

A Grade 5 Classroom: Organizing for Problem Solving

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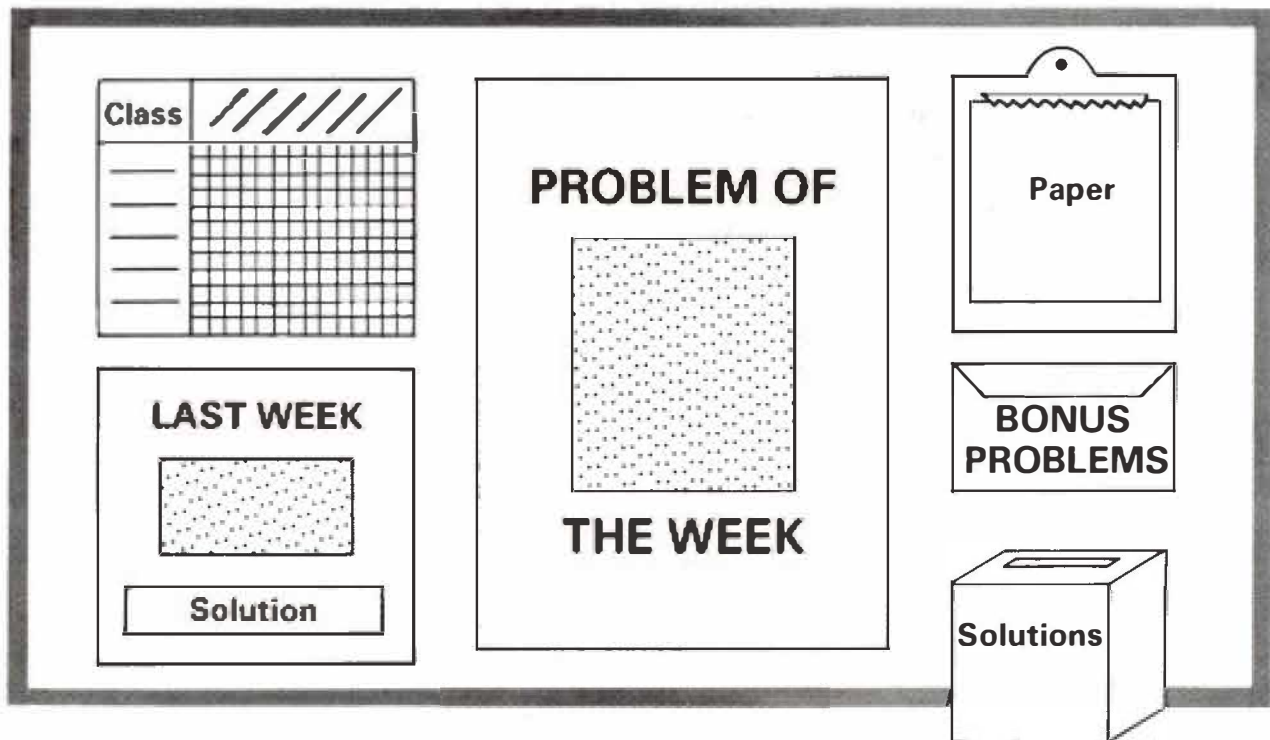
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How do teachers get started in teaching students to solve problems? How can the busy teacher keep the problem solving model before the students? One method that has proven successful is outlined below.

A good beginning is based on establishing a positive classroom atmosphere from day one. Students must feel comfortable, receive positive reinforcement, and have opportunities to be successful. Routines and expectations must be established early. Content and initial problem solving experiences should be relatively easy in order to develop confidence and establish a positive attitude. Bonus activities can be included to challenge the high achievers.

Begin the year by "baiting" students with a selection of highly motivating problems and activities (about two or three a week). They can be placed on the overhead, and all should be short attention-getting problems that students enjoy. After a few of these, most students begin asking, "When can we do more problems?"

FIGURE 1.



