Volume V-D
Techniques of Precision Teaching

Part 1: Training Manual

Florida Department of Education
Bureau of Exceptional Education and Student Services
1983 Reprinted 2008
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To Patrick McGreevy and his book Teaching and Learning in Plain English, which helped in making our manual more teacher related.

To Patti Durfee for her excellent illustrations.

To Ronald R. Stearns for his continued support of the Precision Teaching Project.

To Dottie Drubin, the Project's secretary, and Betty Yates of the Orange County Word Processing Center for their expertise and patience in typing the many drafts.

To the many Orange County teachers who attended the training sessions and responded with encouragement and excellent suggestions.
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INTRODUCTION

The purpose of this manual is to serve as a user's guide for Precision Teaching. It is important that teachers understand that Precision Teaching can be a valuable tool in their classrooms. Therefore, the information presented to them during beginning training needs to be clear, concise, and void of any technical jargon. When Ogden Lindsley first developed Precision Teaching he was concerned with taking the vocabulary and techniques out of the laboratory and into the classroom where great strides could be made with students.

The approach in this manual is very simple and straightforward. The material presented is all teacher-related and has been tried in classrooms and proven to be helpful to teachers as they set up Precision Teaching. This guide should be read thoroughly and the techniques followed closely as outlined. Begin on a small scale and remember that any new technique takes some time to organize and run smoothly.

The Precision Teaching Reading and Math Basic Skills Curriculum is available with this manual. The curriculum and accompanying practice sheets can further assist the teacher in implementing Precision Teaching in the classroom.
STUDENT CHANGE - ORANGE COUNTY DATA

Precision Teaching can make a change in student learning. Teachers that use it can make observations that students are learning faster and better with this technique. Because Precision Teaching is based on collecting daily data, it is wise for those in the field to gather data to substantiate the benefits of this system.

During the 1981-82 school year classes were chosen in two elementary schools in Orange County to be trained in Precision Teaching. The scores from the Comprehensive Tests of Basic Skills were compared between these classes and the classes using the "normal" methods of monitoring.

The scores below represent the mean standard score gain for the classes in the study. The class with the asterisk marked in Elementary #1 was one in which the teacher used a large amount of drill and practice in basic math skills which is a segment of Precision Teaching.

### Elementary #1

<table>
<thead>
<tr>
<th>Math 3rd Grade</th>
<th>Mean Standard Score Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Group 1, NonPT</td>
<td>29</td>
</tr>
<tr>
<td>2. Group 2, PT</td>
<td>74</td>
</tr>
<tr>
<td>3. Group 3, PT</td>
<td>72</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Math 5th Grade</th>
<th>Mean Standard Score Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Group 1, NonPT (Special Instruction)*</td>
<td>76</td>
</tr>
<tr>
<td>2. Group 2, NonPT</td>
<td>32</td>
</tr>
<tr>
<td>3. Group 3, PT</td>
<td>71</td>
</tr>
</tbody>
</table>

### Elementary #2

<table>
<thead>
<tr>
<th>Reading 4th Grade</th>
<th>Mean Standard Score Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Group 1, NonPT</td>
<td>45</td>
</tr>
<tr>
<td>2. Group 2, NonPT</td>
<td>41</td>
</tr>
<tr>
<td>3. Group 3, PT</td>
<td>76</td>
</tr>
<tr>
<td>4. Group 4, PT</td>
<td>56</td>
</tr>
</tbody>
</table>
Math 5th Grade
1. Group 1, NonPT
2. Group 2, NonPT
3. Group 3, PT
4. Group 4, PT

Mean Standard Score Gain
28
28
61
43

These results indicate that Precision Teaching can make a difference in learning.

