3.7  Developing Mathematical Proficiency

Instructions: Record student actions, including verbal and written. After the lesson, consider how these actions map to the five strands.

***Five Strands of Mathematical Proficiency* (NRC, 2001)**

To what extent do students understand the concepts? Do students understand the operations and procedures they are using? Do they see relationships or connections  between ideas?

To what extent do students use procedures flexibly and/or efficiently? Do students select a  computational approach that best suits the problem (efficient method) or solve all problems  of the same type the same way?

In what ways do students demonstrate that they can come up with their own approach to  a problem? Do students choose and use representations to support their thinking? Do they  pick appropriate approaches to solve the problem?

In what ways do students monitor their problem-solving, seeing it if is working for them and  changing the process as needed to reach a solution? Do students abandon one approach and pursue another?

To what extent do students demonstrate a “habit of mind” that mathematics makes sense and is useful? Do students demonstrate confidence in designing their own solution strategies  and persevering as they encounter challenging problems?

1. **Conceptual Understanding**
2. **Procedural Proficiency**
3. **Strategic Competence**
4. **Adaptive Reasoning**
5. **Productive Disposition**

***Data Gathering***

|  |  |  |
| --- | --- | --- |
| ***Time*** | ***Student Statement, Action, or Observed Work*** | ***Mathematical Proficiency (check all that apply)*** |
|  |  | * Conceptual Understanding   □ Procedural Proficiency   * Strategic Competence * Productive Disposition * Adaptive Reasoning |
|  |  | * Conceptual Understanding   □ Procedural Proficiency   * Strategic Competence * Productive Disposition * Adaptive Reasoning |
|  |  | * Conceptual Understanding   □ Procedural Proficiency   * Strategic Competence * Productive Disposition * Adaptive Reasoning |
|  |  | * Conceptual Understanding   □ Procedural Proficiency   * Strategic Competence * Productive Disposition * Adaptive Reasoning |
|  |  | * Conceptual Understanding   □ Procedural Proficiency   * Strategic Competence * Productive Disposition * Adaptive Reasoning |

Retrieved from the companion website for *Everything You Need for Mathematics Coaching: Tools, Plans, and A Process That Works: Grades K–12* by Maggie B. McGatha and  Jennifer M. Bay-Williams with Beth McCord Kobett and Jonathan A. Wray. Thousand Oaks, CA: Corwin, [www.corwin.com.](http://www.corwin.com/) Copyright © 2018 by Corwin. All rights reserved.  Reproduction authorized only for the local school site or nonprofit organization that has purchased this book.