Why Are Student Activities on a CD?

At first glance, the CD included with this book appears to be a collection of teaching tools and student activities, much like the activities that appear in many teacher resource books. But rather than taking a book to the copier to copy an activity, the CD allows you to simply print off the desired page on your home or work computer. No more standing in line at the copier or struggling to carefully position the book on the copier so you can make a clean copy. And with our busy schedules, we appreciate having activities that are classroom ready and aligned with our math standards.

What could be better than a set of engaging math activities that are ready to be used within your classroom? A set of activities that can be easily modified to create hundreds of activities suited to the needs, interests, and skill levels of your students! With this CD, you are able to use the activities exactly as they appear in the book or to modify them in countless ways. How many times have you stood at a copy machine manually changing the activity to fit your students’ needs? This CD allows you to quickly and easily change names or data or modify problem tasks at your computer and then simply print the new version of the activity. This CD of problems can serve as templates for the development of your own library of related problems!

There is no need to edit the activities if you like them just the way they appear on the CD, but if you would like to personalize the tasks with students’ names or interests, or if you would like to differentiate tasks by modifying data or changing the complexity of the task, you can click on the editable feature and then simply modify the task using simple word-processing techniques.

You may want to simplify some tasks or add complexity to others. The problems on the CD often include several parts or have added challenge extensions. When it is appropriate for your students, simply delete these sections for a quick way to simplify or shorten the tasks.

This CD, while appearing to provide you with a set of activities, gives you much more. It gives you the power to create an unlimited array of problems that are suited to your students’ interests, needs, and skills. Have fun! Get creative! And design problems that stimulate your students’ curiosity and push their skill development.
Using the CD to Engage and Motivate

The following examples will provide you with some ideas of ways to make the most of the editable feature of the CD. Whether your goal is to engage and motivate your students or to differentiate the activities to meet your students’ needs, the CD will allow you to easily adapt each problem.

Personalizing Tasks

The editable CD provides a quick and easy way to personalize math problems. Substituting students’ names, the teacher’s name, a favorite restaurant, sports team, or location can immediately engage students. In the second version of the following sample, the teacher’s name and the relevant holiday or occasion are easily inserted into the problem to make it unique for this group of students.

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**Cookies for Cinco de Mayo**

Mr. Perez bought 4 dozen cookies for his Spanish class’s Cinco de Mayo celebration. The students only ate \( \frac{3}{4} \) of the cookies, so Mr. Perez put the remaining cookies in the teachers’ lounge. When he returned after school, \( \frac{1}{3} \) of the cookies he had left in the teachers’ lounge were gone. What part of the cookies Mr. Perez bought was left uneaten after school?

**Show your work.**

**Explain how you solved the problem.**

Challenge: How many cookies did the students eat? How many cookies disappeared from the teachers’ lounge? How many cookies were left uneaten? Justify your answers.

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**Cookies for Valentine’s Day**

Mrs. Jones bought 4 dozen cookies for her Math Club’s Valentine’s Day party. The students only ate \( \frac{1}{3} \) of the cookies, so Mrs. Jones put the remaining cookies in the teachers’ lounge. When she returned the next day, \( \frac{3}{4} \) of the cookies she had left in the teachers’ lounge were gone. What part of the cookies Mrs. Jones bought was left uneaten in the teachers’ lounge?

**Show your work.**

**Explain how you solved the problem.**

Challenge: How many cookies did the students eat? How many cookies disappeared from the teachers’ lounge? How many cookies were left uneaten? Justify your answers.
Capitalize on Students’ Interests

You know the interests of your students. Mentioning their interests in your problems is a great way to increase their enthusiasm for the activities. Think about their favorite activities and simply substitute their interests for those that might appear in the problems.

In the second version of the following sample, the teacher knows that many of her students play soccer and decides to reword the task to capture their interest. Making these simple changes to the problem allows her to create a version of the problem that works best for her students.

Note: This type of editing is also important when the problem situation may not be culturally appropriate for your students. It may be that your school does not hold dances. Substituting an experience that makes sense for your students will make the problem relevant to them.
Differentiating Instruction Through the Use of the Editable Feature of the CD

Creating Shortened or Tiered Tasks

While many students are able to move from one task to another, some students benefit from focusing on one task at a time. By simply separating parts of a task, either by cutting the page into two parts or by using the editable CD feature to put the two parts of the task on separate pages, teachers can help students focus on the first part of the task before moving to the second part. Teachers might choose to provide all students with the first task and then give students the second part after they have completed the first part and had their work checked by the teacher. In the second version of the following sample, the two parts of the task are separated. Note that the spaces for student work and the lines for writing responses were expanded for students who might need more space or larger lines for writing their responses.
Sharing Pizza

1. Terrance and his sister shared a pizza. They ate \( \frac{1}{4} \) of the pizza altogether. If Terrance ate \( \frac{5}{8} \) of the pizza, how much did his sister eat?