HISTORY OF PRECISION TEACHING

Precision Teaching was developed in the mid 1960's by Dr. Ogden Lindsley at the University of Kansas. Dr. Lindsley was a student of Dr. B.F. Skinner, the founder of operant conditioning. Dr. Skinner's work was based on laboratory research with lower animals. Dr. Lindsley was interested in applying these principles of operant conditioning to the management of instruction in special and regular classes. All of Lindsley's early work proved to be very successful, and is the basis of Precision Teaching as we know today. Since that time, three major projects have had significant influence on the development of precision procedures and materials, and on education in general. The experimental Education Unit at the University of Washington, the SST Screening Project conducted by the State of Washington, and the Sacajawea Project in Great Falls, Montana, have been major developers.
PRECISION TEACHING: What Is It - What Can It Do?

Skip Berquam, Port Angeles School District, Port Angeles, Washington

Can we avoid having to review and reteach so much every September? Are there programs to identify and help students with learning problems, before they get so far behind? What is mastery? Is there a way to guarantee mastery? Can we get students more involved in their own learning? How can we promote the most learning in the shortest time?

WHAT IS PRECISION TEACHING?

Precision Teaching is a procedure to measure learning and proficiency of skills. It has three main characteristics. First, it is a direct measure; second, it is a continuous or daily measure; and third, it uses rate or frequency as a unit. Let's look at these points individually.

Direct Measure. Most of the standardized tests given every year in schools are very indirect measures of student performance. They sample only small portions of individual skills, and then only in a general manner. A direct measure of reading performance would be to count the number of correct and incorrect words a student reads from a passage in his assigned reader, and then to ask him questions from that passage. If arithmetic performance is of interest, we should count the number of addition problems or division or word problems the student can do correctly. The key is to find the most direct measure of the skill of interest.

Continuous Measure. Traditionally, we measure quite infrequently in education. A measure taken at the end of a unit, or at the end of the year can provide information on ending performance, but cannot
provide any feedback to be used to modify instruction during the unit.
In short, occasional measurement can tell us only who has failed, while
continuous measurement can pinpoint who might fail, which allows
teachers to make instructional changes. Bankers, pilots, cooks, car-
penters -- people in many professions use continuous or frequent
measurement. It certainly is no less critical to monitor the learning
progress of a child than it is the building of a house or the direction
and speed of an airplane. To provide useful information, educational
measurement must be done often.

*Frequency of Response.* It is this characteristic that separates
precision teaching from other highly structured and programmed
systems. The most common unit of measurement used in classrooms
today is number correct or percent correct. Precision Teaching in-
cludes a time factor. We measure number correct and incorrect for a
specific time period. In almost all fields, the proficient or fluent
worker is not one who does every task correctly, but one who does
tasks correctly within set time limits. The proficient waitress doesn't
just get each order accurately, she does so quickly. We remember
Babe Ruth not for one homerun, but for 60 homeruns in a season and
714 in his career. Thomas Edison invented the light bulb, but also
held 1,092 other patents. Leonardo da Vinci is remembered for painting
the Mona Lisa, but his other surviving works include 17 paintings, over
4,000 technical sketches, and 19 books. Frequency, or how often
something happens, is a critical factor in everyday life. We have found
it also to be critical for academic skills.

**ADVANTAGES OF PRECISION TEACHING**

Some of Precision Teaching's advantages have already been men-
tioned. This kind of measurement is often more valid (it measures what it is designed to measure), and more reliable (it gives a more accurate and consistent measure of performance) than traditional tests. Perhaps the greatest advantage of Precision Teaching is that it provides a measure of PROFICIENCY and a measure of LEARNING. When two students each score 100% correct on the same math paper, their performances seem to be identical. However, if one student finished in five minutes, while the other finished in ten minutes, there is a tremendous difference in performance. Rate or frequency of response will measure this difference. Once a student achieves 100% accuracy there is no way for him to show improvement, unless frequency is measured. A change in frequency is a measure of learning.

