

Common Core Standards and Differentiated Instruction

toolkits

Getting Personalized

“Personalization refers to instruction that is paced to learning needs [i.e. individualized], tailored to learning preferences [i.e. differentiated], and tailored to the specific interests of different learners. In an environment that is fully personalized, the learning objectives and content as well as the method and pace may all vary.”

—Transforming American Education: Learning Powered by Technology
U.S. Department of Education, 2010

As our world diversifies, so must curriculum and instruction. Differentiation is an approach incorporating many effective methods and strategies. While it was born from gifted and special education programs, it has become a dynamic way of accommodating a range of readiness levels and learning styles. Differentiation also obviates the need for costly interventions that can arrive too late to create meaningful academic change.

Differentiated instruction is tailored for students of different levels of achievement; allowing students to choose—with teacher guidance—ways to learn, ways to demonstrate what they have learned, and to progress at their own pace through new material. It does not focus on student weaknesses. Rather, it focuses on a student’s strengths by structuring class assignments so they require higher levels of critical thinking while permitting a range of responses geared to different learning styles and readiness. Differentiation also speaks to a student’s levels of interest in a topic, providing opportunities to explore subjects in which they find personal meaning. In these ways, differentiation gives students incredible ownership of their own learning.

The Common Core Approach to Differentiating Instruction

The Common Core State Standards for Mathematics require that “all students must have the opportunity to learn and meet the same high standards if they are to access the knowledge and skills necessary in their post-school lives.”

Researched-based Universal Design for Learning (UDL) has provided a structure for meeting the needs of diverse learners, asking teachers to consider multiple means of engagement. UDL offers ideal settings for multiple entry points for students and minimizes instructional barriers to learning.

Each Module Overview orients teachers to appropriate scaffolds, with individual lessons containing marginal notes highlighting specific scaffolds that might be employed when working with different student populations. These tips are strategically placed in the lesson where the teacher might use the strategy to the best advantage.

These scaffolds are posed to change how a learner accesses information and demonstrates learning while not altering the instructional level, content, or performance criteria. Rather, they provide students with choices in how they access content and demonstrate their knowledge and ability.

Most lessons contain a suggested teaching sequence that moves from simple to complex, allowing teachers to locate specific steps that students are struggling with or stretch out problems for students who desire a challenge. Within a given time frame, all students are expected to do their personal best, working at their maximum potential.

Another vital component is the constant flow of data from student work. Daily tracking for each lesson as well as mid- and end-of-module assessment tasks are essential in determining student understanding at benchmark points. Such data flow keeps teaching practice firmly grounded in student learning and makes incremental progress possible. When feedback is provided, students understand that making mistakes is part of the learning process. Likewise, teachers receive the opportunity to quickly assess if students need to start at a simpler level or just need more monitored practice. As the student acquires greater skill, more complexity is added and proficiency grows.

Scaffolds for English Language Learners

English language learners provide a variety of experiences that can add to the classroom environment. Their differences present an opportunity to enrich the teaching and learning. Here are some Common Core approaches when teaching English Language Learners math, for instance.

- Introduce essential terms and vocabulary prior to the mathematics instruction.
- Clarify, compare, and make connections to math words in discussion.
- Highlight critical vocabulary in discussion.
- Couple teacher-talk with “math-they-can-see,” such as models.
- Let students use models and gestures to calculate and explain.
- Teach students how to ask questions to extend “think-pair-share” conversations.

- Connect language with concrete and pictorial experiences.
- Listen intently in order to uncover the math content in the students’ speech.
- Cultivate a math discourse of synthesis, analysis, and evaluation, rather than simplified language.
- Let students choose the language they prefer for arithmetic computation and discourse.

Overall Differentiated Techniques for English Language Learners

- Provide multiple means of action, expression and engagement.
- Know, use, and make the most of student cultural and home experiences.
- Build on the student’s background knowledge.
- Check for understanding frequently to benefit those who may shy away from asking questions.
- Couple teacher-talk with illustrative gestures.
- Vary your voice to guide comprehension.
- Speak dynamically with expression.
- Make eye-to-eye contact and speak slowly and distinctly.
- Vary the grouping in the classroom.
- Provide sufficient wait time to allow the student to process the meanings in the different languages.
- Keep teacher-talk clear and concise.
- Point to visuals while speaking, using your hands to clearly indicate the image that corresponds to your words.
- Get students up and moving, coupling language with motion.
- Celebrate improvement. Intentionally highlight student math success frequently.
- Provide a variety of ways to respond: oral, student boards, concrete models, pictorial models, pair share, small group share, etc.

