



### 7<sup>th</sup> – 8<sup>th</sup> Grade Band Daily Routines Introduction

Seventh and Eighth grade students will begin most days with these Daily Routine Activities. Unlike the primary grades that come to the Daily Routine Board for the tasks, students in the upper grades may sit in their seats. In fact, with the group work expected in the activities, desk work is probably more appropriate. The graphic above demonstrates a simple permanent display. You may, however, display the activities any way you wish. Suggested times for each activity are provided in the materials below. These are merely suggestions; however, blackline masters are provided as noted in the materials list.

The Daily Routines explained in this section are the base activities for every lesson of every unit. Specific materials for activities that change such as the Measurement Lab, CGI, STAAR Performance, or the Graphing Activity will be noted in the curriculum for that particular lesson.



#### Language Objectives for Daily Routines

- Speak to partners, teacher, and class using vocabulary introduced in the Daily Routines.
- Listen to, read, speak and write the labels of the graph using Interactive Writing.
- Discuss problem solving strategies in partners, small groups and whole groups.
- Listen to, read, speak and write to understand action in word problems.

#### Math Objectives for Daily Routines

- Find, complete and create patterns.
- Solve word problems using a variety of strategies and defend their strategies.
- Compose and decompose values to show a new representation of the value.
- Use place value to group tens and ones.
- Construct concrete models of fractions.
- Compare fractional parts of a whole and sets in a problem situation using concrete models.
- Generate equivalent fractions.
- Model fraction quantities greater than one.
- Relate decimals to fractions that name tenths and hundredths.
- Measure to compare up to three items' length, weight, capacity, area.
- Solve for a variable, regardless of the position of the variable in the equation.

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## 7<sup>th</sup> – 8<sup>th</sup> Daily Routines Materials List per Activity

- **Target Number** (4 minutes)
  - BLM (blackline master) Poster of Activity
  - Target numbers are provided in the main curriculum.
- **Solve It!** (15 minutes)
  - BLM Poster of Activity
  - Grade-Band Problems
  - See a full separate section in Teachers Manual of instructions for this activity.
- **CGI** (10 minutes)
  - BLM Poster of Activity
  - Problems are suggested in the main curriculum.
- **Fraction Action** (2 minutes)
  - BLM Poster of Activity
  - Problems are suggested in the main curriculum.
- **Money Matters** (online in MAS Space only)
  - BLM Poster for Money Matters
  - Unit 3-Lesson Planning Page
  - BLM for activities and optional Family Fun Activities
- **X Marks the Spot!** (2 minutes)
  - BLM Poster of Activity
  - BLM for activity
- **Graphing** (only when needed for the math lesson)
  - Teacher/Student Created Title
  - Problems are suggested in the main curriculum
  - Gridded class-sized tablet and/or pre-made generic bar graph templates
- **Measurement** (only when needed for the math lesson)
  - Teacher-created poster
  - Tasks are suggested in the main curriculum.

### TARGET NUMBER

Every day there is a target number suggested in the overview of Daily Routines in the main curriculum. Simply hide this number from the students until you are ready to time them. Tell them that they have one minute (or 30 seconds, whatever you have) to represent the number in as many ways as possible. On your count, show the number and begin timing. When you call time, everyone must stop writing. They then group into threes or fours to share their representations with one another (give them about one minute to do that). They select one or two unusual representations to share with the class. Have the students share orally, explaining the representation if necessary; or if you are pushed for time, have all write them on the board and use a gallery walk to explore them.

You will see new and different representations as your students grow in their understandings of quantity in number.

### CGI Problems

*One CGI problem per day.*

There are 11 CGI problems written for each Unit. It will be the teacher's choice as to which problems to use on a daily basis. Numbers have been left out so that you can provide quantities that are reasonable for your students' abilities. Difficulty increases from Result Unknown to Start Unknown of each type; however, when students see the action in the problems and use manipulatives to physically act out the problem, all levels are attainable with even the youngest of children.

Using CGI with your students:

Read the word problem to the students. (For older students, have a copy for them to read.)

Ask students to solve the problem and to show their work on paper or to use manipulatives/counters.

As students are working, go around the room. Ask individual students to explain their strategy to you.

This allows several more students than usual to have your attention and, what the researchers discovered, gives you more insight into how the students are thinking. Students who are struggling will also have a chance to overhear some strategies that might make sense to them.

