

Topics in Special Education

Background

Recent events in education have led to dramatic changes in the way in which students with disabilities are currently being served. Schools are required to provide access to the general education curriculum, in the least restrictive environment, by giving students with disabilities the opportunity to achieve the same high standards as all other students as well as participate in accountability measurements. As a result of these legislative mandates, special education and general education teachers find they need to develop new skills and strategies to meet these challenges. These mandates have required teachers to examine their service delivery models and to build new collaborative partnerships, or reinforce existing partnerships, needed to support students with disabilities in general education classrooms. The general education teachers are able to identify the intended learner outcomes for the lesson. The special education teachers can work with the general education teachers to identify the barriers to students' demonstrating the outcomes. Together the general education and special education teachers will have to collaborate in order to design a universal learning environment that meets the needs of ALL students.

Within this learning environment, the pressure is on for teachers to have ALL students in their classes show progress in the general education curriculum and meet statewide educational standards. It is imperative that specific modifications and accommodations are provided for some students in order for them to be successful. These specifications are outlined in those students' Individual Education Plan or Section 504 Plan and can often be implemented in the general education classroom. To better understand accommodations and modifications, a definition and examples follow:

An **accommodation** is a change in **how** a student accesses and demonstrates learning, but it does not substantially change the instructional content.

Accommodations are available to all students. A teacher may allow a variety of response formats with the same end product (verbal explanation, written explanation, visual demonstration). A teacher may provide a variety of presentation strategies (concrete example, student copy of overhead materials, written directions, oral/taped directions). A teacher may alter the format of lessons (fewer problems per page, more space between problems, computer generated materials). In each of these examples, the end product is the same, but means to get there is accommodated depending on student need.

A **modification** is a change in **what** a student is expected to learn and demonstrate that does substantially change the instructional content. When implementing modifications, the level of difficulty for a particular assignment is adjusted based on the need of the student. In some cases, the reading level is adjusted for required reading or the degree or depth of subject matter is adjusted.

Through cooperative planning, the general education and special education teachers can plan lessons, implementing accommodations and modifications that will allow the greatest number of students to have access to the general curriculum and achieve at their highest potential.

General Accommodations

The following accommodations provide some suggestions for changes in the classroom environment, instruction and assignments to address student needs. When reviewing these suggestions, keep in mind that any accommodations you try must be based on an individual student's need. You may find that students from multiple disability categories would benefit from accommodations on this list.

- Reduce the amount of new material to be covered.
- Chunk tasks into smaller parts.
- Adjust reading level.
- Re-teach concepts.
- Read or tape directions/questions.
- Allow extra time for completion of assignments.
- Use partner or group effort.
- Provide step by step written and verbal instructions-prioritize tasks.
- Read and explain story problems.
- Pre-teach vocabulary, provide a word bank.
- Provide additional space to show work.
- Reduce the number of problems/page – can use blocking or multiple pages

Accommodations: For Fine Motor Challenges

The following accommodations provide suggestions for changes in classroom materials and assignments that will address the needs of students who have fine motor challenges. Individual student needs must be considered and may require a combination of accommodations to allow for independence to the greatest extent possible.

Manipulatives

White and Black Tiles

1. Use wooden blocks – painted black on one side and white on the opposite side
2. Use wooden blocks – glue black and white tile on opposite sides
3. Use ceramic tiles
4. Use thick foam, cut into large blocks – paint or use marker to identify black and white sides
5. Use a computer program to create virtual fractions

Circles

1. Laminate circles
2. Use cardboard to make circles and pieces
3. Attach dycem to circles

4. Provide a work tray – circle template (assists with fraction piece placement)
5. Use a computer program to create virtual fractions

Circle Storage

1. Use a pocket folder for storage-accordion folder
2. Use a pocket folder made with clear plastic sewn on study cardboard, could be held together with O-ring or put in a 3-ring binder

Paper folding

1. Use partner to assist with paper folding
2. Provide examples and discuss problem solving method
3. Provide heavier paper, bigger strips with fold lines marked

Worksheets

1. Scan into computer with electronic worksheet application for recording and completing assignments.
2. Allow a verbal response, if writing is an issue.
3. Increase space between problems for writing or drawing

Accommodations: **For Vision Challenges**

The following accommodations provide suggestions for changes in the materials, instruction, and assignments that will address the needs of students who have vision challenges. Individual student needs must be considered and may require a combination of accommodations to allow for independence to the greatest extent possible.

General Accommodations

- Say the words/describe your actions as you are using manipulatives or writing/drawing
- Provide a desk copy of materials used on the overhead
- Provide low vision aides – magnifiers, reading glasses, computer technology
- Provide student copy of worksheets presented on the overhead
- Use high contrast for fraction pieces, worksheets.

