a game (students can start thinking about performance task). Bet 1 cent, then roll 4 die. I pay you the total of your four die, in cents, unless you roll one or more pairs. In that case, you pay me the total shown on your four die.
- Plinko (from the Price is Right)—another opportunity for problem-based learning. Students will have to analyze Plinko-type games and the expected results.
- Probability distributions: How can predictions be made for large groups of people. (Why does car insurance cost more for boys than girls?)
- Complete exercises from chapters 7–9 of Mathpower.