Because Precision Teaching provides useful information, it can help teachers and students get the most benefit out of the school day. We can see, for example, which students are ready to move to the next skill, which need more practice, and which need instruction. Practice, fluency building, and instructional decisions based on direct, continuous data form the foundation of Precision Teaching. Appropriate practice and instruction will allow all students to learn and to reach proficiency.

*****************************************************

Several questions were asked in the opening paragraph. Precision Teaching can help provide answers to those questions. Precision Teaching combines what has been learned about learning in the past 100 years, and applies it to practical school settings. Drill, practice, direct and frequent measurement, fluency; these are hardly new concepts in education. What Precision Teaching has done is to build them into a manageable and useful program with one goal: to promote efficient learning and proficient performance of the skills we are teaching.
Precision Teaching is easy to implement in the regular or special class. There are Five Steps To Follow.

1. PINPOINTING

2. COUNTING AND RECORDING

3. SETTING AIMS

4. CHARTING

5. DECISION-MAKING
PINPOINTING is choosing a behavior (academic or social) that the teacher wants to change. In order to change a behavior the teacher must be able to count it. In order to count it.....

Any Pinpointed Behavior Must:
1. Be Observable
2. Be Repeatable
3. Have A Start And End

Here are a few examples of good PINPOINTED behaviors:

Reading - reading vocabulary words (Words can be observed as they are read. Words are repeated as they are read and each word has a start and end.)

Math - writing addition facts (Digits can be observed as they are written. Digits are repeated as they are written and each digit has a start and end.)

Social Behavior - talk outs (Talk outs can be observed. If you are counting talk outs they should be repeated often enough to have a high count. Each talk out has a start and end.)
Let's get more practice with choosing good PINPOINTS......

Pretend you're trying to count the following behaviors. Read each sentence and answer with a YES or NO whether you could count the behavior or not and then check your answers on page 13.

1. "Mary has a learning disability."  
2. "Betty is talented."  
3. "Sue reads Houghton Mifflin vocabulary words."  
4. "John writes answers to multiply facts."  
5. "Sam is a poor student."  
6. "David is autistic."  
7. "Shirley touches the blue blocks."  

Now let's get practice with knowing what to count. Read the following statements and choose the exact behavior you could count. Check your answers on page 13.

1. "Bob reads Houghton Mifflin vocabulary words."  
2. "Angie talks out during reading class."  
3. "Nancy writes her weekly spelling words."  
4. "Cathy points to the letters of the alphabet."  
5. "David tells the class important facts from a Science chapter."  
6. "Jennifer grasps a small sponge."  

Adapted from Teaching and Learning in Plain English,
Patrick McGreevy, Kansas City, Missouri, 1981.
The next step in pinpointing is learning to describe the behavior more precisely. The behavior needs to be stated in observable terms and it is necessary to discuss learning channels first.

We all receive information through one or more of the following channels. These are called **INTAKE CHANNELS**.
We all send information out through one or more of the following channels. These are called OUTPUT CHANNELS.

Adapted from Teaching and Learning in Plain English, Patrick McGreevy, Kansas City, Missouri, 1981.
Each behavior has an **INTAKE** and **OUTPUT** channel.

**INTAKE CHANNEL** + **OUTPUT CHANNEL** + **PINPOINT** = **LEARNING STATEMENT**.

**PINPOINT**
- reading vocabulary words
- writing addition facts
- writing spelling words from dictation
- grasping a toy with partial assistance
- writing history facts after a lecture

**LEARNING STATEMENT**
- see-say vocabulary words
- see-write addition facts
- hear-write CVC words
- guide-do (grasp toy)
- think-write history facts

Look at the examples below and decide upon the correct **INTAKE** and **OUTPUT** channels and write the Learning Statement for each one.

Check your answers with the key on page 13.