Manipulatives

Black and White Tiles

1. Add tactile identifier- by shape, color or texture (dependent on individual student need)
2. Use ceramic tiles with good color contrast. Tactile difference is built in.
3. Use virtual fractions computer program with vision aide technology
4. Use two different shapes

Circles

1. Add tactile identifiers for each fractional piece – Braille, texture. The student may not be able to discriminate between the various colors. Shape may also be difficult as the pieces are so similar.
2. Use virtual fractions computer program with vision aide technology

Circle Storage

1. Use a pocket folder for storage-accordion folder
2. Provide identifier on each folder pocket that matches the circle piece – Braille or texture

Paper Folding

1. Use different colors of paper for each fraction.
2. Use marker to “outline” the edges of the paper strip.
3. Provide tactile fold lines

Worksheets

1. Large print
2. Increase spacing between problems leaving plenty of space to show work.
3. High contrast print
4. Tactile graphics
5. Colored or solid shading on shapes- designer lines could be confusing

Accommodations: **For Students with Learning Disabilities**

The following accommodations are suggestions for changes in instruction, materials, and assignments that can address the needs of students with learning disabilities. These are general in nature and their implementation must be based on individual student needs.

General Accommodations

- Provide many varieties of examples and repeated experiences to make the connection between their knowledge base and the symbolic notation.
- Slow the pace of presentation
- Ask students to verbalize what they are doing
- Allow extra time and practice with manipulatives
- Provide both written and verbal instructions
- Provide step by step instructions
- Adjust reading level and/or present information orally

Resources: **Websites**

<http://www.matti.usu.edu/nlvm/nav/vlibrary.html>

National Library of Virtual Manipulatives for Interactive Mathematics

Numerous activities similar to RNP curriculum with ability to manipulative size, shape, color of fractions. Activities can be presented as circles or bars.

<http://www.aaamath.com>

AAA Math

Numerous activities grouped by grade level. These pages illustrate and provide interactive arithmetic exercises and problems. They contain a series of basic math lessons which are a resource that can be used by math students in formal elementary education math classes, home schooling or elsewhere.

<http://www.visualfractions.com/index.htm>

Visual Fractions

Identify Fractions with Lines or Identify Fractions with Circles will give instruction and practice in identifying the numerator and denominator.

<http://arcytech.org/java/fractions/>

ARCYTECH – Improving Education through Technology

This lesson will allow students to learn, through the hands-on use of virtual fraction bars, the following concepts: a good understanding of fractions, equivalent fractions, ordering and comparing fractions, basic addition and subtraction of fractions, and fraction size notation.

http://www.mathcats.com/microworlds/fractions_overview.html

Math Cats

This site provides a grid page and a pie page where students can create and illustrate fractions. It also has the capability of printing screen shots so students can save the fraction examples they have created.

Resources: Software

Intellipics Studio

An authoring tool that allows teachers to create engaging interactive activities. Graphics can be used to make virtual fractions.

www.intellitools.com

Intellitools, Inc.

\$139.95

Math Pad Plus

MathPad Plus: Fractions and Decimals adds an exciting array of new features! Students can do addition, subtraction, multiplication and division using fractions and decimals. Teachers can enter problems from worksheets or textbooks so students with learning disabilities can work on the same problems as their peers.

www.intellitools.com

Intellitools, Inc.

\$99.95

Intellimathics

This multi-featured tool makes manipulatives accessible to students and supports almost every area of your math curriculum.

www.intellitools.com

Intellitools, Inc.

\$139.95

Test Talker

TestTalker is a software solution to help individuals be more successful with test taking, worksheet completion, and with study materials. It can also help people complete forms electronically. TestTalker provides a computerized version of a test, worksheet, or other form that can talk. This program supports True/False, Multiple Choice, Fill-in, and Extended Answer tests. The product includes a PDF (Adobe® Portable Document Format) converter so teachers can simply open a PDF file in TestTalker without needing to scan.

Freedom Scientific – Teacher Edition + 1 Student Edition \$399.00

Resources: Materials

Fraction Stax

This three-dimensional, stackable fraction model is ideal for students in grades 2-6. It includes 51 Fraction Stax pieces, a 5 ¼" x 14 ¼" nine-peg base and an activity guide.

www.didaxinc.com

Didax, Inc.

\$24.95

Rainbow Fraction Tiles

This colorful set of 51 proportional plastic pieces helps students visualize and compare fractions.

www.didaxinc.com

Didax, Inc.

\$14.95

Overhead Fraction Tiles

An exact match of the Rainbow Fraction Tiles, a 51 piece set of translucent plastic tiles.

www.didaxinc.com

Didax, Inc.

\$7.95

Deluxe Fraction Pieces

Color-coded sets of plastic fraction pieces. The Fraction Squares whole measures 4"x 4". The Fraction Circles whole measures 3 ½" in diameter. Deluxe Fraction Squares and Circles sets include one whole, halves, thirds, fourths, fifths, sixths, eighths, tenths, and twelfths.

www.creative-ed.com

Creative Educational Materials

Squares

\$9.50

Circles

\$9.50

Overhead Squares

\$9.50

Overhead Circles

\$9.50

Deluxe Rainbow Fraction Circles and Squares

This set includes nine circles and squares divided into fractions, with storage box/work tray.

www.creative-ed.com

Creative Educational Materials

Circles

\$7.25

Square

\$7.25

