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 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. Rename the file when saving it to preserve the integrity of the original activity.

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 on 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 city in which students live are easily inserted into the problem to make it unique for this group of students.

**Weather Watchers**

Mr. Purdy’s class decided to gather information on the temperature throughout the day. They recorded the data on the graph every hour and noticed a pattern. If the pattern stayed the same throughout the day, what was the temperature at 2:00 P.M. and 3:00 P.M.? Record the temperatures on the line graph below.

**The Baltimore Weather**

Mr. King’s class decided to gather information on temperatures in Baltimore throughout the day. They recorded the data on the graph every hour and noticed a pattern. If the pattern stayed the same throughout the day, what was the temperature at 2:00 P.M. and 3:00 P.M.? Record the temperatures on the line graph below.

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**Name** ___________________________________________________

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**Today’s Temperatures**

- Hours of the Day: 9:00 A.M., 10:00 A.M., 11:00 A.M., 12:00 P.M., 1:00 P.M., 2:00 P.M., 3:00 P.M.

**Temperature (°F)**

- 50
- 45
- 40
- 35
- 30
- 25
- 20
- 15
- 10
- 5
- 0

**Describe the pattern in the data on the graph.**

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What was the difference in the temperature between 8:00 A.M. and 3:00 P.M.? How did knowing the pattern help you figure out the answer?

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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 they have no previous experience with Boy Scouts and would not understand this prompt. Substituting an experience that makes sense for your students will make the problem relevant to them.

**The Boy Scout Breakfast**

The Boy Scouts were planning a breakfast in the school gym. There were 5 round tables and 4 square tables. 6 people can sit at each round table and 4 people can sit at each square table. How many people can sit at all of the tables?

**The Soccer Breakfast**

The Rockville Soccer Stars were planning a breakfast in the school gym to raise money for new team uniforms. There were 5 round tables and 4 square tables. 6 people can sit at each round table and 4 people can sit at each square table. How many people can sit at all of the tables?

Challenge: If every seat was filled for the breakfast and the cook made 3 pancakes for each person, how many pancakes did they need to cook for the breakfast? Show your work below and then explain how you got your answer on the back of this page.
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 part two. Teachers might choose to provide all students with the first task and then give students the second part after they have completed 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 widened for students who might need more space or larger lines for writing their responses.
Gathering Eggs

1. Kyle and Laura were playing a new video game in which they had to gather eggs in a basket. Kyle noticed that in the easy level of the game, the first egg earned him two points, the second egg earned four points, the third egg earned six points, and so on. How much did the eighth egg earn?

Show the pattern.

Describe the pattern that helped you solve the problem.

2. Laura reached the second level of the game, which was much harder! She had to gather golden eggs for her basket. She noticed that at this level, the first golden egg earned two points, the second golden egg earned four points, the third golden egg earned eight points, and the fourth golden egg earned sixteen points. How much did the eighth golden egg earn?

Show the pattern.

Describe the pattern that helped you solve the problem.
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 miles each day for 9 days. How many miles did he ride?

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Show your work.

2. Kathy decided to eat less candy. She ate 21 pieces of candy last month and only 9 pieces of candy this month. How much fewer candy did she eat this month?

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Show your work.

3. Lisa decided to drink 3 glasses of milk each day. How many glasses of milk did she drink in a week?

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Show your work.

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

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Name ________________________________

Healthy Habits

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Show your work.

2. Kathy ate 21 pieces of candy last month and only 9 pieces of candy this month. How much fewer candy did she eat this month?

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Show your work.

3. Lisa drank 3 glasses of milk each day. How many glasses of milk did she drink in a week?

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Show your work.

Explain how you got your answer.

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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 was altered to create a problem with a bit more complexity. Data for scoring in five games was included in the first part of the problem, and the second part requires students to find the scoring average after eight games. 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 _________________________________

Scoring Baskets

1. Brian scored 16 points in the first basketball game of the season. He scored 13 points in the second, 9 points in the third, and 10 points in the fourth. What was his scoring average for the first four games of the season?

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Show your work.

Explain how you solved the problem.

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2. If Brian scored 7 points in his next game, what would be his average for the first five games of the season? Explain how you figured it out.

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Name _________________________________

Scoring Baskets

1. Brian scored 16 points in the first basketball game of the season. He scored 13 points in the second, 15 points in the third, 10 points in the fourth, and 11 points in the 5th game. What was his scoring average for the first five games of the season?

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Show your work.

Explain how you solved the problem.

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2. If Brian scored 5 points in each of his next three games, what would be his average for the first eight games of the season? Explain how you figured it out.

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Modifying the Sophistication of a Task

Understanding the problem-solving strategies and recognizing the progression of these thinking skills help 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 the ability to calculate fractions of fractions (What is \(\frac{2}{3}\) of \(\frac{3}{4}\) 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 \(\frac{3}{5}\) of the time it took to wait for the log flume) since it does not provide any useful 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.

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**Waiting in Line**

Kathleen waited in line for rides. She got on the log flume ride in \(\frac{2}{3}\) the time that it took to wait in line for the roller coaster. The rapids ride wait was \(\frac{3}{5}\) of the time it took to wait for the log flume. Kathleen waited in line \(\frac{3}{4}\) of an hour for the roller coaster. How long was the wait for each ride?

Show your work.

What was difficult about this problem? What did you do to make it easier?

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Challenge: What was the average time that Kathleen waited in line for the rides? Explain how you got your answer on the back of this page.

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**Waiting in Line**

Kathleen waited in line for rides. The rapids ride wait was \(\frac{3}{5}\) of the time it took to wait for the log flume. She got on the log flume ride in \(\frac{2}{3}\) the time that it took to wait for the roller coaster. Kathleen waited in line 45 minutes for the roller coaster. How long was the wait for each ride?

Show your work.

What was difficult about this problem? What did you do to make it easier?

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Challenge: What was the average time that Kathleen waited in line for the rides? Explain how you got your answer on the back of this page.
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 simply deleted if you feel as though students may not have either time or the ability to complete the tasks. In the second version that follows, the challenge task is simply deleted.

Dinner Menu

Emeril 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 or mashed potatoes. He could serve peas, green beans, or corn. What are all of the possible meals that Emeril could have served?

Show your work.

Explain how you solved this problem.

Challenge: Emeril’s daughter hates peas. What is the probability she will have to eat a meal with peas? Explain your answer on the back of this page. Use math data to justify your answer.
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