1. John writes answers on a multiplication fact sheet.  
   **LEARNING STATEMENT**
   
2. Sue reads Houghton Mifflin vocabulary words.
   **LEARNING STATEMENT**
   
3. Nancy's teacher calls her weekly spelling words out to her and she writes them.
   **LEARNING STATEMENT**
   
4. David's hand is guided as he ties his shoe.
   **LEARNING STATEMENT**
   
5. Cindy feels the shape of the letter and says the sound.
   **LEARNING STATEMENT**
   
6. Gary writes the important concepts from a biology chapter.
   **LEARNING STATEMENT**
ANSWER KEYS

Page 9.
1. "Mary" NO
2. "Betty" NO
3. "Sue" YES
4. "John" YES
5. "Sam" NO
6. "David" NO
7. "Shirley" YES

1. "Bob" vocab. words
2. "Angie" talks out
3. "Nancy" spelling words
4. "Cathy" letters
5. "David" Science facts
6. "Jennifer" sponge grasps

Page 12.
1. see-write multiplication facts
2. see-say HM words
3. hear-write weekly spelling words
4. guide-do (tie shoe)
5. feel-say letter sounds
6. think-writes biology concepts
Learning statements are helpful in making each pinpointed skill more observable. By writing a student's objectives as learning statements, a teacher can be more aware of the learning channels being used for each skill. If a student does not improve on certain skills just a change in the learning channels would possibly improve performance. For example, a change could be made from see-write facts to see-say facts.

The Precision Teaching Reading and Math Basic Skills Curriculum is written in learning statements. The following examples are taken from several strands in the curriculum.

<table>
<thead>
<tr>
<th>Reading</th>
<th>Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>see-say consonant and vowels</td>
<td>see-write addition facts 0-18</td>
</tr>
<tr>
<td>see-say vowels</td>
<td>see-write addition facts</td>
</tr>
<tr>
<td>see-say consonants</td>
<td>0-9</td>
</tr>
</tbody>
</table>

These learning statements are clear, concise and can be very beneficial to the teacher in writing IEP's.

Specific practice sheets have been designed to measure the proficiency of most skills located in the Precision Teaching Basic Skills Curriculum. The Mixed Mastery practice sheet is a compilation of all the skills in a strand and can be used to measure proficiency of mixed skills. For example, on page 16 the Mixed Mastery sheet for Addition has a random sample of all the skills for that strand. This practice sheet can also be very useful as a pre-assessment which can assist the teacher in pinpointing the skills a student may lack.

Many teachers have found that choosing larger "chunks" of skills as pinpoints is beneficial to a student's overall progress. For example, a teacher may find that a student does not know any addition facts but
instead of going back to Sums 0-5, it may be advantageous to begin with Sums 0-18. The student may need more instruction or practice with this skill but the teacher may save valuable time by not taking the student through the several smaller steps to reach 0-18.

Another excellent example of "chunking" is a teacher who chooses to teach a list of 25 Functional Words rather than breaking the list into groups of five words each. This teacher may find that her students will learn the whole list faster with just a little instruction and extra practice. Therefore, breaking a skill into smaller parts is not always the most effective method of teaching. It may be advantageous to first guide students through a curriculum in larger steps. If necessary the skills can be "broken down" into smaller segments if there is no progress.
ORLANDO, FLORIDA

PRECISION TEACHING PROJECT

ORANGE COUNTY PUBLIC SCHOOLS

146

\[
\begin{array}{cccccccc}
\frac{6}{66} & + & \frac{11}{44} & + & \frac{6}{35} & + & \frac{380}{8} & + & \frac{5}{964} \\
\frac{17}{7064} & + & \frac{282}{6} & + & \frac{122}{964} & + & \frac{20}{35} & + & \frac{8}{364} \\\n\frac{1}{97} & + & \frac{4}{97} & + & \frac{42}{75} & + & \frac{8}{6} & + & \frac{22}{75} \\\n\frac{117}{22} & + & \frac{2}{6} & + & \frac{8}{75} & + & \frac{2}{97} & + & \frac{2}{75} \\\n\frac{13}{97} & + & \frac{8}{97} & + & \frac{2}{97} & + & \frac{1}{97} & + & \frac{1}{97} \\\n\frac{14}{97} & + & \frac{1}{97} & + & \frac{1}{97} & + & \frac{1}{97} & + & \frac{1}{97} \\\n\frac{15}{97} & + & \frac{1}{97} & + & \frac{1}{97} & + & \frac{1}{97} & + & \frac{1}{97} \\\n\end{array}
\]