It is at this point that "Problem of the Week" corner is initiated. This is most successful when students have been "captured" by the initial problems and, in turn, request more on a regular basis. It becomes their corner and, with a little guidance, they build the entire program in the form of a contest.

A new problem is posted each Monday. Students are allowed to enter a solution that day, but are only permitted one entry. The entries are checked that evening, and correct entries receive five points. On day two (Tuesday), everyone else can enter again. The correct solutions on this day are worth four points. On Wednesday, three points can be awarded; on Thursday, two points; and on Friday, one point. After 10 weeks, prizes and certificates are awarded, and a new round begins.

Although optional, about two-thirds of the class participates regularly. Select problems to complement class work that week or to demonstrate or practice a particular strategy.

The first two or three problems are relatively easy, and most students earn three or more points. A good selection of bonus problems is necessary to challenge those who have solved the problem of the week on the first days. Having a panel of students bring in, make up, or select bonus problems is worthwhile.

Once the problem of the week program has been established, group students into teams of four, and present the general framework for problem solving (Polya's model). Since there are four steps involved, it is relatively easy to direct students to create a wall display similar to that shown in Figure 2.

Introduce problems that are solved by using certain strategies. Attach these strategies to the appropriate step. As new strategies are discovered,

FIGURE 2.

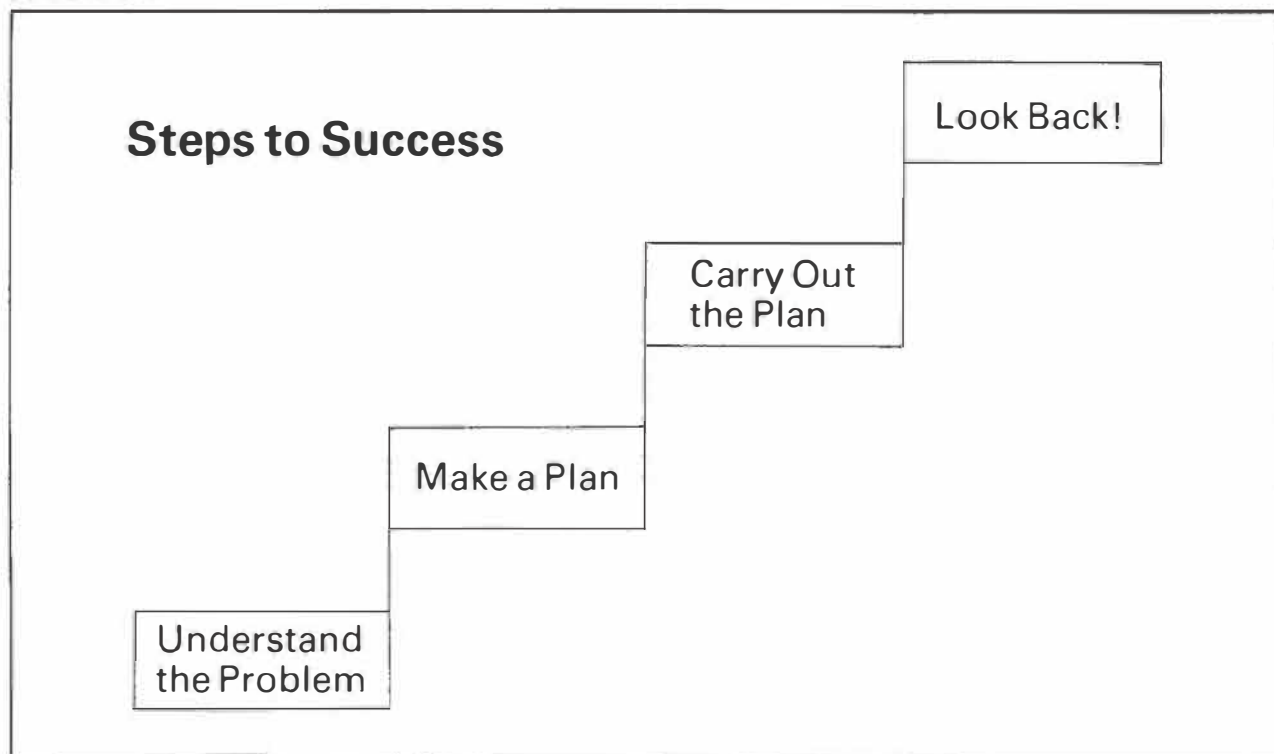
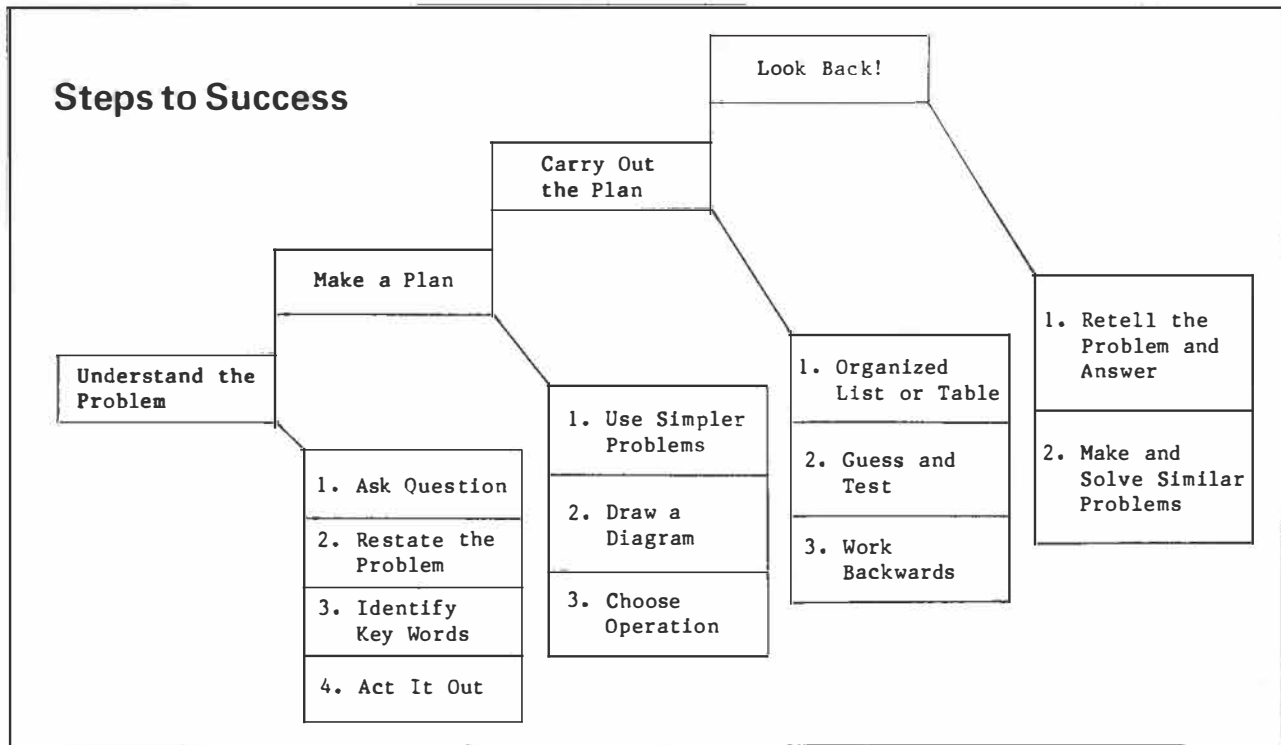


FIGURE 3.



they are added, and the lists grow throughout the year. Posting them serves as a reminder and reinforces the strategies learned.

Try to provide problem solving lessons that teach specific strategies on a regular basis during the school year. The emphasis is placed on the strategies themselves rather than the final answer. Providing a variety of meaningful and interesting problems in an atmosphere of success and having students work in small groups are integral to having a successful program. Getting your students involved in the problems, encouraging them to create their own, and maintaining your enthusiasm also helps to maintain that successful program.

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