When students are done, ask for a volunteer to demonstrate and explain their strategy to the class. Ask for one or two more volunteers who have a DIFFERENT strategy, as this helps students understand that there is more than one way to get to the correct answer. In addition, students become more comfortable with how to give an explanation, as well as helping their fellow students understand the math involved. When students share their solutions, encourage participation by calling on someone else to explain that student's strategy. It is also important to look for and point out connections between the strategies shared.

It does take a lot of time to cover one problem, but it gives students the time they need for *learning*, instead of just "covering" the concept.

### Options:

There is a CGI graphic organizer that you can use.

If some students finish early, ask them to solve the problem again, but with a different set of numbers.

The curriculum provides three sets of numbers for each problem.

Write/scribe a student's explanation for the class to see.

Use this with your word wall. Hang a 12" x 18" piece of construction paper on the board. Ask the students to write their strategy on the paper instead of on the board. If the K-1 student uses counting as their strategy, this can be attached to their vocabulary word, "count," on the word wall. (If the student demonstrates with manipulatives, the teacher can draw the representation on the paper.)

When you and the students are comfortable with the process, you can start asking the students questions, based on situations you encounter with your group. For example: "Did you see any strategies for adding four groups of six that you would like to try the next time you have a problem like that?" or Draw a straight line of 23 circles, then draw four groups of six and ask the students, "Which has 24?" "Which is easier to check?" "Why?"

### Problem Type

#### Join

- **Result Unknown:** These are the typical problems students are used to seeing in curriculum resources. Anna had 5 marbles. Marcos gave her 3 more. How many marbles did Anna have then?
- **Change Unknown:** These are the typical "missing addend" problems. Anna had 5 marbles. How many marbles did she need to have 8 marbles?
- **Start Unknown:** *These are the typical "work backward" problems. Anna had some marbles. Marcos gave her 3 more. Then she had 8 marbles. How many marbles did Anna have to begin with?*

#### Separate

- **Result Unknown:** Typical "take away" problems. Anna had 8 marbles. She gave 3 to Marcos. How many marbles did she have then?
- **Change Unknown:** Anna had 8 marbles. She gave some to Marcos. Then she had 3 marbles. How many marbles did she give to Juan?
- **Start Unknown:** *Typical "work backwards." Anna had some marbles. She gave 5 to Marcos. Then she had 3 marbles. How many marbles did Anna have in the beginning?*

#### Part-Part-Whole

- **Whole Unknown:** These are addition problems of items in a set. Anna had 5 green marbles and 3 blue marbles. How many marbles did she have?
- **Part Unknown:** These are subtraction problems of items in a set. Anna had 8 marbles. 5 of them were green. How many were NOT green?

#### Compare

- **Difference Unknown:** These are the typical comparison problems. Anna had 8 marbles. Marcos had 5 marbles. How many more marbles did Anna have?
- **Compare Quantity Unknown:** These comparison problems are a little more challenging in the verbiage. The action is actually counting on. Marcos had 5 marbles. Anna had 3 more marbles than Marcos. How many marbles did Anna have?

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- **Referent Unknown:** *Again, challenging problems because of the verbiage, these problems are actually counting back. Anna had 8 marbles. She had 5 more marbles than Marcos. How many marbles did Marcos have?*

### Grouping / Partitioning

- **Multiplication:** These problems are straight forward multiplication word problems.
- **Measurement Division:** Students are asked to divide, but the visualization is different from what they are used to reading in text books which traditionally tell you how many sets there are, and want to know how many of each there will be in a set. In measurement division, students know how many are in a set, but need to determine the number of sets there will be. EX. You have 35 widgets and want to package them 7 to a package. How many packages will you make?
- **Partitive or Divvy Out Division:** Students divide to find the number of items per set. EX: There are 35 widgets to be packaged in 7 packages. How many widgets will there be in each package?

### Rate:

- **Multiplication:** Students multiply a smaller rate to find a larger proportional rate.
- **Measurement Division:** Students know the numerator, but need to find the denominator of the ratio. EX: It took Carl 18 hours to drive 1200 miles. At that rate, how long did it take him to drive 100 miles?
- **Partitive or Divvy Out Division:** Students know the denominator, but need to find the numerator of the ratio. EX. It took Carl 18 hours to drive 1200 miles. At that rate, how many miles did he travel in 6 hours?