(small digit, no reg, 1 reg.)

see write

A-21
COUNTING AND RECORDING

After a behavior has been chosen to count, the next step is to decide upon the counting period. The unit of measure used in Precision Teaching is "FREQUENCY per minute."

FREQUENCY is the number of behaviors occurring during a specified time period.

\[
FREQUENCY = \frac{\text{count of behaviors}}{\# \text{ of minutes}}
\]

which yields

COUNT PER MINUTE

One minute is used most often as a counting period for academic behaviors. It is a quick and efficient measure of the student's behavior and a reliable picture of what the student can do. For social behaviors the counting period chosen will depend on how often the behavior occurs. For example, if the student is talking out during math class, the teacher may only count the talk-outs during a 45 minute period. For each selected pinpoint, both correct and incorrect, or positive and negative responses need to be counted. This is known as a "FAIR PAIR."
The next step is RECORDING.

READING

Pretend that the CVC (consonant-vowel-consonant) practice sheet has been chosen for the student's reading pinpoint. The student will read the words from the sheet and the checker will follow along with another copy. To save paper, it is a good idea for the checker's copy to have some type of acetate cover. "Please Begin" is a good signal for starting the student and "Thank You" is a good signal for stopping the student. As the student reads the words, the incorrect responses should be marked. Self-corrected words are counted as errors. (See page 19 for more specific directions on checking.) Subtract the incorrect responses from the total words read to get the number of correct responses. Record the number correct and incorrect words read.

MATH

Pretend that a multiplication facts practice sheet has been chosen for a math pinpoint. The students may write directly on the sheets or on the acetate covers. The same signals should be used for this timing. After one minute check correct and incorrect responses (in most cases the students will use an Answer Key to check their own sheets). When checking math always count each digit as a separate response. (See page 20 for more specific directions on checking.) Record the number of correct and incorrect digits written.
<table>
<thead>
<tr>
<th>Word</th>
<th>Word</th>
<th>Word</th>
<th>Word</th>
<th>Word</th>
<th>Word</th>
<th>Word</th>
<th>Word</th>
<th>Word</th>
<th>Word</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>nap</td>
<td>tip</td>
<td>leg</td>
<td>t/h</td>
<td>flx</td>
<td>map</td>
<td>cub</td>
<td>fgn'</td>
<td>cut</td>
<td>vet</td>
<td>10</td>
</tr>
<tr>
<td>mom</td>
<td>sip</td>
<td>dim</td>
<td>web</td>
<td>rig</td>
<td>bed</td>
<td>dug</td>
<td>keg</td>
<td>pop</td>
<td>yum</td>
<td>20</td>
</tr>
<tr>
<td>yam</td>
<td>cap</td>
<td>hip</td>
<td>bun</td>
<td>yes</td>
<td>hot</td>
<td>mum</td>
<td>fib</td>
<td>hug</td>
<td>fat</td>
<td>30</td>
</tr>
<tr>
<td>sun</td>
<td>s/t</td>
<td>bob</td>
<td>flz</td>
<td>/</td>
<td>rag</td>
<td>sob</td>
<td>rod</td>
<td>zip</td>
<td>lug</td>
<td>pen</td>
</tr>
<tr>
<td>zap</td>
<td>tax</td>
<td>pet</td>
<td>cop</td>
<td>tot</td>
<td>hld</td>
<td>rag</td>
<td>him</td>
<td>run</td>
<td>hum</td>
<td>50</td>
</tr>
<tr>
<td>rut</td>
<td>web</td>
<td>men</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bed</td>
<td>hip</td>
<td>hen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rod</td>
<td>run</td>
<td>hug</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hld</td>
<td>rig</td>
<td>hum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bun</td>
<td>cut</td>
<td>fan</td>
<td>flx</td>
<td>fib</td>
<td>wlg</td>
<td>mom</td>
<td>pop</td>
<td>slip</td>
<td>bob</td>
<td>100</td>
</tr>
<tr>
<td>pet</td>
<td>keg</td>
<td>zip</td>
<td>pen</td>
<td>tot</td>
<td>yes</td>
<td>nap</td>
<td>leg</td>
<td>him</td>
<td>men</td>
<td>110</td>
</tr>
<tr>
<td>yum</td>
<td>fan</td>
<td>mum</td>
<td>hip</td>
<td>flz</td>
<td>pet</td>
<td>mom</td>
<td>bob</td>
<td>zip</td>
<td>slip</td>
<td>120</td>
</tr>
<tr>
<td>dim</td>
<td>web</td>
<td>yam</td>
<td>rig</td>
<td>bed</td>
<td>dug</td>
<td>keg</td>
<td>pop</td>
<td>yum</td>
<td>wlg</td>
<td>130</td>
</tr>
</tbody>
</table>