- Treat first-language and experiences as resources, not as obstacles.
- Provide oral options for assessment rather than multiple-choice.
- Support oral or written response with sentence frames.
- Ask questions to probe what students mean as they attempt expression in a second language.
- Scaffold questioning to guide connections, analysis, and mastery.

Scaffolds for Students with Disabilities

Individualized education programs (IEP)s or Section 504 Accommodation Plans should be the first source of information for designing instruction for students with disabilities. Here are some Common Core approaches when teaching students with disabilities math, for instance: with suggestions as to how these platforms may be used.

- Teach from simple to complex, moving from concrete to representation to abstract at the student’s pace.
- Clarify, compare, and make connections to math words in discussion, particularly during and after practice.
- Partner key words with visuals and gestures.
- Connect language with concrete and pictorial experiences.
- Couple teacher-talk with “math-they-can-see,” such as models. Let students use models and gestures to calculate and explain.
- Teach students how to ask questions to extend “think-pair-share” conversations.
- Couple number sentences with models.
- Enlarge print for visually impaired learners.
- Use student boards to work on one calculation at a time.
- Invest in or make math picture dictionaries or word walls.
- Elaborate on the problem-solving process.

- Read word problems aloud.
- Post a visual display of the problem-solving process.
- Talk through the problem-solving process step-by-step to demonstrate thinking process.
- Before students solve, ask questions for comprehension.
- Focus on students’ mathematical reasoning, not their accuracy in language.
- Listen intently in order to uncover the math content in the students’ speech.
- Provide learning aids, such as calculators and computers, to help students focus on conceptual understanding.

Overall Differentiated Techniques for Students with Disabilities

- Provide a variety of ways to respond: oral; choral; student boards; concrete models; pictorial models; pair share; and small group share. For example: Use student boards to adjust “partner share” for deaf and hard-of-hearing students. Partners can jot questions and answers to one another on slates. Use vibrations or visual signs to elicit responses from deaf/hard of hearing students.
- Vary choral response with written response on student boards to ease linguistic barriers. Support oral or written response with sentence frames.
- Adjust oral fluency games by using student and teacher boards or hand signals. Use visual signals or vibrations to elicit responses.
- Adjust wait time for interpreters of deaf and hard-of-hearing students.
- Give students a chance to practice the next day’s sprint beforehand.
- Give students a few extra minutes to process the information before giving the signal to respond.
- Assess by multiple means, including “show and tell” rather than written.
- Have students check off or highlight each step as they work.

- Teach students to use self-questioning techniques.
- Concentrate on goals for accomplishment within a time frame vs. a task frame.
- Make eye-to-eye contact and keep teacher-talk clear and concise. Speak clearly when checking answers for sprints and problems.
- Check frequently for understanding.
- Assign a buddy or a group to clarify directions or process.
- Use songs, rhymes, or rhythms to help students remember key concepts.
- Point to visuals and captions while speaking, using your hands to clearly indicate the image that corresponds to your words.

- Incorporate activity. Get students up and moving, coupling language with motion. Make the most of fun exercises for activities.
- Follow predictable routines to allow students to focus on content rather than behavior.
- Re-teach the same concept with a variety of fluency games.
- Allow students to lead group and pair-share activities.
- Students with disabilities may require Braille, large print, audio, or special digital files. For student materials that satisfy the National Instructional Materials Accessibility Standard (NIMAS) format, visit www.p12.nysed.gov/specialed/aim.

Scaffolds for Students Below Grade Level

Teaching students who are performing below grade level involves more than simply spending more time on subjects. Here are some Common Core approaches to accommodating students who are below grade level in your class.

- Model problem-solving sets with drawings and graphic organizers, giving many examples and visual displays.
- Guide students as they select and practice using their own graphic organizers and models to solve.
- Use direct instruction for vocabulary with visual or concrete representations.
- Use explicit directions with steps and procedures enumerated.

