

PROFESSIONAL REFERENCE FOR TEACHERS**● Meeting Individual Needs**

Obviously, to teach effectively you must be able to reach every individual in your class. This is seldom easy, given the diverse nature of most of today's classrooms. In addition, certain students present special challenges. Dealing adequately with these students requires special preparation and strategies. In many cases a minimal amount of preparation is sufficient to make the classroom a place where all can learn. Some of the more common situations you are likely to encounter are discussed below.

Learners Having Difficulty

Learners having difficulty are those who, for any number of reasons, are liable to perform poorly and who have a high probability of dropping out of school. This program is engaging and interesting throughout, appealing to all students. Clear easy-to-read prose and straightforward, attractive graphics reduce the potential for students to become bored.

Additional activities and teaching suggestions for learners having difficulty are provided in the wraparound margins of the Annotated Teacher's Edition.

Additional strategies for meeting the needs of learners having difficulty can be found in two articles in this booklet. In the article "[Motivate the Unmotivated with Scientific Discrepant Events](#)," an experienced teacher shares his technique for piquing students' interest in science. If behavioral problems are the cause of students' difficulty, you may find reading "[Strategies for Improving Student Behavior](#)," to be helpful.

Sample Strategy for Meeting Individual Needs

Learners Having Difficulty Assemble a group of objects for students to investigate, observe, and take apart if they wish. Possible objects include a flashlight, a pen, and a stapler. After students examine each object, ask them to speculate about how each object works. To get them started, suggest that they make a list or draw a diagram of the different parts in each object. Then they can proceed by writing down the possible function of each part. Ask students to summarize the ways in which they behaved like scientists during this activity.

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This program is ideal for students who are not proficient in English. Specific suggestions for second-language learners are found in the wraparound margins of the Annotated Teacher's Edition. Also, when you are looking for strategies to involve second-language learners in lessons, look for activities that have a sheltered English label.

Additional strategies for second-language learners or other students struggling with the text include Reading Strategies that can also be found in the Annotated Teacher's Edition. With these strategies you can guide students through the lesson using mnemonics, prediction guides, or in-class activities. Also look for the Reteaching heading that suggests another way to present an important concept in a lesson.

Naturally, students for whom English is a second language have special educational needs. To address their needs and to effectively teach learners with limited English proficiency requires a basic knowledge of relevant issues. The article, "[Teaching Science to Students with Limited English Proficiency](#)," lends insight into these issues as well as provides a method for planning lessons that effectively address the issues.

Gifted Learners

The difficulty of teaching gifted students lies in keeping them interested, motivated, and challenged. Gifted students who are inadequately challenged may become bored, withdrawn, or even openly disruptive. This program includes many activities suitable for even the most advanced student. Open-ended activities, in particular, are especially suited for gifted students.

Additional activities and teaching suggestions for gifted students are found in the wraparound margins of the Annotated Teacher's Edition.

This program emphasizes creative problem solving. In many cases there is no single right answer to a problem or question, so students' answers can reflect their individual abilities. This approach is ideal for gifted students as they may extend the activities to fit their interests and talents. For example, the following strategy for advanced learners comes from an Annotated Teacher's Edition in this series. A fresh perspective on this topic and additional strategies for teaching gifted students are explained in "[Meeting the Needs of the Academically Gifted](#)."

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Are all parts of your classroom accessible to all students? Adapt the classroom to enable physically impaired students to engage in the same activities as other students. Encourage your students to assist physically impaired students. Make your classroom as easy to move about in as possible. Remove or bypass any obvious barriers. If the student uses a wheelchair, make the aisles wide enough to accommodate the chair. Make sure that the student can reach any equipment he or she needs.

As much as possible, adapt the classroom to make it possible for physically impaired students to engage in the same activities as other students. Use a mobile demonstration table so that it can be moved to different areas of the room for maximum visibility.