When correcting a reading practice sheet, mark the words that are read incorrectly. At the end of one minute, draw a stop line. Subtract the incorrect from the total words read to get the number of correct responses. The cumulative count on the side can expedite the checking process. On this sheet the count is 28 correct, 6 incorrect (28/6). The next day the student can begin the sheet after the stop line or back at the beginning of the page. Another alternative is to have the student begin on a different row each day.
a different row each day,

Students can also begin an
activity the day the sheet is turned in at the beginning.

The next day the student can begin the sheet
on the correct side. If the cumulative count on the
correct digits, the cumulative count on the
total number of digits to get the number of
incorrect digits are marked and subtracted from
should be clear where the student finishes.

When correcting a math practice sheet, each
digit is corrected as an answer. A stop line

M-9W

(Height-Yield-

Precise

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PRECISION TEACHING PROJECT

See-Write

36/6

M-9W

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ORANGE COUNTY PUBLIC SCHOOLS

PRECISION TEACHING PROJECT

See-Write

36/6

M-9W
see-write

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Write in the suffix that completes the word for each sentence.

ment ion ship ful y en less able ous th ly ness

The little girl had to take a spoonful of the medicine. The watch dog will not bite you, he is harm ful.

Mary took her car to the garage for inspection. The flashlight brightened the darkess. She walked softly so she would not wake the baby. The joke was very humorous. He was going to the doctor for treatment. She wanted to straighten her curly hair. Sue is very friendly, she is likeable.

The woman had not slept well, she was sleepy. The two children had a strong friendship. David was in the fourth grade. The winding road was very dangerous. The lost puppy was homeless. The china dish was breakable. Patti gladly went to the store for her mother. Her toothache was very painful.

The shipment arrived on air freight. The selection of dresses at the shop was very good. The couple celebrated their tenth anniversary.

When correcting a practice sheet that requires spelling, each letter is counted as one answer. Each letter written in correct order is counted as a correct answer. Any omissions are counted as incorrect. Subtract incorrect from correct to get the number of correct responses. On this sheet the count is 43 correct and 9 incorrect (43/9).

She was granted membership in the club. We thanked her. She was granted membership in the club. We thanked her.

Bob was nervous about the final exam. All of the children were nervous about the final exam. All of the children were nervous.

Soon after the concrete is poured, the teacher expected perfection. The teacher expected perfection.

There was much sadness among the family when their pet ran away. In space the astronauts are weightless. In space the astronauts are weightless.