- Guide students through initial practice promoting gradual independence.
- Use alternative methods of delivery of instruction such as recordings and videos that can be accessed independently or repeated if necessary.
- Scaffold complex concepts and provide leveled problems for multiple entry points.
- First use manipulatives or real objects, then make transfer from concrete to pictorial to abstract.
- Have students restate their learning for the day. Ask for a different representation in the restatement.
- Encourage students to explain their thinking and strategy for the solution.
- Choose tasks that are “just right” for learners but teach the same concepts.
- Clearly model steps, procedures, and questions to ask when solving.
- Cultivate peer-assisted learning interventions for instruction and practice. Have students work together to solve and then check their solutions.
- Teach students to ask themselves questions as they solve: What is being asked?; Do I have all of the information I need?; What do I do first?; What is the order to solve this problem?
- Practice routine to ensure smooth transitions.
- Set goals with the students regarding next steps and what to focus on next.

Scaffolds for Students Above Grade Level

Accommodating students who are above grade level is a unique challenge. It isn't about rushing through a curriculum, but about truly engaging your students so that they avoid the trap of boredom that can make even high-achievers squander their promise.

- Teach students how to ask questions to extend “think-pair-share” conversations. Model and post conversation “starters.”
- Incorporate written reflection, evaluation, and synthesis.
- Allow creativity in expression and modeling solutions.
- Encourage students to explain their reasoning both orally and in writing.
- Extend exploration of topics by means of challenging games, puzzles, and brain teasers.
- Offer choices of independent or group assignments for early finishers.
- Encourage students to notice and explore patterns and to identify rules and relationships. Have students share their observations in discussion and writing.
- Foster their curiosity. Facilitate research and exploration through discussion, experiments, Internet searches, trips, etc.
- Have students compete in a secondary simultaneous competition while peers are completing the sprint.

- Let students choose their mode of response: written, oral, concrete, pictorial, or abstract.
- Increase the pace. Offer two word problems to solve, rather than one. Adjust difficulty level by increasing the number of steps. Adjust difficulty level by enhancing the operation.
- Let students write word problems to show mastery and/or extension of the content.
- Push student comprehension into higher levels of Bloom's Taxonomy.
- Celebrate improvement in completion time.
- Accept and elicit student ideas and suggestions for ways to extend games.
- Cultivate student persistence in problem-solving and do not neglect their need for guidance and support.

Technology Fuels Innovation and Differentiation

"In the past when differentiating instruction, a teacher couldn't manage all the data for 25 kids in different sections, but along comes technology, and thank goodness for all of us that want to manage large systems."

—Roberta Selleck, Superintendent, Adams County School District 50 (CO) Personalized Learning Symposium, August 2010

When Amazon recommends other products based upon a customer's previous selections, they are specifically marketing to the individual. Such industry practices contrast to simply mass marketing one product or service and raises question of how personalization can be adapted to education to ensure that student's individual needs are met.

Even the best teachers, though, struggle to find the time and resources to differentiate effectively. Technology can help educators to deliver meaningful differentiated instruction, avoiding unnecessary

struggle while saving time and building capacity. It can support teachers to make learning decisions about lesson planning, student grouping, curriculum advancement and online learning programs.

Individual students receive response to intervention when blended learning systems indicate students are falling behind or advancing. Parents and caregivers can become better advocates for their child's learning, enabled with the knowledge of their individual child's learning performance. School leaders are better able to support their teachers with the knowledge gained from frequent student learning measures and regularly-sourced class roster performance visualizations. As students advance from simple concepts to more complex concepts, the different problems provide opportunities for teachers to either (a) break problems down for students struggling with a next step, or (b) stretch problems out for those hungry for greater challenges.

However, most teachers do not have the experience or training to properly differentiate instruction. This is why teachers require and deserve support through on-going and sustainable professional development to acquire these skills and fully implement personalized learning. This includes a comprehensive set of tools and resources, easy access to data, curriculum and content resources, and technology to implement the lessons and resources.

The role of the teacher dramatically changes with personalized learning, as it emphasizes a shift from a single teacher delivering knowledge to his classroom of students to teachers as facilitators of learning, often as a part of a team of teachers with differentiated roles. While the teacher directed model has its place, this facilitator model is a significant departure from the way teachers have been trained to teach and learned through themselves as children. Through further differentiation of the teacher's role, student-teacher ratios and instructional relationships can be varied to meet the diversity of student needs.