

Backward Design Planning Sheet: Baseflow Separation Comparison

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Stage 1—Desired Results		
ESTABLISHED GOALS <ul style="list-style-type: none"> - Have the audience develop hands-on experience with baseflow separation methods - Participants can identify key variables of uncertainty - They can describe the importance of baseflow 	<i>Transfer</i>	
	<i>Students will be able to independently use their learning to...</i> Understand and demonstrate the variability and uncertainty in baseflow estimation techniques, and how they impact hydrologic forecasting accuracy	
	<i>Meaning</i>	
	UNDERSTANDINGS <ul style="list-style-type: none"> - What is baseflow? - Why is baseflow important? 	ESSENTIAL QUESTIONS <ul style="list-style-type: none"> - What are the variables that affect baseflow estimation? - Which baseflow separation methods are most useful for the task at hand?
	<i>Acquisition</i>	
	<i>Students will know...</i> <ul style="list-style-type: none"> - Descriptions and context of two baseflow separation techniques - The importance of models, as well as their variance and uncertainty 	<i>Students will be skilled at...</i> <ul style="list-style-type: none"> - The ability to calculate baseflow values for a catchment

Stage 2—Evidence and Assessment	
Evaluative Criteria	Assessment Evidence
<ul style="list-style-type: none"> - Describe baseflow definition/significance - Compare baseflow separation techniques - Identify variables influencing baseflow separation - Calculate baseflow - Reflection via self-assessment - Collaboration and engagement 	PERFORMANCE TASK(S): <ul style="list-style-type: none"> - Calculated outputs of two baseflow methods - In-class case study
	OTHER EVIDENCE: <ul style="list-style-type: none"> - Group discussion about results and factors/variables that influenced the results - Student self-assessment and reflection: <ul style="list-style-type: none"> o 3-2-1 Technique o Survey to collect feedback for future lesson plan

Stage 3—Learning Plan
<i>Summary of Key Learning Events and Instruction</i>

1. Introductory PowerPoint to instruct students on:
 - a. What baseflow is
 - b. What variables are used to calculate baseflow
 - c. The straight-line method for baseflow separation
 - d. The Eckhardt method for baseflow separation
2. Example case study of a singular catchment to compare two baseflow estimation techniques to one another. This will lead to a class discussion based on the following questions:
 - a. Which method was easier to complete?
 - b. Which method required more variables and input information?
 - c. Which do you all think is more accurate?
3. Divide the workshop participants into groups. A worksheet with a separate catchment example will be handed out. They will apply the collective example of separation techniques in their groups. The worksheet will include discussion questions to ponder and then be discussed as a whole class.
 - a. Are there ways to confirm if these methods are accurate?
 - b. What measurements could you take to help assist in calculating baseflow?
 - c. If you had to make a decision, which baseflow model would you trust the most?
4. Exit ticket: A survey organized via the 3-2-1 method to assess curriculum organization and facilitator improvements for further workshop development