The family gets a lot of enjoyment out of doing things together. His college graduation was a joyous occasion. That material is washable. My mother puts bleach in the wash to brighten the clothes.
It is a good idea if teachers and students will look at errors as "Learning Opportunities." Students need to be encouraged not to be afraid to make errors and to look at errors as opportunities to learn. With practice, high errors usually drop to a low frequency within a short period of time. There will be more dramatic learning if there are errors at the beginning. Errors can provide a challenge for the students!

With many students it is best to encourage "skips" when they first begin a timing. Fluency is harder to attain when students hesitate to pause over problems or words they do not know. It is up to each individual teacher whether the "skips" count against the students. A good suggestion is to not count the "skips" as errors when a student first begins. If the "skips" do not decrease over a short period of time the teacher may want to count them as errors. Remember, "skips" still signal to the teacher which problems or words need extra attention.

Timings alone will not guarantee that students will increase their learning. Many opportunities for instruction and practice must be provided for with the skill that has been chosen for a PINPOINT.

The next important element of the pinpointed skill is TOOL SKILLS. All skills have basic skills that are a necessary part in performing the original skill more proficiently. Working with these tool skills is beneficial to a student's overall progress.

For each pinpoint an appropriate tool skill needs to be chosen. For example, if the teacher has pinpointed addition facts for the student to work on, it is very important that the student has the tool skill of writing numbers at a fast rate. If the student is unable to write
numbers at a fast rate he/she will be unable to perform computational skills at a fast rate. The tool skill of writing numbers can be measured by giving the student a one minute timing of writing digits 0-9 repeatedly. Count the number of digits written. (See page 25)

For a reading pinpoint a good tool skill would be to say the alphabet or easy words. This tool skill aids the student in saying higher level words at a fast rate. The teacher can ask the student to say the alphabet from memory or look and say the alphabet repeatedly for one minute. A quick way to find the correct count is to multiply the number of times the alphabet was completed by twenty-six (the number of letters in the alphabet). Also, be sure to add any extra letters that were said.

There are proficiency aims for TOOL SKILLS (see Suggested Performance Standards page 28) and it's important that timings be continued each day on TOOL SKILLS until proficiency is reached. Every student may not be able to reach the Suggested Performance Standards on Tool Skills, but opportunities should be given to each student to reach the highest aim possible on individual tool skills.
TOOL SKILLS

are . . .

basic skills that are necessary to perform the original skill.

Here are a few examples of tool skills for academic skills:*

**Math**

Think - write digits (0-9)

Think - say counting forward (1-10, 1-20) Addition

Think - say counting backwards (10-1, 20-1) Subtraction

Think - say count by's (1's-9's) Multiplication

**Reading**

Think - say alphabet

See - say alphabet

Think - say basic vocabulary words

Think - say phonetic sounds

**Writing**

See - write slashes

Think - write slashes

See - write circles

Think - write circles

See - write alphabet

Think - write alphabet

*Adapted from Precision Teaching Project Training Manual, Great Falls Public Schools, Great Falls, Montana
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A GOOD AIM IS 120 - 140 DIGITS IN ONE MINUTE.

95/0

TELL STUDENTS THAT NUMBERS NEED TO BE WRITTEN QUICKLY BUT LEGIBLY. STRESS THAT PERFECT FORMATION IS NOT IMPORTANT AS LONG AS THE NUMBERS CAN BE READ.
It is important that teachers help students reach a proficiency level on each skill that is pinpointed. If proficiency is reached it is believed that maintenance of the skill is assured. We need to "expect the best" of each student and assist each one in reaching their highest potential.

Therefore, it is advantageous to set individual AIMS for each skill pinpointed. An AIM is an ending goal usually expressed as a specific frequency range, for example, 70-90 correct with 2 or less errors would be an excellent aim for math facts. Setting aims in ranges allows for individual differences. There will be students who reach the lower frequency aim and there are others who will reach the middle and high range. It is wise to set an accuracy measure -- 2 errors or less is considered a good standard accuracy for most skills.