### Price:

- **Multiplication:** Students multiply a smaller price to find a larger proportional rate.
- **Measurement Division:** Students know the total cost and the unit rate, but want to determine the number of items for the total cost. EX: Ingrid spent a total of \$162 on books for her drama class. If each book cost \$4.00, how many books did she buy?
- **Partitive or Divvy Out Division:** Students know the total cost and the total number of items purchased, but want to know the unit price. EX: Ingrid spent a total of \$162 on books for her drama class which cost \$4.00 each. How many books did she buy?

### FRACTION ACTION

This area is designed for the students to practice basic fraction skills. You will find the daily tasks in the overview of the Daily Routine in the main curriculum.

**MONEY MATTERS (Mas space only)**

Money Matters is a new addition to the Daily Routines in response to the National plea and State's new student expectations regarding Financial Literacy. Each day will provide a brief lesson written specifically to the expectations appropriate to the grade band, as outlined in the 2014-2015 K-8 Math TEKS.

**Because this is a very new program, and because the Financial Literacy expectations are very rigorous, with just a few minor adjustments, the curriculum for 7-8 will be the same as for 5-6.**

**Expectations**

(from Obj 10, Personal Financial Literacy)

- 10 (B) explain the difference between gross income and net income;
- 10 (C) identify the advantages and disadvantages of different methods of payment, including check, credit card, debit card, and electronic payments;
- 10(E) describe actions that might be taken to balance a budget when expenses exceed income; and
- 10(F) balance a simple budget.

**Expectations**

(from Obj 14, Personal Financial Literacy)

- 14(B) distinguish between debit cards and credit cards;
- 14(C) balance a check register that includes deposits, withdrawals, and transfers;
- 14(D) explain why it is important to establish a positive credit history;
- 14(E) describe the information in a credit report and how long it is retained;
- 14(F) describe the value of credit reports to borrowers and to lenders; [.]
- 14(G) explain various methods to pay for college, including through savings, grants, scholarships, student loans, and work-study; and
- 14(H) compare the annual salary of several occupations requiring various levels of post-secondary education or vocational training and calculate the effects of the different annual salaries on lifetime income.

The tasks for this activity will be found at the end of this Daily Routine Explanation.

**GRAPHING**

The majority of your graphing experiences will be provided during one of the math lessons.

The first graph you will want to generate, however, is a birthday graph. If your students are able to create their own class graph (first a real graph, then a bar graph made from those results), please do so.

Otherwise, help students generate the graph by giving them a sticky note with their birthday/year and name on it, then making a horizontal bar graph. You may need to help them find the months. You are simply graphing the months of the year (not the days within the months).

**Questions to Ask**

- *First allow students to tell you what they notice about the graph.* They will probably see the months that have many birthdays, and the months that have fewer. Let them use their observation skills first.
- *How many students have birthdays in the month of (month)?*
- *How do you know?* (The graph has that many sticky notes in the (month) column.)
- *Which month has the greatest number of birthdays? How do you know?*
- *Which month has the fewest number of birthday? How do you know?*
- *How many more birthdays does (month) have than (month)?* (Show students how to compare the rows.)
- *How many fewer birthdays does (month) have than (month)?*
- *If you had a choice of the month to be born, which month would it be and why?*

**MEASUREMENT**

Measurement Lab activities focus on finding area, surface and lateral surface area and other 7<sup>th</sup> and 8<sup>th</sup> grade geometry/measurement objectives as appropriate to the lessons.

**X Marks the Sport**

Students solve for  $x$ , beginning with simple, easy-to-solve problems to more difficult, progressing as the math curriculum understanding of problem solving progresses. Students should let partners solve for  $x$ , then share their strategies with the class. No materials are needed other than the BLM poster for the Daily Routine board, and the problem sheet provided in the curriculum for the lesson Daily Routine.

**Solve It! OPTIONAL for 1-2** (solve only 2-step problems)  
**Solve It! for 3-4, 5-6, and 7-8** (solve 2 and 3-step problems)

Being able to solve multi-step problems is a real-life skill. After all, most problems that we face day-to-day in our living involve having to solve several smaller problems before we arrive at the solution for the big one facing us.

In our Solve It! section this summer, we'll be working in small groups to recognize multi-step problems, solve and check each to make sure our solutions are accurate, then use that information to solve the bigger problem.

**The Set Up**

- The class is divided appropriately into small groups for each lesson's problem according to the number of steps in solving the problem.
- 2-step problems are worked with a partner; 3-step problems are worked in a group of three or triad.
- There are three problems per unit, one to be given with each Lesson.
- The chart below shows you the number of steps to a solution for each grade band, and what the teaming structure is for each lesson's problem.