Sample Strategy for Meeting Individual Needs

Advanced Learners Encourage interested students to investigate Darwin's voyage and similar long-distance travel by explorers in the 1800s in greater detail. Topics for reports include the types of ships used for travel in that era, the kinds of food eaten by explorers, and the sophistication and thoroughness of maps in the 1800s.

Visually Impaired Students

Seat students with marginal vision near the front of the room to maximize their view of both you and the chalkboard, or assign a student to make copies of what you write. You could also assign a neighboring student to quietly explain all visual materials in detail as they are presented.

Students who are completely blind should be allowed to become familiar with the classroom layout before the first class begins. Promptly inform these students of any changes to your classroom layout. Whenever possible, provide Braille or taped versions of all printed materials. Your school librarian may be able to help procure these items. Students who are blind may also use hand-held devices for converting written text into speech.

PROFESSIONAL REFERENCE FOR TEACHERS● **Meeting Individual Needs** *continued***Speech-Impaired Students**

Mainstreaming speech-impaired students is generally not very difficult. Patience is essential when dealing with speech-impaired students, however. For example, resist the temptation to finish sentences for a student who stutters. Also pay attention to nonverbal cues, such as facial expression and body language.

Be supportive and encouraging. You need not leave the speech-impaired student out of normal classroom discussions. For example, you may call on a speech-impaired student to answer a question and then allow the student to write out his or her response on the chalkboard or overhead projector. Use multisensory materials whenever possible to create a more comfortable learning environment for the speech-impaired student.

Hearing-Impaired Students

If you have students with hearing-impairments in your class, remember to always face the class while speaking. Minimize classroom noise, and arrange seating in a circle or semicircle so that students can see one another. This arrangement facilitates speech reading. Speak in simple, direct language and avoid digressions or sudden changes in topic. During class discussions, periodically summarize what students are saying and repeat students' questions before answering them. Use visual media such as filmstrips, overhead projectors, and close-captioned films when appropriate. You might arrange a buddy system in which another student provides copies of notes about activities and assignments.

A student who is completely deaf may require a sign-language interpreter. If so, let the student and the interpreter determine the most convenient seating arrangement. When asking the student a question, be sure to look at the student, not at the interpreter. If the student also has a speech impairment, group assignments for oral reports may be advisable.

Learning-Disabled Students

Learning disabilities are any disorders that obstruct a person's listening, reasoning, communication, or mathematical abilities, and they range from mild to severe. An estimated 2 percent of all adolescents have some type of learning disability. Learning disabilities are the most common type of disability. To help learning-disabled students succeed, provide a supportive and structured environment in which rules and assignments are clearly stated. Use familiar words and short, simple sentences. Repeat or rephrase your instructions as needed.

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Students may require extra time to complete exams or assignments, with the amount of extra time being dependent on the severity of their disability. Some students may need to tape-record lectures and answers to exam questions. For those who have difficulty organizing materials, you might provide chapter or lecture outlines for them to fill in. Having peer tutors work with learning-disabled students on specific assignments and review materials can be effective.

Computer-assisted instruction is an extremely useful tool for some learning-disabled students. This mode of instruction can even help these students develop good learning skills. For learning-disabled students, computers serve as a tireless instructor with unlimited patience. In addition, students receive simplified directions; proceed in small, manageable steps; and receive immediate reinforcement and feedback with computerized instruction.

Students with Behavioral Disorders

Behavioral disorders are emotional or behavioral disturbances that hinder a student's overall functioning. The behaviorally impaired may exhibit any of a variety of behaviors, ranging from extreme aggression to complete passivity.

Obviously, no single teaching strategy can accommodate all behavioral disorders. In addition, behavioral psychologists disagree on the best way to deal with students who have behavioral disorders. As a general rule, try to be fair and consistent yet flexible in your dealings with behaviorally disabled students. Make sure to state rules and expectations clearly. Reinforce desirable behavior or even approximations of such behavior, and ignore or mildly admonish undesirable behavior.

Because learning disabilities often accompany behavioral disorders, you might also wish to refer to the guidelines for learning disabilities.