Some teachers may feel that many of the standards written in this manual seem too high for students to reach. High frequencies are recommended so students will have better retention of skills. Do not be satisfied with lower frequencies. Give students every opportunity to grow and reach a high aim.

Many students benefit from the teacher setting daily or weekly aims. Other students may enjoy the teacher setting the final aim with the date it should be met. The most important tactic to remember is to look at students individually when setting AIMS. The following page should be helpful to the teacher in setting aims.
*Several ways to set AIMS is to use . . .

1. **The Suggested Performance Standards** (see page 28)

2. **Grade Level Information**
   a. Based on frequencies typically reached in the past,
   or
   
   b. Based on the median performance for this particular group of students.

3. **The Individual Student's Motor Tool Skill Frequency**
   a. Assess tool skill for approximately two weeks.
   b. Apply the following formula: 1/2 to 2/3 of tool skill frequency = reasonable aim for a related basic skill. For example, if a student's tool skill of writing numbers 0-9 is 100 then a good aim for basic facts would be 65.
   c. Raise the aim, as necessary, throughout the year.

4. **Functional Frequencies**
   a. Ideally, locate nine "experts" - people whom you would assume are proficient at the skill,
   or
   
   b. Use yourself and/or several other teachers.
   c. Perform the timed task twice
      1) Use the first timing as a warm-up.
      2) Use the median score of the group as an aim.

*Adapted from Precision Teaching Project Training Manual Great Falls Public Schools, Great Falls, Montana.
### SUGGESTED PERFORMANCE STANDARDS*

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<thead>
<tr>
<th>PINPOINT</th>
<th>READING</th>
<th>STANDARD</th>
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</thead>
<tbody>
<tr>
<td>See/Say Isolated Sounds</td>
<td>60-80 sounds/min.</td>
<td></td>
</tr>
<tr>
<td>See/Say Phonetic Words</td>
<td>60-80 words/min.</td>
<td></td>
</tr>
<tr>
<td>Think/Say Alphabet (forward or backward)</td>
<td>400+ letters/min.</td>
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</tr>
<tr>
<td>See/Say Letter Names</td>
<td>80-100 letters/min.</td>
<td></td>
</tr>
<tr>
<td>See/Say Sight Words</td>
<td>80-100 words/min.</td>
<td></td>
</tr>
<tr>
<td>See/Say Words in Context (oral reading)</td>
<td>200+ words/min.</td>
<td></td>
</tr>
<tr>
<td>See/Say Words in Context (silent reading)</td>
<td>400+ words/min.</td>
<td></td>
</tr>
<tr>
<td>Think/Say Ideas or Facts</td>
<td>15-30 ideas/min.</td>
<td></td>
</tr>
</tbody>
</table>

### HANDWRITING

Emphasizing Speed

- See/Write Slashes                                  | 200-400 slashes/min.     |
- See/Write Circles                                  | 100-150 circles/min.     |
- Think/Write Alphabet                               | 80-100 letters/min.      |

Emphasizing Accuracy

- See/Write letters (count of 3 for each letter: slant, form and ending) | 75 correct/min.          |
- See/Write - Cursive letters connected (count of 3 per letter)        | 125 correct/min.         |

### SPELLING

- Hear/Write Dictated Words                          | 80-100 letters/min.      |
- Hear/Write Dictated Words                          | 15-25 words/min.         |

### MATH

- See/Write Numbers Random                           | 100-120 digits/min.      |
- Think/Write Numbers (0-9 serial)                   | 120-160 digits/min.      |
- See/Say Numbers                                    | 80-100/min.              |
- Think/Say Numbers in Sequence (count by's)        | 150-200+/min.            |
- See/Write Math Facts                               | 70-90 digits/min.        |

*Adapted from Great Falls Precision Teaching Project Training Manual, Great Falls Public Schools, Great Falls, Montana.