Units	Grade Band 1-2 OPTIONAL for 1-2	Grade Bands 3-4, 5-6, 7-8
1	2-step, all 3 lesson pairs	2-step, all 3 lesson pairs
2	2-step, all 3 lesson pairs	2-step, all 3 lesson pairs
3	2-step, all 3 lesson pairs	3-step, triad, triad, pairs
4	2-step, pair, pair, independent	3-step, pair, pair, independent
5	2-step, pair, pair, independent	3-step, pair, pair, independent
6	2-step, all lessons independent	2, 3-step, all lessons independent

**Solve It! - The Rationale**

The difficulty in solving multi-step problems is usually not the arithmetic; the difficulty is with the words and how they flow together to make a story. Once students understand that there is a series of actions taking place, each adding its own significance to the final solution, students find the process much less daunting.

It's like the old elephant joke – Question: How do you eat an elephant? Answer: One bite at a time. So let's teach students to first recognize the “elephant” as needing more than one step to solve; then show them how taking the problem “one bite at a time” will get them to their final goal.

Each of the three lessons per unit has a very distinct approach. We'll look at those approaches in our next section.

**Varied Approaches of the Three Lessons**

**Set 1, Lesson 1 is a set of related problems (Units 1, 2, 3).** *Subsequent solutions are dependent upon preceding answers.*

- Students work in teams composed of the same number of students as there are related problems; i.e. two related problems are solved in pairs, three related problems in groups of three or triad.
- All students are given the same set of problems. Each student signs his or her name at the top of the page.
- Work the first problem, then rotate the problem page to the person on your left (clockwise).
- Look at the sheet you have been handed. Is the strategy the same or different from your strategy? Verify, or check the answer, even if the answer is the same as the one you calculated. Remember, errors do happen.
- Use the verified answer to solve Problem #2.
- Rotate the problem page to the person on your left and repeat the process.
- When all problems have been solved, rotate the problem sheet back to the person whose name is at the top of the problem sheet. Verify the final answer.

Now, discuss in your small groups the different strategies used to solve the problem.

- How are they different?
- How are they alike?
- Did you see a strategy that you had never thought to use? Explain how and why it worked.
- Did you see a strategy that you would like to have explained? Ask the person to explain it.



**Set 2, Lesson 2 is a multi-step problem which needs pulling apart. (Units 1, 2, 3)**

Students work in teams composed of the same number of students as there are steps in the problem; i.e. 2-step problems are solved in partners, 3-step problems in groups of three and so on.

- All students are given the same set of problems. Sign your name at the top of the page.
- Work as a group to break the problem apart into the smaller problems. What do you need to solve for each step of the problem? Send problem page back to the person whose name is at the top of the problem sheet. Verify the final answer.

Now, discuss in your small groups the different strategies used to solve the problem.

- How are they different?
- How are they alike?
- Did you see a strategy that you had never thought to use? Explain how and why it worked.
- Did you see a strategy that you would like to have explained? Ask the person to explain it.

**Set 3, Lesson 3 is a multi-step problem which needs pulling apart. (All problems worked in Pairs for Lesson 3, Units 1, 2, 3; and Lessons 1 & 2, Units 4 & 5)**

Students work in partners to solve the problem. There are two problems this time, one for each partner.

- Solve your own multi-step problem. Trade papers with your partner and check your partner's solution to a different problem.

Now, discuss the different strategies used to solve the problems.

- How are they different?
- How are they alike?
- Did you see a strategy that you had never thought to use? Explain how and why it worked.
- Did you see a strategy that you would like to have explained? Ask the person to explain it.

**Independent Problem Solving (Lesson 3, Units 4 & 5, all Lessons Unit 6)**

Naturally, the goal is for students to be independent problem solvers. Once students have practiced in small groups, it's time to see what they can do individually. These problems are great assessments for you as their Teacher. Everyone in the room has the same problem, but works independently to solve it. Once the problems are finished, it's time to discuss in large group:

- How did you solve the problem?
- Did someone solve it a different way?
- How are the strategies alike? How are they different?
- Did you see a strategy that you had never thought to use? Explain how and why it worked.

- Did you see a strategy that you would like to have explained? Ask the person to explain it.



**CGI Investigations!**

# Solve It!





Target  
Number

Fraction Action

What's Missing?