Show your work:

Explain how you solved the problem:

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2. Terrance’s brother decided to share some pizza with Terrance and his sister. If Terrance ate \( \frac{1}{4} \) of the pizza, his brother ate \( \frac{3}{16} \) of the pizza, and altogether the three ate \( \frac{5}{8} \) of the pizza, how much pizza did Terrance’s sister eat? Justify your answer.

Show your work:

Explain how you solved the problem:

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Modifying the Readability of Tasks

Adding some fun details can generate interest and excitement in story problems, but you might prefer to modify some problems for students with limited reading ability. While the problems in the second version of the following sample are the same as in the first version, the tasks are written in simpler ways to support those students who might benefit from fewer words and simpler vocabulary. Simply deleting some of the words on the editable forms will result in an easy-to-read version of the same task.

Name _______________________________________________________

Healthy Habits

Mrs. Birch’s class was studying health and fitness. Every student decided on a plan to get healthier.

1. Danny decided to get more exercise. He rode his bike \(2\frac{1}{2}\) miles each day for 9 days. How many miles did he ride? _______

Show your work.

2. Kathy decided to eat less candy. She ate 81 pieces of candy last month and she ate only \(\frac{2}{3}\) as much this month. How many pieces of candy did she eat this month? _______

Show your work.

3. Lisa decided to drink 4 bottles of water a day. Each bottle holds 16.9 ounces. How many ounces of water did she drink in a week? _______

Show your work.

Explain how you figured out how much water Lisa drank in a week.

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Modifying Data

While all students may work on the same problem task, modifying the problem data will allow teachers to create varying versions of the task. Using the editable feature of the CD, you can either simplify the data or insert more challenging data including larger numbers, fractions, decimals, or percents. In the second version of the sample that follows, the data were altered to create a problem with a bit more complexity. The first problem involves only four games and the average is a whole number. In the second problem, there are six games and the average is a decimal. Part two of the second problem is also more complex. The first problem asks for only one additional score, and the new average is a whole number. In the second problem, part two involves two additional games, and the new average is a decimal. Whether you decide to simply change the numbers in the problem or slightly alter the other problem information, the editable CD feature allows you to create various versions of the original problem.

Name _______________________________________________________

1. Brian scored 16 points in the first basketball game of the season. He scored 13 points in the second and 9 points in the third. How many points did he score in the fourth game if his scoring average for the first four games of the season was 15?

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Explain how you solved the problem.

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2. How many total points did Brian score in his next game if his average for the first five games of the season was 14?

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2. How many total points did Brian score in his next two games if his average for the first eight games of the season was 14.5?

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Modifying the Sophistication of a Task

Understanding the problem-solving strategies and recognizing the progression of students’ thinking skills helps us see ways to modify sophisticated tasks. To solve the following problem, students must begin with the data at the end of the problem (Kathleen waited in line $\frac{3}{4}$ of an hour for the roller coaster) and work backward using that data to solve the problem. The problem is complicated with data about time and fractions, requiring students to understand fractions of an hour and to calculate fractions of fractions (What is $\frac{2}{3}$ of $\frac{1}{4}$ of an hour?). In addition, the clues are not in a simple work backward order, but rather require students to use the last piece of data (Kathleen waited in line $\frac{3}{4}$ of an hour for the roller coaster), then skip the next statement (The rapids ride wait was $\frac{1}{3}$ of the time it took to wait for the log flume) since it does not provide any useable data, and finally move backward to the initial statement (She got on the log flume ride in $\frac{2}{3}$ the time that it took to wait in line for the roller coaster) to begin to unravel the answer. While this is a wonderful problem for students who are ready for the challenge, it may be frustrating for those who may not be ready for a task with this level of sophistication.

The editable feature of the CD allows you to quickly change the order of the clues so that students are able to work backward without the confusion of skipping the middle clue. This simple change may relieve anxiety for many students and make the task more doable. In addition, changing the statement “Kathleen waited in line $\frac{3}{4}$ of an hour for the roller coaster” to “Kathleen waited in line 45 minutes for the roller coaster” provides the initial information in minutes, which may better support some students who can then find the fraction of the minutes but may be overwhelmed with finding the fraction of the fraction of an hour. The changes in the second version still present a challenging problem, but they may make the task more manageable for some students within your class.
Providing Extension Tasks

Many of the problem tasks on the CD include “challenge” questions at the bottom of the page. These tasks provide a way to extend the task but may be deleted if you feel that students may not have the time or the ability to complete the tasks. In the second version that follows, the challenge task is simply deleted.

Dinner Menu

Wolfgang was planning a dinner for his family. He decided to serve a meat, a potato, and a vegetable. He could serve ham, turkey, or roast beef. He could serve baked, fried, or mashed potatoes. He could serve peas, green beans, or corn. What are all of the possible meals that Wolfgang could have served?

Show your work.

Explain how you solved this problem.

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Challenge: Wolfgang’s daughter hates green beans. What is the probability she will have to eat a meal with green beans? Explain your answer on the back of this page. Use math data to justify your answer.
Thank you for sampling this resource.

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